RESEARCH ARTICLES

Factors That Influence the Career Goals of Pharmacy Students

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Objectives. To identify pharmacy students' short- and long-term career goals, including projected areas of practice, and evaluate the factors that influence these goals.

Methods. A 19-question survey instrument was administered to pharmacy students in each of the 4 professional pharmacy years. The results were analyzed to determine factors influencing students' career goals and to compare choices among the different classes.

Results. The most important factor considered by pharmacy students was work environment. Their career goals upon graduation were predominantly in the retail chain setting. However, 5 years after graduation, their projected areas of practice were divided between retail and clinical settings.

Conclusions. Specific factors influence pharmacy students' short- and long-term career goals and identifying these factors may provide insights to faculty members in planning the experiential curriculum and assist prospective employers in increasing job retention among new pharmacists and improving their overall job satisfaction.

Keywords: pharmacy students, career choice

INTRODUCTION

The scope of pharmacy practice as well as the primary role of the pharmacist has greatly evolved.¹ At the turn of the 20th century, a pharmacist's responsibility focused on the preparation or compounding of medicines. Today, pharmacists practice in a wide range of professional settings.² By tradition, the standard career choices for pharmacists have been hospital or community pharmacy settings, including both independent and chain pharmacies. However, as health care has advanced, career opportunities for pharmacists have expanded.

There are few studies that have assessed the factors that influence how pharmacy students make their career choices. The primary purpose of this study was to evaluate the most important factors that influence the career goals of pharmacy students. A secondary endpoint of this study was to investigate the actual career goals of students in the first, second, third, and fourth years of the PharmD program since there is an expected growth and development process that occurs as a student advances through the pharmacy school curriculum.

METHODS

Study Design

This study was approved by the Samford University Institutional Review Board. A survey instrument consisting of 19 questions and separated into 3 sections was constructed. In the first section, respondents were asked to provide demographic data to include age, current year in the pharmacy program, gender, relationship status, prior work experience, and educational background. In the second section, respondents were asked to rate the importance of 6 factors that could influence their overall career goals. These 6 factors, based on general career expectations, included salary, flexibility of work schedule, benefits, geographic location, advancement opportunities, and work environment. A 5-point Likert scale ranging from very low importance (1) to very high importance (5) was used to rate these factors. The third section asked respondents to select the pharmacy settings in which they planned to practice upon graduation and 5 years after graduation. The setting options were: retail (chain), retail (independent), clinical, hospital staff, and other. Respondents selecting "other" were asked to indicate a specific field. Based on which field respondents indicated as their area of practice upon graduation, they were instructed to proceed to a part of the survey instrument where they could rate the importance of factors specific to that field (ie, "daily interaction with general

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public” for those anticipating practicing in a retail chain setting).

In terms of the primary and secondary endpoints, this study was designed to evaluate career aspirations as related to 3 basic classifications of pharmacy practice: hospital-staff, community, and clinical pharmacy. An “other” section that encompassed pharmacy roles in other settings (eg, home infusion, nuclear, mail-order, long-term care consultant, research) provided a collective overview of the pharmacy profession.

The survey instrument was administered in fall 2007 to first-, second-, and third-year pharmacy students during a required class, and to fourth-year students during a mandatory class meeting. Each class was given 1 opportunity to complete the survey instrument with no makeup opportunities provided.

Statistical Analyses

Statistical analyses and data management were conducted using Minitab (Version 15). A complete arrangement of various descriptive statistics was computed to include frequency distribution tables, charts, and graphs. Results were tallied using frequency distribution tables for all categorical variables. Additionally, responses analyzed as means (with standard deviation) and medians were included in the final analysis report. The chi-square test for independent samples and one-way analysis of variance were conducted to evaluate relationships among practice settings and the factors that influence career goals among student pharmacists.

An alpha value was set at 0.05. In addition, an effort was made to avoid contingency tables with sparse data when conducting statistical tests. Thus, responses to questions 7 through 12 and 15 through 18 were collapsed into a 3-point scale (ie, 1, 3, and 5) in consideration of chi-square tests and analyses of variance. In this case, variable 1 described responses for very low and low importance, variable 3 described neutral responses, and variable 5 described responses for high and very high importance.

RESULTS

Three hundred fifty-four survey instruments were completed and returned. Of those, 338 instruments were considered usable. Survey instruments were considered unusable if responses were incomplete in any section. However, an incomplete response for question 5b (length of prior work experience) was considered an exception. Survey instruments returned without an appropriate response to question 5b were marked “not indicated” and still considered usable to provide results. Overall, survey instruments completed by 83 first-year, 94 second-year,

Table 1. Demographics of Pharmacy Students Responding to Survey on Their Short- and Long-term Career Goals

Variable	No. (%)
Age, y	
<19	0 (0.0)
19-21	55 (16.3)
22-24	188 (55.6)
25-27	69 (20.4)
28-30	17 (5.0)
>30	9 (2.6)
Current Year Status	
1st	83 (24.6)
2nd	94 (27.8)
3rd	86 (25.4)
4th	75 (22.2)
Gender	
Male	235 (69.5)
Female	103 (39.5)
Relationship Status	
Single	214 (63.3)
Engaged	30 (8.9)
Married	93 (27.0)
Prior Work Experience	
Where?	
Retail (chain)	218 (64.5)
Retail (independent)	76 (22.5)
Hospital	26 (7.7)
Other	15 (4.4)
How long?	
<1 year	60 (17.8)
1-2 years	57 (16.9)
3-4 years	86 (25.4)
>4 years	111 (32.8)
Not Indicated (NI)	24 (7.1)
Educational Background	
2 years undergraduate	110 (32.5)
3 years undergraduate	69 (20.4)
> 3 years undergraduate (no degree)	36 (10.7)
Baccalaureate Degree	117 (34.6)
Other	6 (1.8)

86 third-year, and 75 fourth-year student were used for statistical analyses.

Demographics

The demographic characteristics of respondents are listed in Table 1. There were 188 (55.6%) respondents from 22 to 24 years of age. The number of participating respondents was similar among first-, second-, third-, and fourth-year students. The majority of respondents indicated their relationship status was single (63.3%) and identified prior work experience in a retail pharmacy

Table 2. Importance of General Job Considerations on Students' Career Choices

General Job Considerations, n=338	Very Low Importance, No. (%)	Low Importance, No. (%)	Neutral, No. (%)	High Importance, No. (%)	Very High Importance, No. (%)
Salary	0 (0)	5 (1.5)	46 (13.6)	185 (54.7)	102 (30.2)
Flexible work schedule	0 (0)	6 (1.8)	18 (5.3)	146 (43.2)	168 (49.7)
Benefits (ie, vacation time, health insurance policies, match for 401K, stock options, bonus packages)	0 (0)	1 (0.3)	17 (5.0)	140 (41.4)	180 (53.3)
Geographic location	1 (0.3)	6 (1.8)	67 (19.8)	140 (41.4)	124 (36.7)
Advancement opportunities	3 (0.9)	16 (4.7)	94 (27.8)	142 (42.0)	83 (24.6)
Work environment	0 (0)	0 (0)	8 (2.4)	109 (32.3)	221 (65.4)

chain setting (64.5%). The majority of respondents either held a baccalaureate degree (34.6%) or had completed 2 years of undergraduate studies (32.5%).

Primary Endpoint

The primary endpoint of this study was to determine the most important factors influencing the career goals of pharmacy students (Table 2). The factor most often given very high importance was work environment. The factor indicated as the least important was advancement opportunities.

In regard to area of pharmacy practice upon graduation, 50.9% of respondents indicated the retail chain setting as their projected area of practice. A retail independent setting and clinical pharmacy were indicated next at 18.6% and 18.3%, respectively, while 8.0% of respondents indicated hospital pharmacy as their projected area of practice after graduation and 4.1% of respondents indicated "other." However, the percentage of respondents indicating independent retail pharmacy or hospital pharmacy setting as their intended area of practice 5 years after graduation decreased from 50.9% to 31.4% and 8.0% to 6.5%, respectively, while the percentage of respondents indicating independent retail pharmacy, clinical, and other settings as their intended area of practice increased to 27.8%, 24.3%, and 9.8%, respectively.

Of those respondents who indicated that their projected area of practice after graduation was retail chain pharmacy, high financial reward was the factor they rated as having very high importance (39.7%). Fast-paced en-

vironment was considered of very low importance by 2.9% of respondents. For those respondents who indicated that they anticipated practicing in the retail independent setting after graduation, flexible scheduling was considered of very high importance to 46.8% and the idea of being one's own boss was considered of very low importance to 1.6%. The majority of respondents who indicated that they anticipated practicing in clinical pharmacy after graduation considered daily interaction with other healthcare professionals of very high importance (54.8%) and academic opportunities of very low importance (3.2%). Of those who indicated that hospital staff pharmacy was their practice setting of choice after graduation, 61.5% of respondents considered daily interactions with other health care professionals of high importance, whereas 3.9% considered 24-hour scheduling of very low importance.

Secondary Endpoint

There was no significant difference in the projected area of practice between the 4 groups of students (Table 3). Retail chain pharmacy was the area of practice chosen by the highest percentage of students in each of the 4 classes. There was a significant difference in mean response to the importance of geographic location among respondents in the 4 classes. Finally, 75.9% of first-year students, 69.2% of second-year students, 80.2% of third-year students, and 89.3% of fourth-year students rated geographical location as having very high importance in job considerations ($p = 0.017$).

Table 3. Pharmacy Students' Career Goals 5 Years After Graduation

	1st Year, No. (%)	2nd Year, No. (%)	3rd Year, No. (%)	4th Year, No. (%)
Retail (Chain)	36 (43.4)	51 (54.3)	41 (47.7)	44 (58.7)
Retail (Independent)	18 (21.7)	16 (17.0)	22 (25.6)	7 (9.3)
Clinical	17 (20.5)	15 (16.0)	14 (16.3)	16 (21.3)
Hospital Staff	9 (10.8)	11 (11.7)	3 (3.5)	4 (5.3)
Other	3 (3.6)	1 (1.1)	6 (7.0)	4 (5.3)

Other Findings

Significant results were found for a variety of data endpoints that were not specific to the primary and secondary endpoints. For instance, there was a significant difference in mean response to importance of salary between respondents with 2 years of undergraduate study and those with a prepharmacy baccalaureate degree (3.97 and 4.25, respectively; $p = 0.01$). Similarly, there was a significant difference in mean response to the importance of job benefits between respondents with 2 years of undergraduate study and those completing more than 3 years with no degree (4.37 and 4.72, respectively; $p = 0.043$). Also, when comparing those students with 2 years of undergraduate study to those completing more than 3 years with no degree, there was a significant difference in mean response to the importance of daily interactions with other health care professionals in the clinical pharmacy setting (4.50 and 3.67, respectively; $p = 0.04$). This difference was not seen with those completing 3 years of undergraduate work or with those who had received a baccalaureate degree.

A flexible work schedule was of more importance to female students than male students (mean response = 4.54 and 4.12, respectively; $p = , 0.001$). Additionally, there was a significance difference in female and male students' perceptions of the importance of benefits in overall job consideration factors (4.52 and 4.37, respectively; $p = 0.031$). Female and male responses regarding interactions with the general public in the retail chain pharmacy setting were significantly different (4.23 and 3.98, respectively; $p = 0.039$) as were counseling opportunities in the retail chain pharmacy setting (4.19 and 3.87, respectively; $p = 0.011$). Similarly, mean responses for management of drug distribution in the retail chain setting were significantly different between female and male students (4.19 and 3.87, respectively; $p = 0.011$).

Significant results were also found regarding geographic location preference between respondents with retail chain and hospital experience (4.20 and 3.65, respectively; $p = 0.02$). There was also a significant difference between the first-, second-, and fourth-year students in importance of geographic location preference (3.99, 3.99, and 4.39, respectively; $p = 0.004$).

A job setting with a fast-paced environment was of high importance to those individuals who were engaged (61.1%) or married (59.5%) compared with those who were single (31.1%) ($p = 0.009$). No other significant results were found based on relationship status.

DISCUSSION

According to the Bureau of Labor and Statistics, pharmacy job openings over the next 8 years will continue to

increase.³ There is a growing need to replace retiring pharmacists and fill positions created by an expansion of employment opportunities. In addition, there has been an overwhelming increase in the demand for prescription medications, particularly among the elderly population. With demand expected to continue to grow through 2014, it is important to understand the factors that influence job site selection.

According to the results of this study, respondents felt that overall work environment is a highly important job consideration in a pharmacy career. Additionally, most respondents indicated that an appropriate benefits package (eg, vacation time, health insurance policies, match for 401K, stock options, and bonuses) was also a decidedly important factor for pharmacy job consideration. In a survey of third- and fourth-year pharmacy students in Minnesota, North Dakota, and South Dakota, Traynor et al found that the factor with the strongest influence on job choice after graduation was workplace environment, followed by professional satisfaction and geographical location.⁴ In contrast, Besier et al found that job satisfaction, salary, and being able to use one's education were the top 3 factors influencing both BS and PharmD students.⁵

Pharmacy students' goals for 5 years after graduation indicated a decline of interest in the retail chain setting. Five-year pharmacy practice goals were dispersed comparably across clinical, retail independent, and retail chain settings. This finding may suggest students' desire to first build financial stability after pharmacy school and then progress into other fields of pharmacy. As evidence of this, high financial reward was found to be the most important consideration for choosing pharmacy practice in the retail chain setting. Machado et al⁶ found that 59% of a class of fourth-year pharmacy students who were 3 weeks away from graduation and 56% of third-year students in the upcoming class planned to practice in a community pharmacy after graduation, while 12% of the graduating students and 15% of the upcoming class planned to practice in a hospital setting. However, when asked about their long-term goals, only 33% of the graduating class and 27% of the upcoming class planned to practice in a community setting, while 18% of the graduating class and 24% of the upcoming class planned to work in a hospital setting.⁶

In our study, fourth-year students considered geographical preference of high to very high importance, while first- and second-year students were neutral on the subject. This finding may suggest that, as students advance to their fourth year in pharmacy school, geographical preference becomes more important in job consideration.

In addition, flexible work scheduling was of more importance to female students than male students. This

could be due to a number of factors, including the desire to be available for family needs. Certainly, many pharmacy careers offer more flexible scheduling than is found in other health care fields. This may help explain why the field of pharmacy has a higher female-to-male ratio.

Furthermore, a significant difference in the importance of salary was found between respondents entering pharmacy school with 2 years of undergraduate study and those with a baccalaureate degree. Similarly, a significant difference was found between male and female students, as well as between those who completed 2 years of undergraduate study versus those who completed more than 3 years (no degree), in the importance of an appropriate benefits package. This same difference was not noted, however, between students completing 3 years of undergraduate work and those who had received a baccalaureate degree. On the whole, female respondents and those with extended educational backgrounds found these job factors more important than did their counterparts. These findings were curious and possibly due to variations in future aspirations and differing levels of maturity among student respondents.

Female students found daily interactions with the general public and managing drug distribution while working in the retail chain setting of higher importance than male students. Geographical location preferences were more important to respondents with retail chain work experience versus respondents with hospital work experience. This finding may correlate to the greater availability and abundance of retail chain practice sites versus hospital practice sites.

CONCLUSION

The most important job consideration factors for a career in pharmacy were work environment and benefits. Pharmacy students' career goals immediately after graduation focused predominately on the retail chain setting. Their career goals for 5 years after their graduation were in the clinical, retail independent, and retail chain settings. From a prospective employer's point of view, this study offers valuable statistical data from future employees about the factors that may help increase job retention and improve overall job satisfaction. Moreover, this study presents practical data for pharmacy educators about factors that influence their students' plans and career goals.

REFERENCES

1. Pearson GJ. Evolution in the practice of pharmacy—not a revolution. *Can Med Assoc J.* 2007;176(9):1295-6.
2. Keely JL. Pharmacist scope of practice. *Ann Intern Med.* 2002; 136:79-85.
3. Bureau of Labor and Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2008-09 Edition*, Pharmacists. <http://www.bls.gov/oco/ocos079.htm>. Accessed January 21, 2009.
4. Traynor AP, Sorensen TD. Student pharmacist perspectives of rural pharmacy practice. *J Am Pharm Assoc.* 2005;45:694-9.
5. Besier JL, Jang R. Factors affecting practice-area choices by pharmacy students in the Midwest. *Am J Hosp Pharm.* 1992;49:598-602.
6. Machado C, Zapantis A, Singh-Franco D, Marsh WA, Beckey C. Effect of faculty-mediated interventions on pharmacy students' pursuit of postgraduate training. *Am J Health Syst Pharm.* 2008; 65:158-63.