

## RESEARCH

### Attitudes and Perceptions of Dual PharmD/MBA Degree Program Students

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**Objectives.** To understand pharmacy students' reasons for pursuing a dual PharmD/MBA degree and their perceptions of the impact a dual degree will have on their careers.

**Methods.** This was a cross-sectional survey of registered students in the University at Buffalo PharmD/MBA program. An electronic survey was developed through collaboration with the UB School of Management and administered in January 2015.

**Results.** A total of 23/24 (96% response rate) students who were enrolled in the PharmD/MBA curriculum responded to the survey. Respondents identified employment opportunities following graduation and career advancement as the most influential determinants in deciding to pursue an MBA degree. All respondents (100%) felt the job marketplace for pharmacy graduates is becoming increasingly difficult, 96% believe they will earn a higher midpoint salary with a PharmD/MBA, and 82% would recommend a PharmD/MBA to first year pharmacy students.

**Conclusion.** Students are increasingly perceptive of the challenges in the current job marketplace and are taking advantage of a dual PharmD/MBA degree.

**Keywords:** PharmD/MBA, dual degree, students, master of business administration

## INTRODUCTION

Pharmacy students are entering a competitive job market upon graduation. Perhaps due to the economic recession in the last decade or the recent expansion in pharmacy programs, the demand for pharmacists is struggling to keep up with the number of pharmacists seeking employment.<sup>1</sup> Aside from the sheer volume of pharmacists entering the workforce, the practice of pharmacy is evolving as well.

The American Association of Colleges of Pharmacy (AACCP) published the 2013 CAPE Educational Outcomes including new components in the pharmacy curriculum that have not been previously discussed.<sup>2</sup> CAPE 2013 established an essential premise for pharmacists now and in the future, including interprofessional collaboration, population health management and entrepreneurial skills.

Dual degree programs at schools of pharmacy provide additional skills that fulfill and may exceed the expectations of CAPE 2013. The objectives of a dual doctor of pharmacy (PharmD)/master of business administration (MBA) degree at the University at Buffalo include the development of the

business background and skills necessary to enter leadership positions within health sciences management. These skills include business knowledge in the areas of operations management and finance as well as the development of managerial skills and abilities necessary to function in a changing health care environment. The goals of a PharmD/MBA align well with CAPE 2013 as these educational outcomes stress personal and professional development in the areas of leadership, innovation and entrepreneurship.

Dual PharmD/MBA degree programs have been developed at schools of pharmacy throughout the United States.<sup>3</sup> It is the most prevalent dual degree, which may be due to its broad range of applications in a number of different professional settings. As dual degrees are becoming more widespread they may help develop and distinguish students in an increasingly competitive job market.<sup>3,4</sup> This article looks into the various applications of a PharmD/MBA dual degree from the student perspective. As these programs generally include a small number of students, there is a relative lack of data assessing this population. Chumney and colleagues investigated dual PharmD/MBA students in the mid-2000s evaluating their satisfaction with their program, academic performance and earning potential.<sup>5,6</sup> These studies may not be currently valid as they predate the recent surge in PharmD graduates and shifts in the job market. As the pharmacy environment has

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changed, it is likely we would have different findings among PharmD/MBA students than previously reported.

The University at Buffalo School of Pharmacy and Pharmaceutical Sciences and School of Management jointly offer a five-year program leading to a PharmD/MBA degree. Since the 1970s, the two schools have offered a version of a collaborative degree program, initially starting as a bachelor of science in pharmacy/MBA and progressing to a PharmD/MBA, as both programs evolved their curricula. The dual degree program reduces by one year the usual pattern of a four-year PharmD program and a two-year MBA program. Candidates must meet all degree requirements of each school, except for the reduction in total credit hours. Students apply to the MBA program during their first or second professional year, and fulfill all application requirements set forth by the School of Management. These include a cumulative GPA of 3.0 in the required courses of the PharmD program at the end of their first professional year, satisfactory standardized test score (including PCAT, GRE or GMAT), two letters of reference and two personal statements (Appendix). Students then take MBA courses full-time during their next academic year and return to the School of Pharmacy to complete their MBA requirements concurrently with their pharmacy courses.

To fulfill the internship or rotation requirements of both schools, students must complete a management-focused PharmD APPE elective or take a three-credit hour MBA internship, which may be completed at any point during years 2-4 of the PharmD/MBA curriculum. Since 1998, the program has averaged one to two students per academic class. However, recently we have seen an increase in enrollment within the program, with 14 PharmD/MBA graduates from 2011-2014, and 24 students enrolled with expected graduations from 2015-2018. Minimal changes have been made to the PharmD/MBA curriculum during this time period that may have prompted this increase in enrollment. Therefore, we believe this provided an opportunity to study this population and be able to draw meaningful conclusions based on our survey. This study aims to understand pharmacy students' reasons for pursuing a dual degree and their perceptions of the impact a PharmD/MBA will have on their careers.

## METHODS

We conducted a cross-sectional electronic survey evaluating PharmD/MBA students' perceptions and attitudes of the PharmD/MBA program and their career goals following graduation. The 24 students enrolled in the dual PharmD/MBA program at UB SPPS were invited to participate in an anonymous web-based survey distributed through Qualtrics (Qualtrics, LLC, Provo, UT). The survey instrument was administered in January 2015 and a six-week deadline was

given for completion. A reminder e-mail was sent three weeks after initial mailing to encourage study participation. This study was approved by the Social and Behavioral Institutional Review Board at the University at Buffalo.

The survey instrument was developed by a multidisciplinary team, including two pharmacists with an MBA, an assistant dean from the UB School of Management and a researcher with experience in survey methodology. Published literature was reviewed for validated survey instruments related to the current study, but no useful tools were found. The questionnaire was pilot tested among first and second year pharmacy (P1 and P2) students for readability, length and relevance of specific items.

The survey instrument consisted of two sections totaling 24 questions. Section 1 included personal characteristics and academic-related questions, including age, gender, year in professional program (P1, MBA1, P2, P3, or P4), completion of core classes at the school of management, and whether the respondent currently planned on completing post-graduate training (PGY-1, PGY-2, fellowship or other). Section 2 included questions about the students' perception and attitudes toward the PharmD/MBA program. To assess influences on the decision to pursue a dual PharmD/MBA degree, respondents ranked factors by level of importance (1=most important to 7=least important). The anticipated utilization of their pharmacy and MBA degrees in their entry level jobs following graduation was scored through a constant sum mechanism ranging from 0% to 100% (respondent's sum could not exceed 100% between both degrees). Using a 5-point Likert scale, students reported their perceptions about the quality of their education regarding the PharmD/MBA, the important benefits of earning both degrees, and their preparedness upon graduation to be competitive in the current marketplace. Additional questions were in multi-answer formats including multiple choice or fill in the blank.

Descriptive statistics were used to evaluate the data. Answers to questions that used a 5-point Likert scale were condensed into three categories (agree/strongly agree, neutral, and disagree/strongly disagree) and were summarized by frequencies. Responses to influences to pursue a dual PharmD/MBA degree were ranked by importance (1=most important, 7= least important) and reported as a mean. Not all respondents answered each question, and thus numbers were adjusted as appropriate for each item. Data were analyzed using SAS, version 9.4 (SAS Institute Inc., Cary, NC).

## RESULTS

A total of 23 out of 24 PharmD/MBA students completed the survey, indicating a 96% response rate. The characteristics of the respondents are presented in Table 1. Respondents were primarily male (65%), average age

Table 1. Baseline characteristics of the PharmD/MBA students

	N = 23/24 (96% Response Rate)
Total Participants	No. (%)
Age, mean (SD)	24 (2)
Male/Female	15/8 (65/36)
Current year in professional program	
MBA1	7 (30)
P2	7 (30)
P3	3 (13)
P4	6 (26)
Have you completed core classes at SOM?	
Yes	12 (52)
No	11 (48)
Do you plan to complete post-graduate training following graduation?	
Yes	11 (48)
No	12 (52)
What type of post-graduate training? (n=11)	
PGY-1	4 (36)
PGY-2	1 (9)
Fellowship	3 (27)
Undecided	3 (27)

Abbreviations: SOM, school of management

of 24 years with 30% currently in the MBA portion of the curriculum and 70% currently in the PharmD curriculum. Approximately half of respondents (48%) indicated plans to pursue post-graduate training following graduation. Specialties that respondents were considering for post-graduate training in descending order included: marketing (64%), drug regulatory affairs (45%), and health economics and outcomes research (36%).

Respondents were asked to rank potential influences for their decision to pursue a dual PharmD/MBA degree (with lowest mean value indicating the most important). Improved employment opportunities (mean = 1.8) was the most influential determinant in deciding to pursue an MBA degree (Figure 1). Other influences included career advancement (mean = 2.0) and job satisfaction (mean = 3.4). Respondents then identified the most important benefits of earning a PharmD/MBA based on their current perspective. All participants (100%) felt marketability was an important benefit of the dual degree followed by job market competitiveness (95%), opportunities for career advancement (91%) and having a diverse skill set and education (91%) were important. Higher paying job (72%) and networking (77%) were the least important benefits of the dual degree.

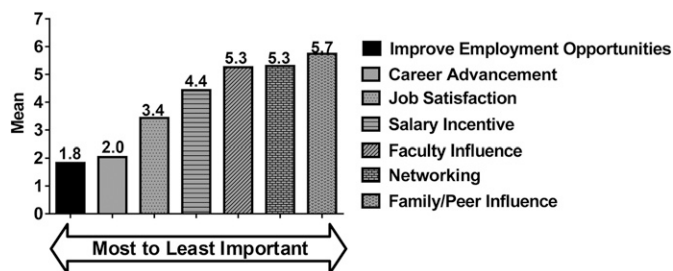


Figure 1. Influential reasons identified by pharmacy students to pursue a dual PharmD/MBA degree (Importance is based on lowest mean score).

Respondents' perceptions and attitudes of the PharmD and MBA degrees are summarized in Table 2. All respondents (100%) felt the job marketplace for current pharmacy graduates is becoming increasingly difficult and 95% believe a PharmD/MBA degree would make them more competitive in the job market. Nearly all students (96%) believe they will earn a higher midpoint salary in their career with a dual PharmD/MBA degree. Most respondents would recommend the dual PharmD/MBA program to an entering student (82%) and felt the effort to earn an MBA degree has been worth it (86%).

After graduation, respondents indicated they expected to utilize 59% of their pharmacy degree and 41% of their MBA degree within their entry level positions. Their anticipated practice settings varied with managed care (22%) and hospital or independent pharmacies (17% each) being the most common choices. Academia (5%) and chain or federal pharmacies (9% each) were shown to be the least desirable working environments. The ultimate career goals among this cohort of PharmD/MBA students included mid-level management (39%) or chief executive officer (22%).

## DISCUSSION

At UB SPPS, we have seen a 71% increase in the number of students enrolled in the dual PharmD/MBA program. This increase in popularity parallels the recent surge in pharmacy graduates, number of schools of pharmacy and the easing of the national shortage of pharmacists.<sup>7</sup> As of July 2015, there are 132 PharmD programs with accreditation status in the United States (with three schools in pre-candidate status).<sup>8</sup> Students are becoming increasingly aware of the difficulty in the job marketplace for current pharmacy graduates. We found that all student respondents were aware of the challenging job market, and improvement in employment opportunities was the most influential reason for this cohort to pursue a dual PharmD/MBA. Chumney and colleagues found that PharmD/MBA graduates had a higher number of job

Table 2. Pharmacy Students' Perceptions and Attitudes of the Dual PharmD/MBA Degree Program

Perceptions and Attitudes <sup>a</sup> (n = 22)	Strongly Agree/Agree	Neither	Disagree/Strongly
	No. (%)	No. (%)	Disagree No. (%)
The job marketplace for current pharmacy graduates is becoming increasingly difficult.	22 (100)	0	0
Has the effort to earn an MBA been worth it?	19 (86)	2 (9)	1 (5)
I would recommend the dual PharmD/MBA program to an entering student.	18 (82)	3 (14)	1 (4.5)
I will be more competitive in the job market with a dual PharmD/MBA degree.	21 (95)	1 (4.5)	0
I will earn a higher entry level salary with a dual PharmD/MBA degree.	12 (55)	6 (27)	4 (18)
I will earn a higher salary at the midpoint in my career with a dual PharmD/MBA degree.	21 (96)	1 (4.5)	0
I will have more opportunity for career advancement with a dual degree.	21 (95)	1 (4.5)	0
A PharmD/MBA degree will give me employment opportunities which would be unavailable without a MBA.	17 (77)	5 (23)	0
I will have an increased job satisfaction.	16 (73)	5 (23)	1 (4.5)
I will have a positive return on my investment in earning a dual PharmD/MBA degree.	19 (86)	3 (14)	0
I am satisfied that the dual PharmD/MBA program is meeting my needs/goals.	15 (69)	5 (23)	2 (9.1)
I will have more opportunity for increased networking opportunities with a dual degree.	17 (78)	4 (18)	1 (4.5)

<sup>a</sup>One student did not answer this section of the questionnaire

interviews as compared to the rest of their class.<sup>5</sup> As this study was conducted prior to the rapid rise in pharmacy graduates it may not reflect current patterns. However, we believe the addition of the MBA degree or any graduate degree has the ability to open new doors and create interesting opportunities for pharmacy graduates.

This study demonstrates that dual PharmD/MBA students believe the extra effort to earn an MBA was worth it and would recommend a PharmD/MBA to an entering student. Chumney and Ragucci found similar responses in their assessment of satisfaction among PharmD/MBA students at the South Carolina School of Pharmacy.<sup>6</sup> As a pharmacy student, it is difficult to determine whether an MBA is worth the extra effort, time and resources. We performed a separate study including current pharmacy/MBA professionals and asked the abovementioned questions of whether an MBA was worth the additional effort.<sup>9</sup> We found that most (>75%) pharmacists with an MBA would recommend earning an MBA in addition to their pharmacy degree and believe the extra coursework was worth the effort.

We found that approximately half the dual-degree students were planning on completing post-graduate training following graduation. This is in contrast to previous

findings in which only 17% of dual degree students were entering a post-graduate program.<sup>5</sup> Due to the recent competitiveness within the job market, we may be seeing a shift to where students are completing both a secondary degree and pursuing residency or fellowship opportunities. Practitioners who go after both avenues would achieve the apex of training as described by Shannon and colleagues, in which both programs complement one another.<sup>10</sup> Our findings are limited to our institution, but given that the number of PharmD/MBA programs in the US have increased by 73% since 2007 and marketability is an important attribute for this specific cohort, the apex of training may become the new standard for PharmD/MBA students.<sup>5</sup> We believe PharmD/MBA students will continue to pursue post-graduate training, either residency or fellowship based, in order to enhance their skill set and marketability in the current work environment. By pursuing a dual degree, these students should be more competitive in the post-graduate application process and as educators, we should encourage our dual degree students to pursue these opportunities in order to develop them into pharmacist leaders.

We collected information on students' perceived utilization of each degree within their entry level position

and their long-term goals. Students believe they would utilize approximately 60% of their pharmacy degree and 40% of their MBA within their entry level position. In our examination of pharmacy/MBA practitioners, we found the ratio to be 71% to 29%, favoring the pharmacy degree.<sup>9</sup> We feel the MBA is a complementary degree to a PharmD and will be more beneficial over the progression of a career. Also, the average base salary for a graduate with an MBA from the University at Buffalo was \$63,000 compared to \$116,000 for an entry level pharmacist.<sup>9,11,12</sup> For these reasons, higher utilization of the PharmD within an entry level position is not surprising. Interestingly, approximately 60% of the cohort have long-term goals to become a mid-level manager or a CEO. Similar findings were seen from a different group of PharmD/MBA students in which 47% indicated their desire to move into a management position.<sup>5</sup> This is not unexpected, as the attributes necessary to pursue a second degree are the same ones needed to climb the corporate ladder.

There are limitations to our study. First, our sample included only 23 respondents at a single institution. However, we did have a 96% response rate to our survey which enhances our internal validity, and typically there are a limited number of students within an entire school that participate in dual degree programs. Therefore, we believe our number of respondents is large enough to make valid conclusions. Second, external validity of our study would have been enhanced through participation from multiple institutions. However, given the reputation and long-standing existence of the UB pharmacy/MBA program, we believe these respondents are representative of the typical PharmD/MBA student at other institutions across the country. Finally, our study is potentially limited by social desirability bias and the possibility that students were reluctant to answer questions truthfully. We believe this was limited as the study was completely voluntary, anonymous, and all questions were analyzed in aggregate.

## CONCLUSION

Pharmacy students are increasingly perceptive of the challenges in the current job market and are taking advantage of a PharmD/MBA in order to become more competitive. Many of these dual degree students are planning to

continue their education through post-graduate training programs. A tight job market and a recent surge in the number of pharmacy graduates may lead to a generation of well-trained, interprofessional pharmacists that will enhance the future of the profession. Future research is needed to examine the nuances of career progression of dual degree candidates.

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Appendix 1. Curriculum Timeline for Dual Degree Program PharmD/MBA Students at the University at Buffalo School of Pharmacy and Pharmaceutical Sciences and School of Management<sup>a,b,c</sup>

<b>Year of Pharmacy School</b>	<b>PharmD/MBA Dual Degree Courses</b>	<b>MBA Credit Hours</b>
Year 1	School of Pharmacy and Pharmaceutical Sciences First Professional Year curriculum	No MBA Courses, Application, and Admission Process
Year 2 (Fall Semester)	MGA 603 Financial Accounting for Managers	2 credits - first 7 weeks
	MGB 610 Organizational Behavior	2 credits - 14 weeks
	MGB 611 Team Skills	1 credit - 14 weeks
	MGF 611 Financial Analysis for Managers	2 credits - second 7 weeks
	MGO 695 Foundations of Entrepreneurship	1.5 credits - second 7 weeks
	MGG 635 Management Communications	1.5 credits - first 7 weeks
	MGM 615 Marketing for Managers	2 credits - second 7 weeks
	MGQ 608 Statistical Analysis for Managers	2 credits - 14 weeks
	MGQ 609 Analytics for Managers	1 credit - 14 weeks
Year 2 (Spring Semester)	MGA 605 Accounting for Management Decision Making	2 credits - second 7 weeks
	MGE 604 Business Economics	2 credits - first 7 weeks
	MGO 620 Operations Management	2 credits - first 7 weeks
	MGO 640 Business Strategy	2 credits - 14 weeks
	MGS 605 IT Management	2 credits - second 7 weeks
Year 3 (Fall)	MGT electives	6 credits
	Follow School of Pharmacy and Pharmaceutical Sciences curriculum	N/A
Year 3 (Spring)	MGX XXX MBA Elective	3 credits
	Follow School of Pharmacy and Pharmaceutical Sciences curriculum	N/A
	MGO 642 Integration of Business Functions	1 credit - 14 weeks
Year 4 (Fall)	MGO 644 Business Practice	1 credit - 14 weeks
	Follow School of Pharmacy and Pharmaceutical Sciences curriculum	N/A
Year 4 (Spring)	MGX XXX MBA Elective	6 credits
	Follow School of Pharmacy and Pharmaceutical Sciences curriculum	N/A
Year 5 (Fall and Spring)	MGX XXX MBA Elective	6 credits
	Rotation/Internship Requirement	3 or 6 credits
Totals (MBA)	Management Core	27 credits
	Management Electives	21 credits

<sup>a</sup>Admission Requirements: Apply to the MBA program during the first or second professional (P1 or P2) year by February 1 (for international applicants) or by May 15 (for domestic applicants), Cumulative GPA of 3.0 in the required courses of the PharmD program at the end of the first professional (P1) year. Standardized test: PCAT, GRE, or GMAT, Two letters of recommendation, Two Personal Statements (Short- and long-term career objectives and ethics, teamwork or leadership statements) Note: Bachelor's degree is NOT required for PharmD candidates

<sup>b</sup>Rotation/Internship Requirement: To fulfill the curricular requirements of both schools, the student must complete one of two options: (1) Take one approved management-focused PharmD APPE electives (6 hours) to fulfill the MBA internship requirement (3 hours). (2) Take a 3-hour MBA internship. Students still must fulfill six APPE rotations for PharmD completion. MBA internship can be completed at any point during years 2-4

<sup>c</sup>Recent Changes: The PCAT can be accepted in lieu of GMAT or GRE. If the PCAT is not completed, the GRE or GMAT will need to be submitted. Students may apply to the MBA program during the first or second professional (P1 or P2) year