VIEWPOINT – POINT/COUNTERPOINT

Has The Time Come for a Bachelor's Degree Prerequisite to Pharmacy School?

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During my 10 years as an experiential education director, I have come to resolutely believe that students learn best using a holistic approach of both content and learning environment—in other words, experience is essential. I opted to “track-in” to the doctor of pharmacy program at a university with the option of obtaining a 5-year bachelor's degree as an entry to pharmacy practice. I thought the additional experience would prepare me and make me more marketable for the changing pharmacy workforce. Fast-forward twenty years, I have completed 2 residency programs and a master's degree.

As a faculty member, I participated in the curricular revision in 2008 that increased the preprofessional pharmacy program from 2 to 3 years. Similar to other schools across the country, the school moved some of the basic science courses that had been historically taught for decades by pharmacy faculty members into the preprofessional curriculum. This transition was initiated because we wanted to maintain a strong science background but needed to increase credit hour space for more experiential education in the professional program, as required by the 2007 ACPE Standards and Guidelines. As an experiential education director, this was a move I strongly supported. We discussed the option of requiring a bachelor's degree at the time but thought that might hinder competition with neighboring pharmacy schools for recruits.

My colleague Adam Pate makes a valid argument in this Point/Counterpoint that pharmacy education is entering another era of evolution. I would assert, however, that now is not the time for us to reduce preprofessional requirements but instead to augment them and potentially require a bachelor's degree prior to entry into the professional pharmacy program. I believe this is the right path for 4 primary reasons: (1) obtaining a bachelor's degree is a predictor of academic success in pharmacy school; (2) this move would be consistent with other health care professions; (3) this change could facilitate implementation and assessment of new standards in pharmacy education that focus on enhanced personal and professional development skills; and (4) this would create uniformity among programs, decreasing competition for

admissions and potentially uniting us more in pharmacy education and as a health care profession.

First, students who enter pharmacy school with bachelor's degrees are more academically successful than those without. Almost 20 years ago, Chisholm and colleagues reported that a bachelor's degree was one of the most important predictors of academic success in first-year students,¹ and more recently, Hougum and colleagues also found that prior attainment of a bachelor's degree was a predictor of success.² McCall et al reported that completing advanced biology courses and a bachelor of science degree correlated significantly with higher grade point average,³ and Renzi et al reported that students with a bachelor's degree performed better academically, particularly in the first professional year.⁴

Based on their research, Boyce and Lawson suggested that the preprofessional program should consist of at least 6 semesters. Further, they proposed, “the completion of the baccalaureate degree is likely to enhance the student's general abilities, but will also enhance their maturity and demonstrate their ability to complete a program.”⁵ In that vein, there has been a significant increase in programs that require 3 years of prepharmacy training or bachelor's degrees.⁶ Nine schools require bachelor's degrees, and several others give preference to applicants with bachelor's degrees in admissions formulas.⁷ As of fall 2014, 50% of students entering US doctor of pharmacy programs had bachelor's degrees.⁸

Second, a baccalaureate degree requirement in pharmacy would be consistent with other health care professions' entry requirements. To enter medical school, almost all students have a prior bachelor's degree, the type of which does not matter in terms of predicting success.^{9,10} The majority of physical therapy programs require applicants to earn a bachelor's degree prior to what is now the terminal doctor of physical therapy program.¹¹ Nurse practitioners at a minimum must have a bachelor's of nursing plus 2 years of additional professional training, and the trend is now to move towards a doctoral program.¹² Physician assistant programs perhaps vary the most across the nation, but they, too, mostly require bachelor's degrees for

admission and will require a terminal master's degree beginning in 2020.¹³ The length of professional programs vary, but an overwhelming majority of these health care professionals, with whom student pharmacists will interact, will possess bachelor's degrees in addition to their professional degrees.

Third, requiring a bachelor's degree will increase the likelihood that those who enter a pharmacy program will have had exposure to enhanced personal and professional development prior to admission. The latest iteration of the Center for the Advancement of Pharmaceutical Education (CAPE) Outcomes and the Accreditation Council for Pharmacy Education (ACPE) Standards 2016 emphasize the importance of personal and professional development and focus on individual characteristics such as leadership, self-awareness, empathy, motivation, attention, and interest.^{14,15} While no specific evidence suggests that an individual with a degree will have more of those characteristics, the maturity level of these students is higher, and they generally have a broader perspective and educational level.^{4,6} Obtaining more education may correlate with 2 important psychological factors—that of perseverance and passion for long-term goals, which has been defined by Duckworth et al as “grit.”¹⁶ Their research demonstrated that those with more education had more grit compared to those of same age with less education.

I firmly believe that a solid basic science foundation is essential for every entering student pharmacist. Perhaps it is time, though, to determine which science and math courses are most critical, and whether we should consider requiring other nonmath and nonscience courses. If we consider medical school and other prerequisite models, some programs require humanities courses. Students with a greater background in the humanities tend to be more adept than those without this background at empathy, professionalism, and self-care.¹⁷ This exposure may also provide the background needed for areas of increased focus and expertise in the health care realm, such as health literacy and cultural competency. If we require a bachelor's degree that includes more humanities courses, this might facilitate the implementation and assessment of Domain 4 of the CAPE Outcomes (personal and professional development), allowing us to more easily identify those students in need of enhanced skill development.

Lastly, the most important reason to require a bachelor's degree is, as Boyce and Lawson suggest, the need for consistency.⁵ We have debated and wrestled with preprofessional curriculum requirements for years. Likewise, competition among schools has also long existed, but has escalated over the past few years. We need to consider if our competition for the best and brightest students has

become unhealthy, or even flawed. If the preprofessional requirements were more unified, this would decrease competitiveness and provide a more standardized preparation and entry into the profession.

DeLander suggested more than 10 years ago that we should rigorously examine preprofessional requirements.¹⁸ Five years later, Kirschenbaum called for the same.¹⁹ The 2011-2012 Argus Commission recommended that requirements be minimized in favor of better assessment and admission tools.²⁰ Perhaps if we required a degree, it would help unite the academy, who could then focus more on the advancement of our professional programs.

Challenges would need to be addressed if we transitioned to a required bachelor's degree. Academic fatigue and increased costs are legitimate concerns. However, our profession needs more grit, and we need to strengthen and maintain a reputation of training that aligns with other health care professions. Student debt is another likely concern, but pharmacists remain among the highest paid health care professionals. With change, there would be significant implications for 0-6 and other programs that would require careful consideration. The supply and demand of pharmacists in the workforce and number of applicants will also need to be closely monitored, especially in light of the most recent Pharmacist Workforce Survey, which revealed 15% of male and 6% of female pharmacists plan to retire by 2017.²¹

Dr. Pate and I agree on 2 things: the future of pharmacy is bright, and it is imperative that the academy answer this lingering question. We differ, however, on what that answer should be regarding preprofessional curriculum requirements. The focus on preprofessional curriculum quantity should be put to rest. Instead, we should determine how to unite as a profession and focus on the quality of our curricula and on the care we'll provide to our awaiting patients.

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