

RESEARCH ARTICLE

The Lebanese experience for early career development: Bridging the gap to reach the International Pharmaceutical Federation (FIP) Global Competency Framework

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Keywords

Early career training
FIP Global Competency Framework
Lebanon
Pharmacy education

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Abstract

Introduction: Currently, there is no official national competency framework for pharmacy education or early career development programs in Lebanon. In 2017, the Order of Pharmacists of Lebanon attempted to fill that gap by developing and validating a framework using the FIP Global Competency Framework version 1 among others. **Methods:** Since this framework has not been implemented by the Lebanese educational bodies, it was deemed necessary to adapt it further, adding innovative aspects according to the recently published FIP Global Competency Framework version 2. This study identified recommendations to ways of improving pharmacy education. **Results:** There are missing barriers, which pose major challenges to the implementation of early career training in pharmacy schools in Lebanon. The implementation of these recommendations would produce practice-ready pharmacists with homogeneous competencies. **Conclusion:** A critical analysis of the contextual factors affecting the success of early-career training would help set expected outcomes to ensure best fit for society.

Introduction

The educational system in Lebanon

Pharmacy education in Lebanon is a unique mosaic with the diversity of programs, teaching languages, and affiliations of the five available schools of pharmacy. Five schools/faculties certified by the Lebanese Ministry of Education and Higher Education (MEHE) offer a pharmacy degree with different curriculum. The only common element is that

graduates from private schools/faculties and abroad would sit for a national evaluation exam termed "Colloquium" that allows applying for a license to practice, while the public university graduates are exempted. After obtaining the license to practice from the Ministry of Public Health (MOPH), graduate students should then register with the Lebanese Order of Pharmacists (OPL), which is the official Pharmacists' Association in Lebanon in charge of all registered pharmacists.

In the absence of a national accreditation system and a national framework for pharmacy education in Lebanon (Hajj *et al.*, 2021), each university developed its curriculum based on the competency framework of a selected foreign accreditation body (Bruno, 2011; Boyle & Myford, 2013). Hence, universities following the French system are working on their accreditation with two French bodies, the Conférence Internationale des Doyens des facultés de Pharmacie d'Expression Française (CIDPHARMEF) and the Haut Conseil d'Évaluation de la Recherche et de l'Enseignement Supérieur (HCERES) (Université Saint-Joseph, 2018; Université Libanaise, 2022). Regarding the three English-speaking universities, one is accredited by the American College for Pharmacy Education (ACPE) (Lebanese American University (LAU)- School of Pharmacy, 2022); the second one is certified by the ACPE (Lebanese International University, 2021), and the third one is accredited by the Canadian Council for Accreditation of Pharmacy Programs (CAPP) (Beirut Arab University, 2020). Nevertheless, a national strategy to homogenise standards would improve the level of education and adapt it more to the local environment, thus, improving the health services offered by pharmacists to patients in Lebanon.. Nevertheless, a national strategy to homogenise standards would improve the level of education and adapt it more to the local environment, thus, improving the health services offered by pharmacists to patients in Lebanon.

Methods

Current tools and frameworks

Given the previously stated discrepancies and heterogeneity in curricula, the Order of Pharmacists of Lebanon (OPL) took the initiative in 2017 to develop a pharmacy core competency framework. It consisted of seven domains, distributed among 35 competencies and 297 behaviours: fundamental knowledge (four competencies, 30 behaviours), professional practice (six competencies, 33 behaviours), personal skills (seven competencies, 56 behaviours), medicines supply (three competencies, 42 behaviours), safe and rational use of medicines (five competencies, 47 behaviours), pharmaceutical public health (four competencies, 44 behaviours), and organisation and management (six competencies, 45 behaviours) (Hajj *et al.*, 2021).

The suggested framework was based on the Global Competency Framework Version 1 (GbCF1) developed by the International Pharmaceutical Federation (FIP) in 2012 and other frameworks (Medina *et al.*, 2013),

which was adapted into the Lebanese context (Hajj *et al.*, 2021). The validation study of the competency framework was recently published, and it showed that the developed framework is structurally valid and reliable (Sacre *et al.*, 2020a). It also showed that pharmacists in Lebanon had major gaps upon graduation in the fundamental knowledge and medication supply (Zeenny *et al.*, 2021a). However, the framework suggested by the OPL has not been implemented by educational institutions in Lebanon due to political turmoil. Moreover, with the recent publication of the FIP Global Competency Framework Version 2 (GbCF2) (International Pharmaceutical Federation, 2020), it was deemed necessary to adapt the framework further to enhance the minimum required competencies of pharmacists (Bajis *et al.*, 2016) for optimal practice in Lebanon, including innovative aspects, such as emergency preparedness and advanced digital literacy.

National/local strategic priorities and policies on early career development

To date, the Lebanese authorities do not have a comprehensive strategy regarding pharmacy education, specialisation into pharmaceutical areas, or early career development programmes. Pharmacy curricula in all five pharmacy schools/faculties do not prepare graduates for a specific practice after graduation. All programmes focus on graduating an omni-practising pharmacist, whether in the community, hospital or other settings, with no targeted field of work. Thus, graduating pharmacists with a Bachelor of Science degree (5-year programme, as required by Lebanese regulations) can work directly with no additional training beyond graduation, provided they completed a 12-month experiential education in any pharmaceutical institution.

Although all schools/faculties offer a Doctor of Pharmacy degree (Pharm.D.), the minimum required is the Bachelor of Science in Pharmacy. The Lebanese authorities do not recommend any specific credentials for pharmacy positions, except for one speciality that requires additional training, i.e. clinical biology, the only speciality recognised by the Ministry of Public Health (MOPH) (Hallit *et al.*, 2019b). All other pharmacy specialities/ advanced practices are considered alike. Pharmacists with advanced credentials are only valued in some private sector institutions, particularly academia and teaching hospitals. Moreover, since universities develop their core competency framework based on the requirements of international accreditation bodies, pharmacy graduates might not have the competencies; that match the Lebanese market needs (Bruno, 2011, Boyle & Myford, 2013).

Regarding clinical pharmacy, all the schools/faculties that are accredited by external agencies endeavour to develop the clinical skills of pharmacy graduates, particularly during senior years. Furthermore, Lebanon currently offers three pharmacy residency programs (American University of Beirut Medical Center (AUBMC), 2019, Université Saint-Joseph, 2021), two of which are accredited by the American Society of Health-System Pharmacists, known as postgraduate Year 1, beyond the sixth year (American University of Beirut Medical Center (AUBMC), 2019). There is no law that mandates the presence of a clinical pharmacist in any institution, except for a requirement among hospital accreditation standards, which is delaying the implementation of clinical pharmacy in practice. Pharmacists who take up this specialisation path do it on a voluntary basis, while available clinical positions are relatively rare and depend on the willingness of hospitals to invest in such practice fields.

In the meantime, it is well known that policies related to early career development should clearly define training sites, learning outcomes, expectations, and competencies (Sacre *et al.*, 2020a). Consequently, an early-career training program was recommended by the OPL in 2017, based on market needs assessment (Sacre *et al.*, 2020b), suggesting additional homogenised training during the first two years after graduation for all intended fields of work, including community practice. The suggested early-career development competencies were termed “postgraduate training”. This suggestion is still waiting to be approved by the MOPH and MEHE.

Expected impact and barriers

The implementation of early-career training in Lebanon will help create a systemic and sustainable change in the organisation of the pharmacy profession. It will also help in the implementation of a new version of the global competencies framework. It will allow the OPL and the Ministry of Public health to account for their performance and to measure the impact of this contribution on patients. Evidence has shown worldwide the difference it makes to implement early-career training for pharmacists and its long-term benefits for the pharmacists, health stakeholders, and the community (Fleming and Spark, 2011; Kennedy & Massey, 2019; Hoppe *et al.*, 2020; Al-Haqan *et al.*, 2021). This programme should be looked at as an influential contributor to the community’s well-being (Local Government Improvement and Development, 2011; Institute for Healthcare Improvement, 2021), complementing other programs such as advanced and speciality

training and continuing professional development. All these systems, put together, will provide more tools and knowledge to empower the pharmacy workforce to deliver high-quality services to the patients, thus improving the healthcare system in the country (Nursing Times, 2013; Clarke *et al.*, 2019).

Needed steps to implement early career training

For the early career training to be implemented in Lebanon, contextual challenges such as political, technical, social, environmental and legal issues ought to be considered. In this study, the PESTEL model was preferred as it portrays several local factors that affect the success of early-career training directly or indirectly (Perera, 2017). Table I displays the barriers to its enactment and the steps needed for its implementation in Lebanon. Such a framework would identify gaps in education, training, and work experience, thus providing a tool to match curricula objectives with expected outcomes that best fit the local market needs (Sacre *et al.*, 2020c).






Due to the growing number of non-specialised graduates since 2004 and the lack of career guidance, unemployment rates among pharmacists have been on the rise. Although medical representative job positions in pharmaceutical companies have been restricted to pharmacists by a parliamentary law amendment in 2010 (Law 367, Article 73) (Order of Pharmacists of Lebanon (OPL)), the pharmacy situation is worsening due to the current socio-economic and sanitary crisis (Hajj *et al.*, 2021). Consequently, early career training cannot be solely adopted, even as part of the competency framework; it should be one of the pillars of a national pharmaceutical strategy.

Requirement for a national strategy

There is a need for a comprehensive strategic plan, including a system to curb the number of non-specialised pharmacy graduates, in addition to early-career training and guidance on practices beyond community practice, following the market needs. Implementing the optimised national competency framework and early-career training would then be crucial to produce practice-ready pharmacists who share homogeneous competencies by speciality area, as is seen in developed countries. Educational institutions would also adapt their degrees and course offering to the suggested strategy, while institutions involved in continuing education would further optimise their activities to provide professional development.

Table I: Contextual challenges, barriers and needs to implement early career training in Lebanon

Challenges	What is missing? What are the barriers? 	What is needed? How to move forward? 
	<ul style="list-style-type: none"> • Lack of policies to regulate the number of pharmacy graduates and early career programs based on market needs: this is related to competing interests of pharmacy schools/faculties for having an unlimited number of students • Lack of geopolitical stability in the country. • Lack of political continuity within ministries and professional organizations. • Lack of a competency-based exam for licensure of pharmacy. 	<ul style="list-style-type: none"> • Decision-makers and all stakeholders (faculties/schools of pharmacy, the MEHE, the MOPH, the OPL, and market-related stakeholders, including pharmaceutical institutions (community pharmacy owners and hospitals' administrators), companies, industries, and related organizations) are to implement a national early career competency framework • A comprehensive national strategy and detailed policies regarding pharmacy education, specialization in pharmaceutical areas, and early career development programs. • The presence of associations, such as INSPECT-LB, that are actively working and pushing forward the research in pharmacy practice and education, including competency frameworks validation and application.
	<ul style="list-style-type: none"> • High numbers of pharmacy graduates per year, which increases supply and adds to the unemployment rates. • Lack of policies to define competencies based on market needs. • Lack of career guidance based on an economic perspective • High unemployment rates among pharmacists due to lack of work opportunities • Lack of resources at the MEHE to dedicate or assign work to invest in pharmacy education and early career planning • Competing financial interests of private universities to agree on a unified pharmacy education framework due to different curricula. • Lack of funding and resources due to the severe economic and financial crisis, reflecting on pharmacists and the general population, with unpredictable future. • Due to the declining economic situation in Lebanon, increased prices (removal of subsidization), and a severe shortage of some medications, in addition to some substandard and smuggled preparations (Date: 2021). • The perception of pharmacists as partners in crime by patients, leading to a trust issue and potential consequences on patient health (Date: 2021). 	<ul style="list-style-type: none"> • Postgraduate training to reduce the number of non-specialized pharmacists (better salaries for specialized pharmacists). • National competency frameworks and early-career training to produce practice-ready pharmacists who share homogeneous competencies by speciality area. • A platform to rationalise medication use and reduce pharmaceutical expenditure, for instance, the Lebanese Advanced Patient Profile and Medication Therapy Management that was put on hold for political reasons. • The development and implementation of a national medication strategy, considering the severe crisis, while securing access to efficient and safe medications and restoring the trust between patients and pharmacists. • Emphasising the leading role played by pharmacists during the COVID-19 pandemic and the expanded functions during the Beirut explosion (August 4, 2020). Building on this role to restore the trust between patients and pharmacists; this is expected to improve the economic situation of pharmacists.
	<ul style="list-style-type: none"> • Saturation with community pharmacists and medical representatives due to lack of specialisation leading to social degradation of pharmacists. • High emigration rates due to increased unemployment among pharmacists. • The detrimental effect of the current Lebanese crisis on pharmacists' mental and social well-being (e.g., burnout, lower empathy, depression). 	<ul style="list-style-type: none"> • Postgraduate training to raise the level of the profession and improve readiness to practice in different fields. • Postgraduate training to reduce the potential errors resulting from lack of exposure in any area of pharmacy practice. • Planning to improve the mental and social well-being of pharmacists, thus optimising practice and decreasing emigration.

Challenges	What is missing? What are the barriers? 	What is needed? How to move forward? 
	<ul style="list-style-type: none"> No reliable pharmacy intelligence database, which makes human resources planning difficult Lack of implementation of digital health databases (patient profile, MTM, and others) for better early career training Slow internet connection across the country and lack of fiber optics except in major cities. 	<ul style="list-style-type: none"> Restructuring pharmacy intelligence database, with regular updates by professional authorities. Developing the Lebanese Advanced Patient Profile and MTM platform to improve pharmacy services in the community and optimize early career training. Updating available continuing education (CE) platforms and learning management systems regularly. Assessing regularly the digital literacy of Lebanese pharmacists and suggesting professional development solutions accordingly. Tailoring CE according to specialities for a better professional development Dedicating special internet bundles to pharmacy students and graduates.
	<ul style="list-style-type: none"> Lack of fuel due to the current crisis, which makes onsite education and training hard. Lack of training sites in the country for the number of pharmacy students. Lack of environmental managerial aspect in Lebanese laws and regulations, with a total absence of pharmaceutical waste management rules. 	<ul style="list-style-type: none"> Encouraging web-based courses for early-career training during the COVID-19 pandemic. Implementing and promoting the Green Pharmacy concept in the country, thus creating a new field of expertise for pharmacy graduates.
	<ul style="list-style-type: none"> No comprehensive national strategy regarding pharmacy education, specialization in different areas, or early career development programs. The clinical pharmacy law is still pending in the parliament since 2012. Many regulations suggested by the OPL were delayed by national authorities (the parliament, the MOPH, and the MEHE) 	<p>Enacting laws and regulations to implement a national educational framework for pharmacy, including:</p> <ul style="list-style-type: none"> Undergraduate accreditation standards to guarantee optimal pharmacy education and undergraduate training. Requiring PharmD as the minimum entry-level to improve the level, minimize unemployment, and create the first step toward specialization. Early career training to produce practice-ready professionals through appropriate postgraduate experiential programs. Clinical pharmacy implementation. Postgraduate training and specialization according to the market needs.

Key stakeholder

Stakeholders to be potentially involved in implementing the early career training, as part of the GbCF (1 and 2), include faculties/schools of pharmacy, the MEHE, the MOPH, the OPL, and market-related stakeholders who receive and mentor trainees (owners of community pharmacies, and administrators of hospital, companies, industries, and related organisations). Appropriate implementation of a more comprehensive national strategy would require further collaborative work between national partners and international organisations, including the accreditation bodies of the respective universities.

Results

Ongoing projects and future steps

The previously validated core competencies framework in Lebanon focuses on general competencies, while the suggested postgraduate training links it to practice and activities. Further improvement of this tool would help pharmacists advance their careers while fostering their professional development and paving the way for advanced practice (FIP, 2019; FIP, 2020), thus acknowledging the importance of expanding the type of services pharmacists may provide to their patients as suggested by the GbCF2. In that context, several research projects and development plans have been

conducted or are currently ongoing to have a comprehensive strategy and expand early-career training in Lebanon. These projects highlighted some gaps related to 1) Pharmaceutical public health; 2)

Pharmaceutical care; 3) Organisation and management; 4) Professional/personal development- Continuing Professional Development (Table II).

Table II: Global Competency Framework – Version 2 (GbCF2) - Implementation in Lebanon and room for improvement (International Pharmaceutical Federation (FIP), 2020)

Competencies as defined by the GbCF2	Existing programmes	Ongoing/ ready-to-implement project
1. Pharmaceutical Public Health		
1.1. Emergency response	Hospital and community pharmacists readiness to fight COVID-19 in Lebanon (Zeenny <i>et al.</i> , 2020; Zeenny <i>et al.</i> , 2021b)	
1.2. Health promotion		Public health competencies and education in Lebanon (ongoing)
1.3. Medicines information and advice	- Patients' Perceptions Regarding Pharmacists' Healthcare Services (Tawil <i>et al.</i> , 2020). - Societal perspectives of community pharmacy in Lebanon (Iskandar <i>et al.</i> , 2017)	- Medical promotion, patient pressure, social media, physician knowledge, and antimicrobials prescription (ongoing).
2. Pharmaceutical Care		
2.1. Assessment of medicines	Good pharmacy practice assessment among community pharmacies in Lebanon (Hallit <i>et al.</i> , 2019a; Badro <i>et al.</i> , 2020)	
2.2. Compounding medicines	Good pharmacy practice assessment among community pharmacies in Lebanon (Hallit <i>et al.</i> , 2019a; Badro <i>et al.</i> , 2020)	
2.3. Dispensing	Prescription and dispensing guidelines in Lebanon (Hajj <i>et al.</i> , 2020)	
2.4. Medicines	- Good pharmacy practice assessment among community pharmacies in Lebanon (Hallit <i>et al.</i> , 2019a; Badro <i>et al.</i> , 2020)	- Medical promotion, patient pressure, social media, physician knowledge, and antimicrobials prescription (ongoing)
2.5. Monitor medicines therapy	- Knowledge of and readiness for medication therapy management among community pharmacists in Lebanon (Domiaty <i>et al.</i> , 2018) - Good pharmacy practice assessment among community pharmacies in Lebanon (Hallit <i>et al.</i> , 2019a; Badro <i>et al.</i> , 2020)	
2.6. Patient consultation and diagnosis	Good pharmacy practice assessment among community pharmacies in Lebanon (Hallit <i>et al.</i> , 2019a; Badro <i>et al.</i> , 2020)	
3. Organization and Management		
3.1. Budget and reimbursement	- Upgrading Pharmacy Education to Produce Practice-Ready Pharmacists in Lebanon (Sacre <i>et al.</i> , 2020b).	- Advanced pharmacy competencies assessment in Lebanon (ongoing)
3.2. Human resources management	- Upgrading Pharmacy Education to Produce Practice-Ready Pharmacists in Lebanon (Sacre <i>et al.</i> , 2020b).	- Advanced pharmacy competencies assessment in Lebanon (ongoing)
3.3. Improvement of service	- Upgrading Pharmacy Education to Produce Practice-Ready Pharmacists in Lebanon (Sacre <i>et al.</i> , 2020b).	- Advanced pharmacy competencies assessment in Lebanon (ongoing)
3.4. Procurement	- Upgrading Pharmacy Education to Produce Practice-Ready Pharmacists in Lebanon (Sacre <i>et al.</i> , 2020b).	- Advanced pharmacy competencies assessment in Lebanon (ongoing)
3.5. Supply chain management	- Upgrading Pharmacy Education to Produce Practice-Ready Pharmacists in Lebanon (Sacre <i>et al.</i> , 2020b).	- Advanced pharmacy competencies assessment in Lebanon (ongoing)
3.6. Workplace management	- Upgrading Pharmacy Education to Produce Practice-Ready Pharmacists in Lebanon (Sacre <i>et al.</i> , 2020b).	- Advanced pharmacy competencies assessment in Lebanon (ongoing)
4. Professional/Personal Development		
4.1. Communication skills	Empathy among community pharmacists in Lebanon (Hobeika <i>et al.</i> , 2020)	

Competencies as defined by the GbCF2	Existing programmes	Ongoing/ ready-to-implement project
4.2. Continuing Professional Development (CPD)	- Mandatory continuing education (since January 2014) (Hallit <i>et al.</i> , 2019b) -Attitudes of Lebanese pharmacists towards online and live continuing education sessions (Sacre <i>et al.</i> , 2019)	
4.3. Digital literacy	-Attitudes of Lebanese pharmacists towards online and live continuing education sessions (Sacre <i>et al.</i> , 2019) -Lebanese pharmacists' confidence and self-perceptions of computer literacy and online education (Sacre <i>et al.</i> , 2019; Zeenny <i>et al.</i> , 2021a)	
4.4. Interprofessional collaboration	-Implementation and evaluation of interprofessional education programs in Lebanon (Zeeni <i>et al.</i> , 2016; Farra <i>et al.</i> , 2018; Hajj <i>et al.</i> , 2019)	
4.5. Leadership and self-regulation		- Gaps in leadership, ethics, and entrepreneurship among healthcare professionals in Lebanon (ongoing)
4.6. Legal and regulatory practice	- Regulations being suggested by pharmaceutical authorities	
4.7. Professional and ethical practice		- Gaps in leadership, ethics, and entrepreneurship among healthcare professionals in Lebanon (ongoing)
4.8. Quality assurance and research in the workplace		- Quality in Lebanese higher education institutions (ongoing) - Role of research in improving teaching skills (ongoing)

Discussion

This manuscript could identify the absence of clear strategies in Lebanon regarding pharmacy, in general, and early career training in particular. Measures are needed to bridge the gap between Lebanon's current situation and best pharmaceutical practices, an obligatory path being the GbCF to be implemented. Teams from the OPL had collaborated with the National Institute of Public Health, Clinical Epidemiology, and Toxicology (INSPECT-LB; a non-profit, independent research group of multidisciplinary researchers and academics in Lebanon) and worked on strategies to reform pharmacy in Lebanon; nevertheless, these programs remain unused for the time being. These workgroups had suggested a core competency framework for graduates, based on the FIP GbCF1 (Sacre *et al.*, 2020a), in addition to postgraduate core training and further advanced training before pharmacists can join the workforce (Sacre *et al.*, 2020b). However, several political, economic, social, technical, environmental, and legal barriers hindered the implementation of these different programs. Furthermore, with the FIP continuously issuing new core competencies (GbCF2), it would be advisable that relevant authorities update, validate, and implement these documents (universities, OPL, MEHE, and MOPH) to further optimise pharmacist competencies and contemporise pharmacy practice.

Pharmaceutical and educational institutions should train and mentor early career pharmacists through a

structured plan. Other complementary existing programmes, such as the accreditation of pharmacy curriculum, and recognition of pharmaceutical specialities, should also be implemented. A structured and well-conducted early career training is expected to produce practice-ready pharmacists and improve pharmacy practice. Irrespective of the complex challenges the profession may be facing, a pharmacist ready to work in a challenging environment would excel in any situation. Training pharmacists after graduation would also extend to continuing education related to practice, certification of young clinical preceptors (Zeitoun *et al.*, 2020), and professional development to better apply good pharmacy practice standards in all pharmacy fields (Hallit *et al.*, 2019a; Badro *et al.*, 2020). The suggested training (under or postgraduate) would be optimised by applying contemporary pharmacy concepts, such as digitising patient profiles and drug safety reports, using digital health applications and updating the pharmacists' database using the right platforms.

Furthermore, since the FIP Development Goals also involve research, a national research strategy involving the mentoring of new researchers and the validation of evaluation instruments is required in the medium term. Early-career pharmaceutical scientists would be mentored within educational and/or research institutions, as suggested in the accreditation of pharmacy programs previously described, in tight collaboration with the OPL (Order of Pharmacists of Lebanon, 2018).

To reach this reform, a comprehensive national strategy is necessary, including early career training as an integral part of a competency framework adoption; lobbying with other stakeholders (including the educational institutions, pharmaceutical institutions, other healthcare professionals, ministries, and non-governmental organisations) is warranted to change the culture and speed the decision-making. Concomitantly, relevant norms and regulations should be revised and reinforced after approval. These procedures are expected to improve both the situation of pharmacists and patient health.

Conclusion

In conclusion, the ultimate goal would be to improve the pharmacy workforce and education at the national level, reaching international standards; early career training would be part of the national strategy to be implemented. The ongoing projects are expected to guide strategic planning so that Lebanese pharmacists regain their place as pillars among healthcare professionals; however, strategies validation and implementation would need authorities' willingness and stakeholders' involvement.

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