

RESEARCH ARTICLES

Impact of a Dual PharmD/MBA Degree on Graduates' Academic Performance, Career Opportunities, and Earning Potential

Elinor C.G. Chumney, PhD, MSc, Kelly R. Ragucci, PharmD, and Kathy J. Jones, MA

South Carolina College of Pharmacy, Charleston, SC
School of Business, The Citadel

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Objective. To evaluate the academic experience and satisfaction of students who completed a dual PharmD/MBA degree program and the program's long-term impact on the students' career choice and earning potential.

Methods. GPAs, job placement, and starting job salaries were compared between graduates who completed the dual PharmD/MBA program and those who completed only the PharmD program. A satisfaction survey instrument was administered to 17 students who completed the dual PharmD/MBA degree program in May 2007. Data from a standardized job placement and starting salary survey instrument completed by all PharmD graduates were also obtained, as well as all students' final grade point averages (GPAs). GPAs, job placement, and starting job salaries were compared between graduates who had completed the dual PharmD/MBA program and those who had completed only the PharmD program.

Results. The graduating GPAs of dual-degree students were higher than those of both pharmacy (3.52 vs 3.41, $p > 0.10$) and business (3.82 vs. 3.68, $p = 0.018$) students not enrolled in the dual-degree program. Dual-degree students were slightly less likely to enter a residency (17% vs. 27%, $p = 0.44$) than other pharmacy graduates. Among those who elected not to pursue a residency, both mean starting salaries (\$111,090 vs. \$101,965) and mean total first-year compensation (\$127,290 vs. \$110,388) were significantly higher for dual-degree graduates compared to the PharmD graduates.

Conclusions. Students enrolled in the dual-degree program did slightly better academically than students who completed only the MBA or PharmD programs and indicated a high level of satisfaction with the program. Dual-degree graduates reported increased career opportunities and were slated to earn significantly more during their first year in the workforce. These results affirm continuation of our program and make the case for support of similar programs across the nation.

Keywords: dual degree, master of business administration (MBA) degree, curriculum, grade point average, salary, career opportunities

INTRODUCTION

Over the last 2 decades, dual doctor of pharmacy (PharmD)/master of business administration (MBA) degree programs have been developed at a number of colleges of pharmacy throughout the United States. These programs have 2 primary objectives: (1) to instill in students the business background and skills necessary to enter management positions within pharmacy and (2) to allow students to earn an MBA degree in less time and at a lower expense than if they were to pursue the 2 degrees

independently.¹ The dual degree is considered highly desirable for persons seeking careers in institutional practice settings, the pharmaceutical industry, pharmacy benefit management organizations, and academia. In fact, many professional pharmacy associations, including the American Society of Health-System Pharmacists (ASHP), have advocated the creation of such programs for the purpose of filling leadership positions in pharmacy.

The American Association of Colleges of Pharmacy (AACCP) states that 30 (34%) US colleges of pharmacy currently offer a PharmD/MBA degree.² Because the majority of these programs are relatively new and generally include only a small number of students, there is very little information in the literature on actual student experiences or job placement and salaries after graduation. There is an implicit assumption that an MBA must certainly be an

Corresponding Author: Kelly R. Ragucci, PharmD, Associate Professor, Pharmacy and Clinical Sciences South Carolina College of Pharmacy, MUSC Campus, P.O. Box 250192, Charleston, SC 29425. Tel: 843-792-1674. Fax: 843-792-0436. E-mail: raguccik@musc.edu

asset to a pharmacist's career in a variety of practice settings, but again, information on both student satisfaction and the effect of completing such a program is limited.

As outlined in our companion *Journal* publication, the dual PharmD/MBA degree program between the South Carolina College of Pharmacy (SCCP)-Charleston and The Citadel's School of Business Administration is one of the largest programs of its kind in the nation.³ The faculty and administration at the SCCP determined a need to offer such a program to students in order to help meet the need for pharmacists who understand general business principles as well as direct patient care. Originally, a committee consisting of 3 faculty members from the College of Pharmacy (1 PhD, 1 PharmD, and 1 MBA) and 2 faculty members from the Citadel's School of Business Administration was formed. The program was developed to allow students to achieve both degrees in the same 4-year period it would normally take to finish a PharmD degree alone. Students were allowed to select MBA courses to satisfy pharmacy elective requirements and vice versa. In addition, a portion of their MBA tuition was waived under a previously existing agreement between area colleges. Together, these conveyed a significant savings in credit hours and tuition over that required of students who might pursue both degrees concurrently outside of the program.

As constructed, pharmacy students take the GMAT and apply to The Citadel's School of Business Administration during the spring semester of their first year in the College of Pharmacy. In addition to being registered as full-time students in the SCCP pharmacy program (having completed at least 1 semester), students must fulfill all application requirements at the Citadel's School of Business Administration. These include a satisfactory GMAT score (GMAT \geq 410) and undergraduate GPA, 2 letters of reference, and an application essay (Appendix 1). The students then take MBA courses full-time during the summer of their second- and third-professional years and concurrently with pharmacy courses during their second- and third-professional years (no more than 3 MBA credit hours can be taken during the spring and fall semesters). Required courses include *Financial and Managerial Accounting*, *Management Information Systems*, *Personal Communication*, *Organizational Theory*, and *Strategic Management*. All of the MBA courses are offered in the evenings, so no scheduling conflicts arise. Of those courses on the list, students in the PharmD only program are also required to take *Pharmacy Management*, *Designs for Outcomes Research*, and *Pharmacy Law/Ethics*. In addition, there are several MBA courses that may count toward the 8 PharmD elective credit hours required, including *Professional Communications*, *Management Information Systems*, *Financial Management*, *Marketing*

Management, *Organizational Behavior*, *Strategic Management*, *Consumer Behavior*, and *Human Resource Management*. Although the pharmacy curriculum is set, there is some flexibility in the order in which the MBA classes may be taken.

Because the first and foremost mission of the college is to produce qualified pharmacists, applications for the dual-degree program are postponed until students are well into their second semester of classes at the College of Pharmacy. This would give students the opportunity to settle into the pharmacy curriculum and the unique demands of graduate school so that they could better judge whether they were interested in and capable of handling additional coursework toward an MBA. Because there were initially a few cases of students with relatively low first-professional year pharmacy GPAs who chose to pursue the dual degree, applications have since been limited to those students with a cumulative first-professional year GPA greater than or equal to a 3.0. However, this policy was implemented after this particular graduating class began the program and therefore has no bearing on the results.

The initial interest in the dual PharmD/MBA was overwhelming, resulting in a cohort of dual-degree students and a sample size large enough to enable us to draw meaningful conclusions based on survey and academic data. We surveyed this group midway through the program to evaluate their academic experience and satisfaction and found that they were performing above average in both programs and expressed a high level of satisfaction with the program, strongly agreeing that the program was meeting their needs. In addition to again assessing students' level of satisfaction with the program and academic performance, the purpose of this follow-up survey was to determine what if any difference this dual degree made upon graduation.

METHODS

All 76 students graduating from the South Carolina College of Pharmacy-Charleston in 2007 were asked to complete a 12-item survey instrument about job interviews, job offers, eventual placement, starting salaries, and bonuses (Appendix 2). A Student's *t* test was used to determine whether the observed difference in salaries was statistically significant ($\alpha = 0.05$). Analyses were performed using Stata 8.0 software (College Station, TX). The 17 PharmD/MBA dual-degree graduates were asked to complete additional open-ended questions about their experience within the dual-degree program: how difficult did they find the program, did they feel it was worth the effort, and whether/how the dual degree facilitated their job placement.

To determine whether the dual-degree students continued to perform well in the PharmD program despite the extra demands on their time, we compared their graduating GPAs to those of their classmates (n = 59). Again, a *t* test was used to determine whether the observed difference was statistically significant. To measure whether these dual PharmD/MBA students were also performing well in the MBA program, their mean graduating GPA at The Citadel was compared with that of the other 2007 MBA graduates (n = 68).

RESULTS

Seventy-five (99%) of the 2007 graduates from the College of Pharmacy class completed the survey instrument. Dual-degree graduates listed exposure to the business side of pharmacy, interaction with students outside of the College of Pharmacy, and improved problem-solving, leadership, communication, and writing skills among the most rewarding aspects of the program. Several mentioned the necessity of a business background in today's world of increasing health care costs and felt better equipped to balance providing optimal patient care with minimizing costs. Furthermore, they unanimously reported that the MBA degree helped to set them apart in the interview process, and many noted that interviewers were particularly interested in the program.

Students enrolled in the dual-degree program did better over the course of their academic career than their counterparts (Table 1). The average graduating GPAs of the PharmD students who elected to enroll in the dual-degree program were higher (mean GPA = 3.52) than the average for the rest of their class (mean GPA = 3.41), although this difference was not statistically significant. The average graduating GPA of the dual-degree students in the MBA curriculum was significantly higher than that

Table 1. Mean Graduating Grade Point Averages of Students Enrolled in a Dual PharmD/MBA Degree Program Compared to Those of Their Non-Dual-degree Peers

	Graduating GPA, Mean (SD)
Pharmacy Curriculum	
Dual PharmD/MBA degree students	3.52 (0.28)
Non-dual-degree students (PharmD only)	3.41 (0.37) ^a
Business Curriculum	
Dual PharmD/MBA degree students	3.82 (0.22)
Non-dual-degree students (MBA only)	3.68 (0.11) ^b

Abbreviations: PharmD=doctor of pharmacy; MBA: master of business administration; GPA: grade point average

^a*p* > 0.10, *t* = -1.29

^b*p* = 0.018, *t* = -2.43

of the rest of their class (mean GPA 3.82 vs. 3.68, *p* = 0.018).

Dual-degree students reported a higher number of job interviews (3.9 vs. 2.5, *p* = 0.013). Approximately 50% of the graduates ended up in community pharmacy, regardless of their participation in the dual-degree program (47% of PharmDs and 53% of PharmD/MBAs, *p* = 0.7). Because we collected information on the students' long-term goals, we were able to code the responses based on whether they indicated a plan to move into a management position or to own/open their own pharmacy, and we found that significantly more dual-degree students (47% vs. 20%, *p* = 0.03) indicated that one or both of these goals were their intent.

Dual-degree students were slightly less likely to enter a residency (17% vs. 27%, *p* = 0.44) than other pharmacy graduates. Because residency salaries are generally much lower than traditional hospital or community pharmacy salaries, we analyzed salary data on the subset of students who elected not to pursue a residency (n = 55). Both mean salaries (\$110,090 vs. \$101,965) and total compensation (\$127,290 vs. \$110,388, including sign-on bonuses and other inducements awarded during the first year) were significantly higher for dual-degree graduates compared to their PharmD graduate colleagues (Table 2).

DISCUSSION

The increase in the number and popularity of dual PharmD/MBA degree programs in the United States¹⁻⁶ parallels that of similar dual-degree programs in the colleges of nursing⁷⁻⁹ and medicine.¹⁰⁻¹⁴ There are currently 30 PharmD/MBA dual-degree programs, 56 master of science (MS), master of nursing (MN), or MSN/MBA dual-degree programs, and 49 doctor of medicine (MD)/MBA dual-degree programs (Table 3).^{2,14,15} Despite the widespread popularity of these programs and the implicit assumption that an MBA must certainly be an asset to

Table 2. Average Starting Salary and Total First-Year Compensation for Dual PharmD/MBA Degree Graduates Compared With Traditional PharmD Graduates

Degree Program	Average Starting Salary, \$	Average Total First Year Compensation, \$
Dual PharmD/MBA degree students (n = 13)	111,090	127,290
Non-dual-degree students (PharmD only, n = 55)	101,965 ^a	110,388 ^b

Abbreviations: PharmD: doctor of pharmacy; MBA: master of business administration

^a*p* = 0.015, *t* = -2.51

^b*p* = 0.033, *t* = -2.18

Table 3. Comparison of Dual-degree Programs in Business Administration by Colleges of Health Profession^{2,14,15}

College	Dual Degree(s)	Colleges Offering Dual MBA Degrees, No. (%)
Pharmacy	PharmD/MBA	30/89 (34)
Medicine	MD/MBA	49/125 (39)
Nursing	MS/MBA, MN/MBA, or MSN/MBA	56/418 (13)

Abbreviations: PharmD: doctor of pharmacy; MBA: master of business administration; MD: medical doctor; MSN: master of science in nursing; MS: master of science; MN: master of nursing

a health professional's career, this is the first published research comparing job placement and level of remuneration between a relatively large sample of students who chose to participate in one of these programs and those who did not. Considering the fact that few students typically enroll in dual-degree programs each year at any given institution, the number of graduates included in the survey (n = 17) was relatively large.

This study demonstrated that dual PharmD/MBA students continued to have an overall high level of satisfaction with the program and performed better academically than their peers in both curriculums.³ These dual PharmD/MBA students might have self-selected into the program with an accurate assessment of their ability to simultaneously handle the demands of 2 rigorous curriculums. When interviewed, the students attributed their success in both programs to strong time-management skills and a commitment to excel. As stated earlier, the program is designed to allow students to enroll in the dual program only after completing the first 2 semesters of the pharmacy curriculum, allowing the students to determine their interest and capability of handling additional coursework. These results, the increased number of job interviews, and boost in initial earnings afforded by the dual degree upon graduation affirm the continued use of this process at this institution.

In addition, we found that students in the dual-degree program were less likely to enter a residency program. This is interesting but perhaps not surprising, as these students are not necessarily interested in careers in traditional clinical pharmacy. On the other hand, perhaps more education and awareness of pharmacy practice management residencies is warranted, as none of our students applied for such residencies. Many students were either not aware that they existed or did not believe that this additional training was necessary.

The significant difference in salaries between dual-degree and single-degree students suggests that perhaps

these students have better negotiating skills and/or are beginning their careers in managerial roles. With the current shortage of pharmacists and the fact that many individuals are not interested in or trained for managerial roles, these graduating pharmacists are often offered these positions at the start of their careers or shortly after entering the workforce.

Our study is potentially limited by student recall bias and the possibility that factors other than a second degree were involved in the higher salaries our dual-degree students received. Although there are many possible confounding variables that were not included in our analysis (such as student interview skills and motivation), potential employers found our dual-degree students highly desirable. It may be that many of the attributes potential employers favored are the same ones that led these students to pursue a second degree in the first place.

Although students have been highly satisfied with the program overall, improvements such as a need for additional advising/mentoring (especially from faculty members with PharmD/MBA backgrounds) and more assistance in registration and financial aid have been noted.³ In order to address these issues, the College of Pharmacy has appointed a faculty member with a PharmD/MBA background to work with the Citadel to expand their established mentoring program. With regard to registration, additional course sections have been added and class ceilings increased to accommodate student interest in the program. To address concerns regarding financial aid, the financial aid offices at both institutions met to determine the best approach for resolving issues related to their disparate federal funding cycles. The authors believe that the success of the program and the low number of drop-outs can be attributed to consistently addressing these concerns and continuing to improve communication between both Colleges. In addition, as mentioned previously, students are only allowed to enroll in the program after completing the first 2 semesters of the doctor of pharmacy curriculum, which enables them to fully assess their interest and capability. We believe that this is also a key element in preventing later withdrawals.

CONCLUSION

Although approximately one third of all colleges of pharmacy in the United States now offer dual PharmD/MBA degrees, this is the first published formal assessment and analysis comparing academic performance, job placement, and salaries of dual-degree students with those in a traditional program. Students enrolled in the dual program did better academically than their counterparts in both the pharmacy and business curriculums and had higher mean job salaries upon graduation. In addition,

these students indicated an overall high level of satisfaction with the dual-degree program. These results affirm the continuation of the dual PharmD/MBA program between The Citadel's School of Business Administration and the South Carolina College of Pharmacy and provide evidence of significant benefits that could be used to bolster support for and participation in similar programs across the nation.

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Appendix 1. MBA Curriculum and Plan of Study for Dual PharmD/MBA Degree Students at the South Carolina College of Pharmacy

PharmD/MBA Degree Students at the South Carolina College of Pharmacy^{a,b}

Year of Pharmacy School	MBA Courses	MBA Credit Hours
Year 1-2 (Summer)	Financial Accounting for Decision Making (BADM 601)	3 hours
	Economics for Decision Making (BADM 606)	3 hours
	Professional Communications (BADM 608)	3 hours
Year 2 (Fall)	Pharmacy Management (PHMPR 663)	3 hours
	Organizational Theory (BADM 607)	1.5 hours
	Foundations of Marketing (BADM 609)	1.5 hours
Year 2 (Spring)	Managerial Accounting for Decision Making (BADM 603)	1.5 hours
	Fundamentals of Finance (BADM 605)	1.5 hours
Year 2-3 (Summer)	Management Information Systems (BADM 612)	3 hours
	Financial Management (BADM 614)	3 hours
	Marketing Management (BADM 616)	3 hours
Year 3 (Fall)	Pharmacy Law/Ethics (PHMPR 711)	3 hours
	Organizational Behavior (BADM 618)	3 hours
Year 3 (Spring)	Designs for Outcomes Research (PHMPR 709)	2 hours
	Statistics for Outcomes Research (PHMPR 751)	1 hour
	Strategic Management (BADM 625)	3 hours
Year 4	Grand Rounds (PHMPR 838 and 839)	1 hour
	Pharmacy Administration Rotation (PHMPR 849)	4 hours
	Outcomes Management Rotation (PHMPR 855)	4 hours

^aAdmission Requirements: (1) Be a full-time student in the PharmD program, having completed at least one semester; (2) Submit application to The Citadel's School of Business Administration along with the following: GMAT scores; undergraduate GPA; 2 letters of reference; and application essay

^bThis is the curriculum that the 2007 graduates completed and the admission requirements they applied under; the MBA curriculum has recently been changed to all 3 credit hour classes with 6 hours of electives and we now require a 3.0 GPA in the pharmacy curriculum for admission

Appendix 2. South Carolina College of Pharmacy Class of 2007 Exit Survey (Administered April and May 2007)

1. Which of the following descriptions fits you best at this time:
 - a. Accepted a pharmacist job/position
 - b. Received pharmacist job offers but am undecided at this time
 - c. Accepted a residency position
 - d. Not seeking a pharmacist position at this time (please clarify at end of survey)
 2. How many positions have you interviewed for?
 3. How many job offers have you received?
 4. If you have taken a job, is it full time or part time?
 5. If you have taken a job, is it in South Carolina or out-of-state?
 6. If you have taken a job, is it:
 - a. Community
 - i. Community chain company, if so please specify:
 - ii. Independent pharmacy, if so please specify:
 - iii. Grocery chain company, if so please specify:
 - b. Hospital, if so please specify:
 - c. Nuclear, if so please specify, if so please specify:
 - d. Residency, if so please specify:
 - e. Other, if so please specify:
 7. What is your annual salary:
 8. Will you receive a sign-on bonus?
 - a. If yes, please specify the amount:
 9. Will you receive tuition reimbursement or other compensation with the first year from your future employer:
 - a. If yes, please specify the amount:
 10. Please include any other details of your contract related to projected advancement and/or special training programs offered by your future employer:
 11. What are your long-term (10 years) career goals?
 12. Are you in the dual PharmD/MBA degree program?
 - a. If so, how difficult did you find the dual degree program?
 - b. If so, did you feel it was worth the effort?
 - c. Please elaborate on whether (and if so, how) the MBA degree helped to set you apart in the interview process or played a part in your job placement:
-