Developing core competencies for pharmacy graduates: The Lebanese Experience

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Research article

Keywords: competencies, pharmacy, profession, students, curriculum

Posted Date: January 20th, 2020

DOI: <https://doi.org/10.21203/rs.2.21255/v1>

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Version of Record: A version of this preprint was published at Journal of Pharmacy Practice on October 21st, 2020. See the published version at <https://doi.org/10.1177/0897190020966195>.

Abstract

Objectives

Nowadays, new roles are emerging in the pharmacy profession, all increasingly focused on competencies and skills. Adopting competency-based educational designs prepares pharmacists for their societal role, ultimately leading to improvement of health care and patient safety. The Lebanese Order of Pharmacists (OPL, the official pharmacy association in Lebanon) took the initiative of developing a pharmacy competency framework with the ultimate goal of standardizing pharmacy education at all universities, and appointed a subcommittee within the scientific committee – the Academic Board – to achieve this task.

Methods

The work started using a primer developed by a group of academic instructors, who drafted the competencies for Lebanese pharmacists based on international reference documents from various parts of the world. The Academic board reviewed, streamlined and validated the suggested primer.

Results

Our work distributed competencies over seven axes: fundamental knowledge, professional practice, personal skills, supply of medications, safe and rational use of medications, pharmaceutical public health competencies, and organization and management competencies. These results are expected to homogenize basic pharmacy skills, improve the level of pharmacy graduates, and start a dialogue and a partnership between academic institutions, health care organizations and other pharmacy practice institutions, to address the training needs of the healthcare workforce.

Conclusion

The results of this project are a first step towards providing information on human resource planning and professional development of the pharmacy workforce, and pave the way for future studies to gather new evidence in this area. This initiative is expected to ensure high-quality, team-based delivery of care by pharmacists that is imperative for improving patient care.

Introduction

The pharmacy profession is constantly evolving with the emergence of leading edge specialties and roles. Current trends show that pharmacy and other health care professions are becoming more focused on skills and competencies (1–5), which is required by most educational certification bodies around the world (6, 7).

Adopting competency-based educational designs de-emphasizes time-based curricula, and prepares pharmacists for their societal role, ultimately leading to improvement of health care and patient safety (8, 9). According to the International Pharmaceutical Federation (FIP) and the World Health Organization (WHO), the mission of the pharmacist is to contribute to health improvement by counseling patients and helping them make the best use of their medications. In 1997, the WHO introduced the “Seven-star pharmacist” concept covering the different roles each pharmacist must perform: care-giver, decision-maker, communicator, manager, life-long-learner, teacher and leader (10). Two additional roles – researcher and entrepreneur – were introduced later, leading to the “Nine-star pharmacist” (11). The FIP requires the pharmacist to have skills in seven domains: fundamental knowledge,

professional practice, personal skills, supply of medications, safe and rational use of medications, pharmaceutical public health competencies as well as organizing and managing competencies. In fact, the Pharmacy Education Action Plan developed by the WHO, the UNESCO (United National Educational Scientific and Cultural Organization), and the FIP, is oriented towards identifying local needs and adapting educational programs to achieve competencies required to meet these needs (12).

In Lebanon, five universities teach pharmacy, two of them are francophone and adopt the European Credit Transfer System (ECTS) while three use the North American credit system (one applies the Canadian model and the other two, the American one). Whatever the system applied, pharmacy studies last 5 years and lead to a Bachelor of Science (BS) degree, while an additional year to obtain a Doctor of Pharmacy (PharmD) degree is optional except in one of the francophone universities where PharmD is mandatory. The Ministry of Education and Higher Education in Lebanon (MEHE) regulates the number of credits of the pharmacy curriculum a student must achieve to graduate, but not the content. Throughout his years of study, the student is also required to complete a non-consecutive 12-month internship which content is overviewed only by the university. Furthermore, based on personal communication with universities, we learned that they adapted their curricula to foreign sets of competencies to get accredited by foreign bodies, which does not necessarily correspond to the needs of Lebanon. Several professional aspects and courses are inadequately addressed and evaluated in some curricula, particularly those related to public health and transferable skills such as communication skills, analytical skills and critical thinking. Finally, the "colloquium" – which is the national licensure examination necessary to apply for a license to practice pharmacy – organized by the MEHE, evaluates only the knowledge of graduates regardless of other skills. Given this context, Lebanese universities are probably graduating pharmacists with discrepancies in skills, attitude and knowledge. To date, no regulatory body in Lebanon has made any effort to standardize pharmacy education or adapt it to local needs, despite labor market drivers suggesting that a competency-based approach is sustainable for developing the workforce around the world (1, 13).

To be allowed to practice in Lebanon, pharmacists must be registered at the Lebanese Order of Pharmacists (OPL) – the professional pharmacists' association in Lebanon. The OPL is working to become a leading organization by improving the profession, and promoting excellence in patient care and scientific development in Lebanon and the Middle East. In view of its stated mission, the OPL took the initiative to develop a pharmacy competency framework in collaboration with academic educators and institutional infrastructure to deliver the required competency-based education and training, with the ultimate goal of standardizing pharmacy education programs in Lebanon, so that graduates (BS or PharmD) have an identical or similar level.

The objective of this paper is to describe the OPL initiative that led to a set of core competencies adapted to the Lebanese context.

Methods

This paper outlines the essential steps in designing a competency-based pharmacy curriculum as suggested by the OPL and provides guidance for successfully organizing, developing, and implementing such curricula. Proposals will be based on literature review as well as the authors' experiences with implementing new curricula in the field of pharmacy and pharmaceutical sciences.

The Order of Pharmacists of Lebanon Initiative: Procedures and Steps

The OPL is the official partner of the MEHE to supervise pharmacy education and of the Ministry of Public Health (MOPH) to organize the practice of the profession. Within the OPL, an appointed scientific committee has the role of an executive authority. Its mission is to promote research and development of excellence in pharmacy practice through building knowledge, expertise and skills of the workforce to achieve optimal health outcomes. To tackle all common issues to the OPL and the academia, the scientific committee decided to create a subcommittee in association with academia representatives. This subcommittee termed the “Academic Board” had 13 members in total: two representatives from each faculty/school of pharmacy and three members appointed by the OPL scientific committee.

Designing the core competencies for pharmacy students

The work started with the use of a primer developed by a group of academic instructors, “the Lebanese Academic Pharmacists – Competencies Workgroup”, who had taken the personal initiative to draft the competencies for Lebanese pharmacists; the suggested primer was structured in several stages: A) Mapping competencies from the FIP/WHO (2012)(14), the American College of Pharmacy Education (ACPE, 2016)(6), National Association of Pharmacy Regulatory Authorities (NAPRA, 2014)(15), North American Pharmacist Licensure Examination (NAPLEX, 2015)(16) and the Center for the Advancement of Pharmacy Education (CAPE, 2013)(17); B) Drafting one document that included competencies and indicators/behaviors; and C) Validating the document by sending it to ten experts in pharmacy education and practice outside the workgroup to give their input and suggest additional modifications.

The OPL Academic board reviewed, streamlined and finally validated the suggested primer following the steps hereafter:

- All members read the suggested competencies framework and mapped it with the competencies they are using in their respective curricula;
- Missing competencies deemed essential were added to the document;
- Competencies considered of secondary importance were removed from the document;
- The members approved the final version of the document and the OPL was able to diffuse a Lebanese “Pharmacy Competencies Framework”.

Results

Our work shows that the competencies are distributed over seven axes: fundamental knowledge, professional practice, personal skills, supply of medications, safe and rational use of medications, pharmaceutical public health competencies, and organization and management competencies (full competencies are available in Appendix 1).

1. Fundamental knowledge:

The pharmacist knows and understands basics of fundamental science, patient care, pharmaceuticals and social, behavioral and administrative sciences.

2. Professional practice:

The pharmacist puts his professional skills into practice. He demonstrates awareness of the code of ethics and the Lebanese pharmacy law and acts accordingly. He acts as a team member and collaborates with other professionals in all aspects of practice. He also applies the principles of continuing professional development, including assessing his own learning needs and developing a plan to meet these needs.

3. Personal skills:

The pharmacist shows leadership abilities within a team, and recognizes the value of co-workers whether pharmacists or other health care professionals, and acts accordingly. He has the ability to take accurate, evidenced-based and timely decisions. The pharmacist also communicates effectively with patients, support staff, and other relevant third parties. He accepts self-assessment, learns from errors, and controls his behavior towards stress and work overload. The pharmacist also practices with innovation and entrepreneurship; he develops new ideas to improve quality or overcome barriers to enhance the profession, and uses information technology in his daily work.

4. Supply of medications:

The pharmacist knows the principles of manufacturing and compounding of medications; he performs efficiently various tasks in pharmaceutical plant and quality control units of products. The pharmacist also manages the supply chain; he ensures the quality, safety and integrity of products. He finally dispenses medications safely and accurately to the patient.

5. Safe and rational use of medications:

The pharmacist has consultation skills that allow him to gather information and discuss medication and disease issues with the patient. He also has counseling and advocacy skills: he counsels patients and acts to promote the best patient care. He monitors treatments and patient's progress and assesses therapeutic outcomes, while prioritizing medication safety and acting accordingly. The pharmacist also creates and maintains a working environment that promotes safety.

6. Pharmaceutical public health competencies:

The pharmacist engages in health education and promotion activities with the patient and the general population. He answers questions regarding medications' information and advises using appropriate strategies. He also applies knowledge, research skills and professional judgment to take right decisions.

7. Organization and management competencies:

The pharmacist demonstrates personal and professional organizational principles and management skills at work, in addition to those relevant to human and financial resources (budget and reimbursement). He also applies principles and skills relevant to quality assurance, and understands the principles of pharmaceutical product development.

Discussion

In this manuscript, we presented the core competencies suggested by the OPL to allow pharmacists graduate with skills adapted to the local needs. This initiative is expected to homogenize basic pharmacy skills, and improve the level of pharmacy graduates in Lebanon; pharmacists will deliver high-quality, team-based care that is imperative for improving patient care. In fact, competency-based education has been considered crucial for reforming learning systems and lining up curricula with the current health systems priorities, especially in resource-constrained settings (18). Academic institutions need to acknowledge this reality and exert efforts to change curriculum philosophy, rationale, structure and content.

These competencies can also serve as a starting point for a dialogue and a potential partnership between universities, healthcare organizations and other pharmacy practice institutions, to address the training requirements of the pharmacy workforce.

Academic and pharmacy practice institutions agree that pharmacists must have a thorough knowledge of pharmaceutical sciences in addition to scientific/clinical evidence that forms the basis of rational drug therapy. This knowledge is critical in making decisions that optimize patients' medication-related outcomes. However, much of what is learned by students in the classroom changes over time. Consequently, academia must foster among students, the skills needed to become self-directed lifelong learners, striving for personal and professional development, thus positioning themselves for continual and positive impact on health and health care. Pharmacy graduates need to be aware about their own roles, unique skillsets, and the profession's expectations so that they are better positioned to articulate what the profession can offer. Preparing students for the experiences of real-world health care delivery permeate conversations about curricular change, as quality accreditors promote curriculum design (6, 19, 20).

Collaboration, communication, critical thinking, and problem-solving are common in interprofessional care and education models and have been emphasized as important competencies for many years. Schools and faculty need to create engaged and active learning experiences (in the classroom and the practice setting) that emphasize initiative, innovation, critical thinking, and adaptability so that students are mindful of the importance of these skills and are assessed accordingly throughout their education and training. University teachers' consideration of the most suitable range of influence for a student, will facilitate clarification of the outcome as accountability to the self, team, patients or the broader health system. Consequently, it is required to develop teaching and assessment activities based on this model.

Conclusion

One can rely on the results of this study in order to create/develop pertinent programs aiming at targeting the skill needs of health workers in Lebanon. Adapting those results that are shaped for the local needs is more suitable than adapting existing international educational standards from resource-rich settings that may be incompatible with the actual needs of Lebanon. In conclusion, the results of this project are a first step towards providing

information on human resource planning and professional development of the pharmacy workforce, and pave the way for future studies to gather new evidence in this area.

Declarations

Ethics approval and consent to participate

An ethical approval was need for this paper since no participants were involved.

Consent for publication: not applicable.

Availability of data and materials: The authors do not have the right to share any data information as per their institutions policies.

Competing interests: The authors have no conflicts of interest to disclose.

Funding: None.

Authors' contributions: SO and SH conceived and designed the survey. CH and SH were involved in the statistical analysis and data interpretation. RZ and RMK wrote the manuscript. RH, HS and NK reviewed the manuscript. All authors read the manuscript, critically revised it for intellectual content, and approved the final version.

Acknowledgments: Members of the Academic Board of the Lebanese Order of Pharmacists: Georges Sili, Marianne Abi Fadel, Marlène Abou Jaoude, Soumana Chamoun, Roy Kanbar, Samar Rachidi, Sanaa Awada, Abdallah Lakani, Lama Soubra, May Saab, Mohamad Rahal, Michelle Cherfan, Etwal Bou Raad.

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Supplementary Files

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- [Appendix1PharmacyCompetencies.pdf](#)