RESEARCH ARTICLES

Practice Settings, Job Responsibilities, and Job Satisfaction of Nontraditional PharmD and BS Pharmacy Graduates

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Submitted March 9, 2008; accepted May 11, 2008; published April 7, 2009.

Objectives. To assess differences in the practice of pharmacy and in job satisfaction between graduates of a nontraditional doctor of pharmacy (PharmD) program and a bachelor of science (BS) in pharmacy program.

Methods. Two separate survey instruments were mailed to 293 PharmD graduates and 293 BS graduates.

Results. Two hundred fourteen (73.0%) of the 293 nontraditional PharmD graduates and 189 (64.5%) of the 293 BS graduates completed the survey instruments. Nontraditional PharmD graduates expressed greater satisfaction, both in their current position and with pharmacy as a career, compared to BS graduates. Nontraditional PharmD graduates were more likely than BS graduates to practice in a hospital and have more clinical responsibilities.

Conclusions. Nontraditional PharmD graduates are more likely to have greater satisfaction with their job and with pharmacy as a career compared to BS-trained pharmacists.

Keywords: nontraditional PharmD degree, job responsibilities, job satisfaction

INTRODUCTION

Nontraditional doctor of pharmacy (PharmD) programs were developed during the 1980s and 1990s primarily to assist practicing pharmacists with bachelor of science (BS) degrees in returning to school on a part-time basis to obtain the PharmD degree. Most of these programs were designed for distance delivery and provided flexible scheduling options that enabled pharmacy practitioners to continue working during their enrollment in the program.

Research on the outcomes of nontraditional PharmD programs has been limited. Piascik and colleagues surveyed the first 30 graduates of the University of Kentucky's nontraditional PharmD program and reported that job responsibilities for graduates were more clinical compared to pharmacists with only a BS degree.¹ Fjortoft and Engle reported significant changes in practice setting, promotions, and increased levels of job satisfaction among 137 nontraditional PharmD graduates from the University of Illinois at Chicago. Sixty-nine percent of respondents indicated that they had received a promotion or job change after obtaining the PharmD degree. Those graduates also reported a decrease in how much prescrip-

tion processing they did and an increase in clinical, management, educational, and research activities, as well as greater job satisfaction. Respondents selected improved clinical skills, better patient care, and remaining current with knowledge as the 3 most important benefits of obtaining a PharmD degree.² In another study of 399 nontraditional PharmD graduates, Fjortoft and colleagues found these graduates had significantly higher levels of job satisfaction in their first position as a PharmD-trained pharmacist than in their last position as a BS-trained pharmacist. In addition, there were significant changes in practice settings and job titles among respondents. After receiving the PharmD degree, respondents reported a decrease in work in community practice settings and an increase in "other" practice settings such as long-term care, home health care, and academia. Furthermore, there was a decreased number working as staff pharmacists and an increased number working as clinical pharmacists. Eighty-eight percent of the 399 respondents either agreed or strongly agreed that the nontraditional PharmD program prepared them to perform at a higher level of practice.³

Evaluation of job satisfaction and practice settings between first professional degree, postbaccalaureate PharmD and BS-trained pharmacists has been conducted in several studies. Carroll and colleagues found that PharmD graduates were more likely to be working in community and hospital pharmacy staff positions and spending more time in distributive functions compared

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to postbaccalaureate PharmD graduates. Also, first professional degree graduates reported lower job satisfaction.⁴ Ried and McGhan found that pharmacists with a BS degree were more likely to be employed as community pharmacy managers or staff pharmacists compared to pharmacists with a PharmD degree, while those with a PharmD degree were more likely to have hospital staff or management positions. They also found that when performing the same job activities, there was little difference in job satisfaction between pharmacists with a BS and PharmD degree.⁵ Cox and Carroll compared practice patterns and job satisfaction for BS and entry-level PharmD graduates and determined that BS graduates were more likely to practice in community pharmacy. No statistically significant difference in job satisfaction between the BS and PharmD graduates was found.⁶ Barnett and Matthews compared practice patterns and job satisfaction for BS, first professional degree, and postbaccalaureate PharmD graduates. Postbaccalaureate PharmD graduates reported devoting more time to teaching, research, and management and less time in drug distribution as compared to BS and first professional degree PharmD graduates. No significant differences between degree and job satisfaction were found in the 3 groups.⁷ All of these studies were done during the early implementation of first professional degree PharmD programs in some schools and colleges of pharmacy. These early reports did not consider graduates of nontraditional programs. A review of the literature did not find any studies that compared BS and nontraditional PharmD graduates with respect to job satisfaction and practice of pharmacy.

In a survey of its first 107 graduates, the External Doctor of Pharmacy Program at UNC Eshelman School of Pharmacy (UNC's nontraditional PharmD program) reported that 44% of the respondents had received a promotion or job change since receiving their PharmD degree. For those with a job change or promotion, 80% indicated that they were spending less time with prescription processing and more time on educational activities, clinical responsibilities, management, and research. However, this earlier study did not address job satisfaction.⁸ The purpose of the current study was to assess differences in the practice of pharmacy and job satisfaction between the 293 graduates of the UNC nontraditional PharmD program and 293 UNC graduates with a bachelor of science in pharmacy degree.

METHODS

Program Descriptions

In fall 1995, the last class of students was admitted to the UNC bachelor of science in pharmacy degree program, having completed 2 years of prerequisite course

work. The 3-year pharmacy program consisted of 94 hours of didactic course work followed by 4 practice experiences.

The UNC 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 PharmD degree. The program consisted of 25 hours of didactic course work and 7 clerkships. Students who completed the didactic portion of the program were eligible to begin the experiential component. One medicine and 6 elective experiences were required. The first experience completed was a full-time, inpatient family medicine or general medicine experience. The elective experiences were primarily completed in a nontraditional manner and were designed to be part-time and indirectly precepted at the students' practice site or another clinical site. Students who completed 1 clinical experience in their BS curriculum could receive credit for 1 elective experience. In some instances, experiential credit was awarded for extensive work experience in a therapeutic area.

Survey Development and Procedure

A survey instrument was developed and mailed in September 2006 to 293 graduates of the UNC nontraditional PharmD program to assess career satisfaction and pharmacy practice characteristics. A similar survey instrument was adapted for graduates of the UNC bachelor of science in pharmacy degree program. The 293 BS graduates surveyed were matched with nontraditional PharmD graduates by decade of graduation. For example, each PharmD graduate was matched to a non-PharmD graduate who received his or her BS in pharmacy degree during the same decade as the PharmD graduate. The 64-item PharmD graduate survey instrument contained 3 domains covering demographics, nontraditional PharmD experience, and professional practice after completing the PharmD program. The 28-item BS graduate survey instrument was adapted from the PharmD graduate survey instrument and contained 3 domains covering demographics, consideration of pursuing a nontraditional PharmD degree, and professional practice. Types of items included on the survey instruments included multiple-choice questions, frequency estimates, Likert-scale responses, and open-ended questions.

Analysis

Descriptive statistics were reported as frequencies, means (standard deviation), and medians (interquartile range). Differences between nontraditional PharmD and BS graduates were evaluated using *t* tests, chi-square

statistics, and Wilcoxon signed rank tests depending on the level of measurement of the characteristic being examined. All data were analyzed using the Statistical Analysis Software (SAS) System for Windows, Version 9.1 (SAS Institute Inc, Cary, NC).

RESULTS

Two hundred fourteen (73%) of the 293 nontraditional PharmD graduates surveyed and 189 (64.5%) of the 293 BS graduates surveyed completed the survey instruments. The difference in response rates was statistically significant ($p < 0.01$); however, response rates did not vary as a function of either gender or year of graduation.

Nontraditional Comparisons Between PharmD and BS Pharmacy Graduates

BS graduates were more likely than nontraditional PharmD graduates to be married, working in a community pharmacy setting, and devoting the majority of their time on the job to prescription processing (Table 1). Nontraditional PharmD graduates were more likely to be employed as pharmacists; working over 40 hours per week; practicing

in a hospital, long-term care, or industry setting; and devoting substantial time to the provision of clinical services. Fifty-eight percent of PharmD graduates reported a cumulative BS degree grade point average of 3.01 or higher, while only 47% of BS graduates reported the same average. Nontraditional PharmD graduates also expressed greater satisfaction both with their current position and with pharmacy as a career compared to BS graduates (Table 2). Furthermore, PharmD graduates were more likely than BS graduates to rate the reputation of the program as “very important” in their decision of whether or not to enroll in a nontraditional PharmD program. In contrast, BS graduates were more likely than PharmD graduates to rate the length of time for program completion, program requirements, and tuition costs as “very important” in making this decision (Table 3).

Nontraditional PharmD Graduate Experiences

The majority of graduates rated 3 courses in the nontraditional PharmD program as “very relevant” to their pharmacy practice: Advanced Pharmacotherapy, Inpatient Medicine Clerkship, and Elective Clerkships (by

Table 1. Characteristics of Participants in a Study Comparing Nontraditional PharmD and BS Graduates

Characteristic	Pharmacy Graduates		<i>P</i> ^c
	Nontraditional PharmD Degree (N = 214) ^a	BS Pharmacy Degree (N = 189) ^a	
Male, %	33.6	40.7	NS
Age, mean (SD)	42.7 (8.09)	44.0 (8.45)	NS
Married, %	84.6	91.5	< 0.05
Years since BS, mean (SD)	18.3 (8.2)	19.5 (8.3)	NS
BS from UNC Chapel Hill, %	70.9%	100%	
BS GPA above 3.0, %	57.8	47.0	< 0.05
Currently employed as a pharmacist, %	94.8	87.8	< 0.05
Working more than 40 hours per week, %	49.8	39.3	< 0.05
Practice setting, % ^b			
Community-independent	3.4	24.4	< 0.001
Community-chain	5.4	39.9	< 0.001
Hospital	59.3	23.2	< 0.001
Industry	11.8	4.2	< 0.01
Long-term care	7.8	2.4	< 0.05
Other	17.2	7.7	< 0.01
Percentage of time engaged in the following, median (interquartile range):			
Prescription processing	15 (50)	60 (35)	< 0.001
Clinical activities	20 (45)	5 (15)	< 0.001
Management activities	5 (30)	5 (20)	NS
Counseling/educating activities	10 (15)	10 (14)	NS
Research activities	0 (5)	0 (0)	<0.001

^aDue to missing data, N values ranged from 203 to 214 for PharmD graduates and 166 to 189 for BS graduates.

^bNumbers sum to more than 100% due to individuals holding multiple positions.

^cBetween group differences evaluated via *t* tests, chi-square statistics, and Wilcoxon rank sum tests depending on level of measurement of the characteristic.

Table 2. Nontraditional PharmD and BS Graduates' Satisfaction with Current Position and Pharmacy as a Career

	Very Satisfied, %	Somewhat Satisfied, %	Neutral, %	Somewhat Dissatisfied, %	Very Dissatisfied, %
Satisfaction with current position ^a					
Nontraditional PharmD (n = 204)	52.4	35.3	5.9	4.4	2.0
BS (n = 168)	38.1	39.9	12.5	6.0	3.6
Satisfaction with pharmacy as a career ^b					
Nontraditional PharmD (n = 204)	63.2	29.9	3.9	2.5	0.5
BS (n = 167)	40.1	40.7	9.0	4.2	6.0

Abbreviations: PharmD = doctor of pharmacy degree; BS = bachelor of science degree

^ap < 0.01

^bp < 0.001

72.5%, 57.7%, and 53.0% of the graduates, respectively). In addition, respondents found that the courses were frequently or always challenging (94%) and that the course content was frequently or always current (93%). Graduates reported that the benefits most frequently experienced as a result of completing the PharmD program were better career mobility, improved clinical skills, competitive advantage when applying for a job, remaining current with knowledge, and ability to provide better patient care (Table 4). PharmD graduates also were asked about the extent to which participating in the program had increased specific abilities (1 = not at all, 2 = just a little, 3 = a moderate amount, 4 = a lot). The majority of participants responded "a lot" in regards to overall intellectual growth (54.2%) and ability to critically analyze ideas and information (53.7%). However, fewer graduates rated motivation to pursue issues presented in course materials (42.0%), ability to apply scientific concepts (41.5%), and ability to express ideas in writing (19.5%) as "a lot." Following completion of the PharmD program, nearly half of the graduates reported spending less time in activities related to prescription processing and more time in clinical activities (Table 5). At least 20% of respondents

indicated that the time they spent providing patient care, counseling, and educational and research activities had increased since obtaining their degree.

DISCUSSION

This study suggests that UNC graduates with only a BS in pharmacy are more likely to work in a community pharmacy setting compared to nontraditional PharmD graduates. The study by Ried and McGhan also reported that baccalaureate-trained pharmacists were more likely to work in a community setting compared to first professional degree PharmD graduates.⁵ The differences in practice setting are most apparent when community and hospital practice sites were examined. Less than 9% of nontraditional PharmD graduates practiced in a community pharmacy setting while almost 65% of BS graduates were employed in a community pharmacy (Table 1).

Another major finding was the differences in the time devoted to various pharmacy activities. Nontraditional PharmD graduates spent 20% of their time performing clinical activities compared to only 5% for BS graduates. Conversely, 60% of BS graduates' time was dedicated to prescription processing whereas nontraditional PharmD

Table 3. Factors Considered When Deciding to Enroll in a Nontraditional PharmD Program

Characteristic	Percent Choosing "Very Important" Response Option ^a		P
	Nontraditional PharmD Graduates ^b	BS Graduates ^c	
Reputation of the program	61.4	44.4	< 0.01
Self-instructional course delivery	49.0	53.2	NS
Length of time for program completion	35.5	56.9	< 0.01
Program requirements	31.5	50.8	< 0.01
Tuition costs	30.4	44.6	< 0.05
Entrance requirements	17.8	20.0	NS

^aResponse options were: 1 = not at all important, 2 = just a little important, 3 = moderately important, and 4 = very important.

^bDue to missing data, n values for nontraditional PharmD sample ranged from 200 to 204.

^cIn the BS sample, participants were only asked this question if they indicated that they had considered enrolling in a nontraditional PharmD program (n = 65). Due to missing data, n values ranged from 62 to 65.

Table 4. Benefits Experienced as a Result of Obtaining PharmD Degree (N = 204^a)

Benefit	Percent Choosing “A Lot” ^b
Better career mobility	61.3
Improved clinical skills	60.8
Competitive advantage when applying for a job	56.7
Remain current with knowledge	56.7
Ability to provide better patient care	50.3
Enhanced job performance	42.2
Competitive advantage when being considered for promotion	40.4
Enhanced job satisfaction	39.7
Enhanced job security	39.7
Improved research skills	32.4
Enhanced salary	9.9
Can be called “doctor”	9.9

^aDue to missing data, n values ranged from 201 to 204.

^bResponse options were: 1 = not at all, 2 = just a little, 3 = a moderate amount, and 4 = a lot.

graduates devoted only 15% of their time to these activities. With the number of pharmacists with BS degrees declining over time, prescription processing will be taken over by PharmD graduates. Maintaining job satisfaction among PharmD graduates may be challenging when this shift occurs.

The findings also suggest that graduates of the nontraditional PharmD program have greater satisfaction with their current position and with pharmacy as a career compared to a similar sample of BS graduates. The study by Ried and McGhan that compared first professional degree PharmD graduates with BS-trained pharmacists reported no difference in job satisfaction.⁵ However, the findings reported by Fjortoft and colleagues indicated that respondents from a national survey of graduates from 6 nontraditional programs expressed greater job satisfaction in their first position as a PharmD pharmacist compared to their last position as a BS pharmacist.³ As discussed previously, the satisfaction reported by nontra-

ditional PharmD graduates may be related to their hospital practice site and a decrease in prescription processing.

The most frequently reported benefits that nontraditional PharmD graduates experienced as a result of completing the PharmD program were better career mobility, improved clinical skills, competitive advantage when applying for a job, remaining current with knowledge, and ability to provide better patient care. These 5 perceived benefits were also the top 5 perceived benefits reported in the survey of the nontraditional PharmD graduates at the University of Illinois at Chicago.² Nontraditional graduates also indicated that participation in the nontraditional program had increased their overall intellectual growth and their ability to critically analyze ideas and information. These outcomes were also reported by UNC nontraditional graduates in the first survey of graduates.

Advanced pharmacotherapy, the inpatient medicine clerkship, and elective clerkships were rated by nontraditional PharmD graduates as very relevant course work. The previous UNC survey of the first 107 graduates of the nontraditional program also reported that the advanced therapeutics courses were relevant to practice and very integral to the nontraditional PharmD curriculum. The current survey included nontraditional graduates from a 10-year period as compared to the first study which surveyed graduates from a 4-year period.

Limitations

The cross-sectional nature of this study prevents us from drawing causal inferences based on the associations observed. Although nontraditional PharmD graduates reported greater job and career satisfaction than BS graduates, these differences may have been due to factors other than training. For example, pharmacists who pursue a nontraditional PharmD degree are likely to have higher self-motivation and perhaps greater commitment to excel in the profession than pharmacists who do not pursue advanced training. Because satisfaction data were not collected prior to respondents completing their PharmD degree, it is not possible to determine whether satisfaction increased after training.

Table 5. Change in Time Devoted to Specific Activities Following Completion of PharmD Program

Activity	Change in Amount of Time Spent on Activity		
	Less Time	About the Same Amount of Time	More Time
Prescription processing (dispensing)	46.7	49.2	4.1
Clinical activities (patient care)	15.7	37.9	46.5
Management activities	16.2	52.3	31.5
Counseling/educating activities	13.6	48.7	37.7
Research activities	14.6	56.8	28.6

Due to missing data, n values ranged from 192 to 198.

It is also unclear whether the higher levels of satisfaction reported by nontraditional PharmD graduates will be found among graduates of first professional degree PharmD programs. Over time, many graduates of first professional degree PharmD programs are likely to replace BS practitioners in community settings. Research will be needed to determine whether job responsibilities and satisfaction differ among community pharmacists with first professional PharmD degrees versus those with BS pharmacy degrees.

Finally, although individuals from the BS sample who were known to have PharmD degrees were excluded, information concerning residencies or postgraduate degrees was not collected. Therefore, some individuals in the BS group may have had postbaccalaureate training. If so, this may have introduced a conservative bias into study findings, lessening differences between the 2 groups.

CONCLUSION

Graduates of the UNC External PharmD Program may devote more time to the provision of clinical services than graduates with only a BS degree and may be more likely to be employed in a hospital, long-term care, or industry setting compared to BS graduates. Furthermore, nontraditional PharmD graduates are more likely to

have greater job satisfaction in their current position as well as with pharmacy as a career compared to BS-trained pharmacists.

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