RESEARCH

Key Business of Health Care Topics and Strategies to Implement Within Doctor of Pharmacy Curricula

Kathryn A. Morbitzer, PharmD, MS,a,b Stephen F. Eckel, PharmD, MHA,a Mary R. McClurg, PharmD, MHS,a Jacqueline E. McLaughlin, PhD, MSa,b

a UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina; b Center for Innovative Pharmacy Education and Research, UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

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Objective. To explore pharmacist alumni perspectives on what topics and how the business of health care should be incorporated into pharmacy school training.

Methods. An exploratory sequential mixed-methods design was used. Focus groups were conducted to elicit pharmacist alumni perspectives about business of health care topics and strategies for student learning and curricular implementation. Purposive sampling was used to identify alumni participants who could provide substantive feedback aligned with the needs of this evaluation. Ten alumni attended one of three focus groups over a two-month period. Thematic coding was used to identify themes. Results from the focus groups were used to inform survey development distributed to alumni of the pharmacy school. Survey data were analyzed using descriptive statistics.

Results. Findings from the focus groups and survey indicated that the business topics most important for students to learn were communication strategies, health care operations, the health care payer system, managing teams, and career options within pharmacy. Focus group participants recommended a variety of activities to help students learn and apply business topics and emphasized that simulations and real-world experiences were needed to help students learn these topics and assess their understanding. Instructors should be currently or recently employed in the business sector to provide credibility. Barriers to implementation occur at both the student and curricula level.

Conclusion. The possession of business skills and knowledge play a critical role in helping the pharmacy profession advance within a dynamic health care environment. Recommendations were provided on key business content important for Doctor of Pharmacy students to learn and strategies to implement within a pharmacy program.

Keywords: business of health care, management, student pharmacists, curricular implementation

INTRODUCTION

Health care professions are experiencing unprecedented change amidst an evolving health care landscape. This change is motivated by a wide range of factors, including rapidly expanding information about health and medicines, increasingly complex and costly health care systems, the growing use of data analytics and technology to drive decision-making, ongoing shifts in legislative and regulatory requirements, and emerging models of care delivery and payment reform.1 Numerous calls have emerged for reform in health professions education and highlight ongoing concerns about the ability of current curricula to prepare students for the continual change of health and health care, particularly as it relates to the business of health care.2

Within pharmacy, there is increasing pressure to bring greater value to patient care, which requires improving health care quality while controlling costs.3 Scholars emphasize the importance of demonstrating value for pharmacy clinical services, optimizing medication use, and developing innovative models to deliver care and meet patients’ needs.4 Previous research has found that while business skills affect the everyday responsibilities of a pharmacist, pharmacists feel less confident in these skills than their practice foundation skills.5,7 Additionally, equipping pharmacy graduates with a fundamental business acumen will allow them to position themselves for a
variety of career opportunities and to advance the profession in an ever-evolving health care environment.\textsuperscript{2,8}

With the adoption of the Doctor of Pharmacy (PharmD) degree as the entry-level degree for pharmacists, the training emphasis has focused on preparing students as pharmacy clinicians. This emphasis has appeared to result in a diminished role for business topics in PharmD curricula.\textsuperscript{9} More recently, knowledge of business fundamentals has been emphasized by the Accreditation Council for Pharmaceutical Education (ACPE) and the Center for the Advancement of Pharmacy Education (CAPE). Based on information outlined in the most recent ACPE Standards and CAPE Educational Outcomes, knowledge of business management is expected of new pharmacy graduates.\textsuperscript{10,11} However, neither ACPE nor CAPE provide guidance on the specific business topics to be incorporated within PharmD curricula or the context in which these topics should be taught.

Previous available work in this area provides suggestions on business topics essential for pharmacy graduates.\textsuperscript{5,7,12-17} However, many of the topics identified are more general behavioral skills (eg, communication, teamwork) instead of specific business topics that will advantage graduates in a dynamic health care environment. To determine which and how business topics should be included within PharmD curricula, it is advantageous to engage pharmacist alumni currently working in the business sector. Alumni are uniquely positioned to provide real-world, practical knowledge about the depth, scope, and application of these skills. The purpose of this research was to explore pharmacist alumni perspectives on what topics and how the business of health care should be incorporated into pharmacy school training.

METHODS

This exploratory sequential mixed-methods study was conducted in two phases. Phase 1 involved focus groups with alumni to explore their perspectives on business of health care topics and experiences that PharmD students should learn as well as strategies to incorporate these things into the PharmD curriculum. Phase 2 consisted of a survey to school alumni maintained in our institution’s alumni database to seek broader input on business of health care topics most important for PharmD students to learn. The study was determined to be exempt from full review by the University of North Carolina Institutional Review Board.

In Phase 1, purposive sampling was used to identify alumni participants who could provide substantive feedback aligned with the needs of this study. Our institution’s associate dean for advancement assisted with identifying engaged alumni within various pharmacy fields. Ten of the invited alumni (34.5%) attended one of three focus groups over a two-month period. Each focus group was 60 minutes in length and conducted virtually via Zoom (Zoom Video Communications Inc). Participants included current and former members of the pharmaceutical industry, community pharmacy, and health care systems, each with over 20 years of experience. Participants within industry had current or previous roles as medical science liaisons or within research and development or medical affairs. Participants within health care systems either currently served or previously served as a director of pharmacy. The community pharmacy participant was a previous executive of chain drug pharmacies. Of the invited alumni, there were no respondents within managed care or entrepreneurship. Invited alumni who did not attend a focus group were provided the opportunity to respond to the focus group questions via email. The script used with participants in all three focus groups is displayed in Table 1. Additionally, probing questions were asked to provide participants with an opportunity to explain a statement further and/or provide examples.

Two faculty members conducted all focus groups. Interactions were video recorded with the participants’ consent, and comprehensive field notes were recorded for analysis purposes. One member of the research team used thematic coding to identify semantic themes within the focus group data. The semantic themes were then used to construct

Table 1. Script Used in Three Focus Groups to Prompt Discussion About Business of Health Care Topics That Should Be Included in the Doctor of Pharmacy Curriculum

<table>
<thead>
<tr>
<th>Question</th>
<th>Prompt</th>
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<tr>
<td>1. What GENERAL business of health care topics do you feel all pharmacy students should learn?</td>
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<tr>
<td>2. What ADVANCED topics do you feel students should learn if they want to specialize in the business of health care?</td>
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<tr>
<td>3. What TYPES OF ACTIVITIES do you think could help students learn these topics most effectively (eg, certain projects, presentations, internships, guest lecturers)?</td>
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<tr>
<td>4. In WHAT CONTEXTS do you think these topics and skills are best taught (eg, in the classroom, during an experiential rotation, during an internship)?</td>
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<tr>
<td>5. In what ways could we ASSESS student understanding of the business of health care?</td>
<td></td>
</tr>
<tr>
<td>6. What QUALIFICATIONS should we consider for those teaching business of health care topics to our students?</td>
<td></td>
</tr>
<tr>
<td>7. What are BARRIERS to implementing business in health care courses?</td>
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The summaries were reviewed and verified by the second researcher, who had helped conduct the focus groups. Any discrepancies were discussed and resolved between the two researchers.

In Phase 2, the focus group results were used to develop a survey aimed at seeking input on business of health care topics most important for PharmD students to learn from a broader sample of alumni. A total of eight questions were included in the survey. The first set of questions related to participant demographics. Participants were then asked to rank order a list of general business topics derived from the focus groups using a scale from one (most important) to 12 (least important). The survey data were analyzed using descriptive statistics in Microsoft Excel.

The survey was developed via Qualtrics (Qualtrics International Inc). A description of the business of health care coursework development process and link to the survey was included in the monthly University of North Carolina Eshelman School of Pharmacy alumni newsletter, which alumni receive via email. Alumni were provided with a three-week window to complete the survey.

RESULTS
Phase 1: Focus Group Results

During the Phase 1 focus groups, major themes and related subthemes emerged across the participants’ responses to each scripted question. A discussion of these themes and subthemes follows, segmented by question topic. A summary of the major themes is provided in Table 2.

Regarding general topics, participants indicated that their experience with recent PharmD graduates suggested that students generally lack business acumen and would benefit from practical topics such as developing mission, vision, and value statements, studying key performance indicators (ie, building, collecting data on, and analyzing key performance indicators) and working with effective engagement and communication strategies. To provide students with exposure to opportunities available within pharmacy, participants offered that required coursework for all students should provide an overview of options, pathways, and business opportunities for students. Participants remarked that providing students with a network can also help them learn more about specific areas. Another essential topic participants mentioned was understanding supply chain principles due to the continued expansion of health care systems, including topics about how to leverage group purchasing organizations and wholesalers. Relatedly, participants felt that understanding the payer system was essential, along with topics related to general operations (eg, inpatient, clinical, ambulatory, management, drug contracts, formulary management). Participants also suggested that students should understand the basics of the entire life cycle of drug research and development, from drug discovery through all phases of clinical trials, regulatory processes, and postmarket entrance and analysis.

Regarding advanced topics, participants indicated that additional coursework may be well suited for specialization in a curriculum (eg, health-system, community, industry). For example, topics such as the specialty drug market, drug policy development, engagement in advocacy and lobbying, and alternate sites of care are important in some settings. Advanced topics suggested as beneficial to all students wanting to specialize in the business of health care included entrepreneurship, strategies to communicate with the C-suite, strategic thinking, and business of health care in a global context. Advanced topics could also include more in-depth exploration and application of any general topic previously mentioned.

For helping students learn and apply the business of health care topics more effectively, participants recommended various activities, including guest lecturers, projects/capstones, developing a business plan/service, student presentations, working in teams, and case studies. Participants also felt that students should have the opportunity to practice presenting to a variety of stakeholders, such as employees, C-suite individuals, and supervisors. It was also suggested that activities be used to teach and promote student resilience, such as idea critiquing or needing to guide an initiative from idea to implementation. This would help students understand the role of critique in business and learn strategies for dealing with/overcoming rejection. Participants proposed that not all projects, case studies, or experiences have to be pharmacy related and encouraged the consideration of other disciplines for learning and applying skills. For example, one participant shared that he learned the concepts of writing a business plan while working in retail. Further, participants emphasized the value of debriefing, reflection and/or after-action reviews following the learning activity. Collaboration with other schools on a university campus (eg, school of business, school of public health) was proposed to enable learning in interdisciplinary teams and applying material across multiple topics.

Regarding the context in which these topics and skills are best taught, participants emphasized that they learned much of their business knowledge and skills through real-world experiences and encouraged inclusion of real-world experiences in the coursework. To build variety and capacity of experiences, participants stated that the experiences should not be limited to health care and/or can be built into the experiential program. Additionally, while participants stated that real-world experiences are critical, they also offered that foundational business knowledge and skill
techniques can be learned in the classroom setting, particularly with the use of simulations and cases. Similarly, they suggested that business concepts be integrated into other, nonbusiness courses in the curriculum as a means to reinforce the importance of business concepts in the provision of patient care. Participants also felt that social networking gatherings and other contexts that enable interaction between students and business professionals could help students gain exposure to different people and areas within business and learn different communication strategies.

For assessing knowledge on these topics, participants noted that in addition to traditional curriculum assessments (e.g., examinations, objective structured clinical examinations), it may be beneficial for students to be assessed using strategies common in the business world, such as midyear and end-of-year reviews. This would not
only provide students with feedback from the instructor but also teach students how to prepare for such a review, what to do during the review, how to receive feedback, and how to respond to comments provided during the review. Participants also emphasized that participation and class engagement should be an essential part of the assessment, as participation and engagement are important components of succeeding within the business world. Participants also commented that a summative assessment could also take the form of a team-based capstone that is presented to a specific audience (eg, C-suite–type executives).

Regarding the qualifications of those teaching business of health care topics, participants emphasized that instructors within the coursework should be currently employed or recently employed (within the past 10 years) within the business sector. Participants noted that this would provide credibility to the content being discussed and activities that the students engage in. It was also stated that it may be beneficial to bring in instructors outside of pharmacy, such as from the business school, to provide students with alternative perspectives.

Finally, participants commented on what they thought were barriers to implementing these topics in PharmD curricula. Based on previous engagement and experiences with students, some participants believed that PharmD students have historically had a lack of interest in “nontraditional” career pathways, although it was noted that this may be changing within the current health care environment. Relatedly, participants have observed a lack awareness by students about pathways outside of the residency and community route, which may contribute to minimal interest in this area. Further, from the curricular perspective, participants noted that courses with a business focus are beyond what is required for the PharmD degree, which would require the addition of content in the curriculum beyond what is viewed as necessary per ACPE requirements (ie, will faculty support making room for this in a PharmD program?). Some also questioned whether the pharmacy discipline has the capacity to implement business-related content in terms of experts available to teach and mentor the experiences fully.

Phase 2: Survey Results

Sixty-eight alumni completed the survey. As seen in Table 3, most survey participants graduated with a PharmD degree (n=39, 57.4%) between the years 2000 and 2009 (n=19, 27.9%). Participants most commonly also underwent residency training (n=13, 19.1%) and/or received a Master of Business Administration (n=9, 13.2%). The areas in which participants stated they spent the majority of their career were community (n=30, 44.1%) and industry (n=11, 16.2%).

Table 4 displays the ranking of general business topics considered most important for PharmD students to learn. Communication strategies, health care operations, and career options within pharmacy were most highly ranked by participants. The lowest-ranked topics included business in a global context, drug research and development lifecycle, and managerial accounting.

Additional subgroup analyses were also performed to determine the rankings from respondents who also held a master’s degree in business administration or health administration (n=12), respondents who spent the majority of
Table 4. General Business Topics Most Important for PharmD Students to Learn, Ranked From One (Most Important) to Twelve (Least Important)

<table>
<thead>
<tr>
<th>Business topic</th>
<th>Average ranking</th>
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<tbody>
<tr>
<td>Communication strategies</td>
<td>3.72</td>
</tr>
<tr>
<td>Health care operations</td>
<td>4.37</td>
</tr>
<tr>
<td>Career options within pharmacy</td>
<td>4.40</td>
</tr>
<tr>
<td>Health care payer system</td>
<td>4.75</td>
</tr>
<tr>
<td>Managing teams</td>
<td>4.81</td>
</tr>
<tr>
<td>Supply chain management</td>
<td>6.91</td>
</tr>
<tr>
<td>Organizational change</td>
<td>7.10</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>7.19</td>
</tr>
<tr>
<td>Managerial accounting</td>
<td>7.38</td>
</tr>
<tr>
<td>Drug research and development life cycle</td>
<td>8.00</td>
</tr>
<tr>
<td>Business in a global context</td>
<td>8.13</td>
</tr>
<tr>
<td>Othera</td>
<td>11.24</td>
</tr>
</tbody>
</table>

Abbreviations: PharmD=Doctor of Pharmacy.

* Other business topics included health and pharmaceutical economics; who pays for your medication; volume to value: quality care and improved outcomes; governmental and political processes; human resources; managing staff for excellence in workflow; strategies for community pharmacists to excel in challenging environments; biotech venture capital; leadership development/leadership as governance; the misfortune of micromanagement; playing to their strengths; disaster preparedness; and personal finance.

DISCUSSION

Business skills and knowledge play a critical role in the success of pharmacy within a dynamic health care environment. Most pharmacists believe that business skills affect their everyday responsibilities to a considerable extent.5 However, while pharmacists have self-rated their practice foundation skills as high, pharmacists have felt less confident in their managerial skills, indicating that there may be gaps in training.6,7

Since the profession adopted the Doctor of Pharmacy as the entry-level degree for pharmacists, emphasis on educational development has focused on clinical topics and preparing students for direct patient care roles. As that emphasis has increased, education on business principles has appeared to be diminished in PharmD curricula.9 Previous reports suggest that without didactic coursework specifically geared toward business knowledge, students’ perceived knowledge of business content is limited.18 With the release of the 2013 CAPE Educational Outcomes and the 2016 ACPE Standards, many of the learning objectives are tied into business skills, knowledge, and functions.10,11 However, there remains a paucity of literature on strategies to incorporate business principles into PharmD curricula.

The Standards produced by ACPE have inferred that pharmacy schools solicit feedback from alumni and preceptors on their curriculum, with previous studies in this area demonstrating the value in that practice.10,12,19 Existing research has also reported on the use of preceptors to provide the school with feedback on the perceived abilities of their graduates in several areas, including clinical skills, leadership, and pharmacy laws.20 Our research uses this concept through providing in-depth feedback and perspectives from pharmacist alumni on the incorporation of business principles into our PharmD curriculum. Our initial results provide clarity on important business of health care topics, the types of activities students should engage in to effectively learn these topics, the context in which these skills are best taught, ways to assess student understanding of these topics, qualifications to consider for those teaching these topics to our students, and potential barriers to overcome with implementation. Taken together, these findings provide guidance on how to reemphasize business principles within PharmD curricula.

Our findings reinforce and extend previous work in this area. A review of the business education literature outlined the types of business and management skills essential for future pharmacy managers.13 The 10 most frequently cited characteristics of effective management skills were all behavioral skills, including verbal communication, time management, decision-making, influence, team building, and managing conflict. These findings were similar to those...
found in a survey of advanced pharmacy practice experience (APPE) preceptors asking what preceptors perceive as essential skills for entry-level pharmacists. Of the nonclinical skills identified, communication and collaboration were the most frequently identified. In our work, communication strategies and working within teams were also rated highly, both in the focus group discussion and in the alumni survey. While these types of behavioral skills are incorporated within most PharmD curricula in myriad ways, these are more general topics rather than business principles that will advantage PharmD graduates in today’s health care environment.

More specifically related to business topics, Augustine and colleagues published findings from focus groups of preceptors on key business, management, and human resources skills needed by pharmacy graduates. The themes identified as most critical by preceptors included communication, decision-making and time management, business skills (eg, understanding business reports, vision and goal setting, budgeting), conflict resolution, leadership and professionalism, personnel management (eg, employee retention, employee motivation, teamwork), and computer software techniques (eg, sorting data, spreadsheet equations, pivot tables). These themes align well with the general business of health care topics identified for all PharmD students through our pharmacist alumni focus groups and the rankings through our alumni survey. In addition to those themes, our research also found that supply chain principles and health care operations were thought to be of high importance. Our work also highlights the importance of exposing students to opportunities within pharmacy outside of direct patient care roles and providing students with a network to help them learn more about specific areas. This may include the development of curricular pathways or tracks, which could expose students to the more advanced business of health care topics identified by our focus groups.

In addition to the identification and reinforcement of general and advanced business of health care topics important for PharmD students, our work extends previously published literature by exploring other areas important for the implementation of content into a curriculum. To help students learn the business topics most effectively, it was recommended to incorporate a variety of application activities, including capstones, business plans/services, presentations, and case studies, that are geared toward different stakeholders, such as employees, supervisors, and executives. While some of the foundational knowledge related to these topics can be learned in a classroom setting, our focus group participants emphasized that simulations and real-world experiences were the best contexts for teaching these topics. Traditional curriculum assessments (eg, examinations) may be appropriate for understanding student knowledge of foundational elements, but it was also recommended to incorporate assessments common in the business world. This may include debriefing, reflections, and simulations of midyear and end-of-year reviews. Participation and class engagement were also considered an essential part of assessment, as these are necessary for success within the business world.

As stated previously, business topics have been diminished within PharmD curricula. A suggested reason for this was that faculty and curricular leaders within schools of pharmacy may view this content as beyond what is required for the PharmD degree. It is essential that faculty are educated on not only the current use of business skills in everyday responsibilities of pharmacists but also on the necessity of this skill set to continue to advance the pharmacy profession in the current health care environment. Similarly, our focus group participants identified that students seem to have a historical lack of interest in this area. This may also be due to their lack of awareness of the utility of business principles postgraduation and of career pathways available outside of the residency and community route. Having instructors within the business coursework that are currently or recently employed within the business sector could provide credibility for students regarding the material being discussed. Incorporating instructors from outside of pharmacy could also build capacity and provide students with alternative perspectives.

This study has several limitations important to note. This evaluation was conducted at a single institution and there was a relatively small sample size. The alumni were also concentrated in select areas (eg, industry and health care systems for the focus groups, community for the survey), which lends itself to a less than optimally diverse pool of participants when seeking perspectives related to careers. While these limitations may constrain the generalizability of the findings, clear and consistent themes emerged across the focus groups, with components similar to those reported in previous literature. Additionally, the rank order format of the survey prevented a clear delineation between topics considered necessary for all PharmD graduates versus those that could be considered optional. It was therefore necessary for our institution to triangulate the data between the focus groups and survey results to determine those topics to include in a required course.

Regardless of these limitations, this work contributes to a gap in the literature concerning qualitative and quantitative evaluation of business of health care needs for PharmD graduates. More specifically, this study leveraged alumni perspectives and explored strategies on how to incorporate business principles into PharmD curricula. The results directly informed curricular design at our institution and are offered in hopes of helping other schools in their own curricular development.
The focus group and survey results from this work directly informed a required business of health care course implemented for second-year students in our PharmD program. Plans are also underway to develop an elective business of health care pathway for students interested in pursuing this area. The pathway will consist of the required business of health care course, a longitudinal seminar, and two additional elective courses. Information obtained from this study will be used in the course design for the elective pathway. Further research will be conducted to evaluate the implementation, initial results, and sustainability of the business of health care required course and pathway. Additionally, the profession of pharmacy has continued to expand opportunities available outside of those involving direct patient care. This work is a first step toward exploring those opportunities and will be further evaluated using other employers within the health care business sector.

CONCLUSION

Learning and applying principles related to the business of health care are important for PharmD graduates’ success in a dynamic health care environment. Business of health care topics important for all pharmacy students to learn were identified by alumni, who also identified topics important for students who want to specialize in the business of health care. Recommendations were also provided for areas necessary for curricular implementation. These findings have important implications for curricular development in PharmD programs. Future research is needed on the design, development, and assessment of pharmacy business courses and experiences.

REFERENCES
