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Why we should create uniform pharmacy education requirements across different countries: a review of current requirements and the need for global regulator input.

Abstract

Introduction: Currently, there is no globally agreed standard for pharmacist undergraduate education, Continuing Professional Development (CPD) or Continuing Education (CE), although global frameworks are available. Supporting uniformity globally from an undergraduate degree to ongoing lifelong learning will be reviewed. The continuing need for regulator input will also be discussed.

Commentary: Across the globe, multiple degree pathways exist to enter the pharmacist profession. These include a BSc, a Masters level degree through to an increasing number of PharmD degrees. Various models exist for lifelong learning (CPD/CE) requirements. Whilst frameworks exist for a global model, there is limited evidence of progress.

Implications: This is another call for pharmacy regulators globally to work together to identify global standards, with clear measurable outcomes, to share best practice, and provide consistent patient care globally.

Keywords: Pharmacy; Continuing professional development; Continuing education; Global; Lifelong learning.

Conflict of interest

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Introduction

While undergraduate pharmacy education is regulated in individual countries, there is limited uniformity or portability of degrees between countries. In addition, post-licensure or qualification, a significant variance is seen in Continuing Professional Development (CPD) and Continuing Education (CE) requirements. While it is hard to say that pharmacists in those countries without mandatory lifelong learning (CPD/CE) requirements in place don't maintain skills and performance, a quality assurance process allows the public to have confidence in their healthcare providers. In countries without mandatory systems in place, there is no quality assurance process, creating a limited mindset to keep up to date. Pharmacists are often still motivated to learn and continue their education, but this may be varied. While standards exist at undergraduate level, these should be shared and collated globally, along with standards for lifelong learning to support other countries. This will enable learning from each other, and sharing best practice and resources, such as guidance documents or frameworks for learning standards and expected skills and attributes. This paper will look at the limitations of current practices, and the need for uniformity, and sharing of resources globally, both at undergraduate and postgraduate level.

Globalization of pharmacy education, to create a culture of learning from each other to ensure enhanced patient care, is ongoing.¹ Alsharif² outlines several of the organizations currently developing globalization strategies for pharmacy education. These include American Association of Colleges of Pharmacy, International Pharmaceutical Federation (FIP), and the World Health Organization (WHO). Internationally, the 2017 FIP global report, representing 74 countries (76% of the world's population) identified there were 2,824,984 actively practicing pharmacists.³ In the FIP 2017 global report, the median density of pharmacists per 10,000 of the population was 5.09. There are higher densities of pharmacists for the population in countries with increased income. In the United Kingdom and the United States of America, for example, the number of Schools of Pharmacy are growing, thus creating more future pharmacists. Despite the number of pharmacists, there is still a global shortage of pharmacists to provide patient care,¹ with the WHO United Nations Educational, Scientific and Cultural Organization (UNESCO) FIP Pharmacy education taskforce⁴ in 2008 noting a current shortage of over 4 million health care workers globally, including pharmacists. Therefore, there is a need to address education provision globally to help fill this gap. Currently, pharmacy degrees typically are not portable

to other countries, as standards cannot be guaranteed, which limits the free movement of qualified pharmacists.

There is a need for pharmacists to utilize their skills to the best ability. Internationally pharmacists are underutilized in patient care and public health, and could be used more for clinical management or diagnosis.⁵ With increased movement of the global population, including pharmacists, lifelong learning for pharmacists is vital to ensure patients receive a consistent level of clinical care wherever they practice. This could also serve as the foundation to solve pharmacist under-utilization and advancement of medication management services.

Development of consistent undergraduate and CPD/CE models globally, and sharing of resources available in each country will support the understanding of variances and create more uniformity within the profession. Regulator input is essential for this to happen.

Commentary

Looking at different countries individually to understand their undergraduate education and training and lifelong learning expectations, it became apparent that some have greater published information than others. Nevertheless, both undergraduate and postgraduate pharmacy education differ greatly, often dependent on the number of pharmacists and professional regulation, along with availability of funds. Roles of pharmacists are also widely variable. Uniformity of opportunities for undergraduate and ongoing learning will allow patient care at the highest standard, through globally agreed standards. Variety in pharmacy degrees and the need for uniformity. Starting at undergraduate level, degrees globally should be uniform, to reduce public confusion, and support portability of degrees.

Across the globe, multiple degree pathways exist that lead to pharmacist qualification. These include a BSc, Masters level degree or an increasing number of PharmD degrees. Some countries including India, Bangladesh and China provide a variety of qualifications from the range above, whereas the PharmD is the graduate degree in The United States of America.

Table A.1 summarizes the pharmacy degrees available globally, as outlined in research papers, with time required for degree completion. The table excludes any training time required before registration or licensure, such as pre-registration training placement, and also does not represent all information regarding pre-requisite requirements. Pre-requisite requirements vary, for example 2 years of prior study are required in Lebanon and Yemen.

When reviewing the literature to establish any differences in outcomes from the various degrees, PharmD degrees offered in Canada⁶ and Bangladesh⁷ show more emphasis on clinical pharmacy, and patient facing experiences throughout the course. In Thailand,⁸ a 5-year BPharm was extended to a 6-year PharmD to ensure competency in healthcare systems. As an example, in a bid to support global harmonization, and consistency of experience, the Accreditation Council for Pharmacy Education (ACPE) quality assures all PharmD programs in the United States of America, as well as professional degree certification globally. This, however, is not the case in other countries. It is also seen that, despite variety in degrees in countries, pharmacists can still practice if they hold one of these degrees. India, for example, allows an individual to practice as a pharmacist with only a diploma⁹ and completion of DPharm, BPharm and PharmD only being allowed after 12 years of formal science education as a pre-requisite.

Looking at this information, this poses the question as to whether patients understand the differences in education, or recognize differences in experience, dependent on who is treating them. Although currently not measured, this may cause patients confusion and may give variable experiences. The emphasis on patient care seen in DPharm degrees should be ensured in all degree programmes. Regulators globally need to work together to share current expected outcomes, define the criteria required, and a level of delivery for a pharmacy degree. FIP could support a global report, based on the acquired information, identifying the expected skills, professional attributes and knowledge expected from the various degrees available. This will support consistency of experience globally for students and the public alike.

Post-registration internship and assessment

At least 25 out of 94 countries globally (27%) support a post-degree preregistration internship system of 6 to 12 months.¹⁰ The FIP global report on workforce intelligence¹¹ showed that 31 out of the 66 countries surveyed had a licensing or registration exam.

Post qualification education standards and the benefits of sharing experiences

Lifelong learning ensures knowledge, skills, and attributes are up to date and relevant to practice. CPD is a cyclical process, incorporating reflection, planning, and participation, often carried out as a CPD cycle, compared to CE which focuses predominantly on participation.¹² Participation in CE events contributes to CPD, with CPD allowing reflection of learning and application into practice. Participation in CPD shows a more significant impact on perceptions of practice, versus participation in CE, with

increased contextualization of knowledge on practice.¹³ CPD and CE both contribute to lifelong learning, which is essential for any professional. Nevertheless, the need to complete CPD, or CE post-qualification, is hugely varied, with no harmonized global model. There is a need to share requirements globally and learn best practice, to ensure pharmacists can be prepared to support the changing healthcare needs.

Several organizations have completed reviews on CPD/CE post-qualification, including the Pharmacy Society Ireland¹⁴ (PSI) in 2010, Tran et al¹⁵ in 2014, and FIP¹² in 2014. FIP identified that only 33 of the 66 countries looked at had mandatory systems in place for recording of CPD/CE. Of those who did, 76% used a 'credit system' for CE and 33.3% (n=11) utilized a CPD portfolio system, including a combination of portfolio and credits, peer review, purely portfolio based and other. CPD cycles are completed in portfolios, capturing a variety of learning activities, and outline planning, action, completion, and reflection. The Irish review recognized that a CPD model should encompass a wide variety of activities, and be outcome-focused. It should support practitioners to develop skills and knowledge throughout their career, with key focus on patient care.¹⁴

The FIP 2014 CPD/CE report¹² noted that 'collectively studies of CPD and its components have demonstrated that pharmacists using CPD practices have better self-reported outcomes in terms of the quality of their learning, leading to improved self-assessment of learning needs and overall pharmacy practice.'

From looking at the reports available ^{12,14,16} mandatory CPD systems are in place in Australia, Canada, Ireland, Malaysia, Namibia, New Zealand, Northern Ireland, Oman, Portugal, Singapore, United Arab Emirates (UAE) and the United Kingdom. It is noted that pharmacy in Portugal and the UAE is regulated by Government/Ministry, and these have CPD credit systems, akin to CE, whereas all other listed countries have mandatory CPD for pharmacists that is regulated by councils or boards at the individual state level in a country. The United States of America is the only country listed in the reports as having a mandatory CE system.

Despite the literature demonstrating that CPD has proven practice benefits when compared to CE,¹⁷ CE is still the most common model used for mandatory learning.¹² Where there is no reflection on learning or there is no demonstration of outcomes from learning, this acts as a significant limitation for supporting the global workforce in expanding their skills. FIP could facilitate a report focusing on

how CPD/CE globally supports application of learning, to understand the impact of these systems on practice and patient care.

Supporting global sharing and the need for regulator involvement in lifelong learning

As seen above, not all countries have regulation in place for lifelong learning. Building on creating uniformity at undergraduate level, a global platform should be created to share learnings from regulators with systems in place. Pharmacists could then access this, in countries where no mandatory system is in place. Various documents describe numerous platforms to support pharmacists' lifelong learning, but arguably this is hard to disseminate to the average pharmacist, unless they go and look for it, if this is not supported by regulators. The FIP 2014 report¹² notes that the market for pharmacy education provision correlates to a country's wealth, so further support is needed, to ensure global access to learning is more measured. While online access to resources may be the easy option, Egyptian pharmacists, for example, note difficulties in accessing material online.¹⁸

Moving forward

Looking at the various models in place for both undergraduate and lifelong learning education, it is clear that the variety seen allows for variable experience. Bruno et al¹⁹ identify that improvement of patient health is the key driver for all healthcare practitioners, despite differences. However, due to the differences seen globally, improvement in patient health cannot always be quantified, considering the educational experience pharmacists receive at training or post qualification.

Both Alsharif,² and the FIP 2014 CPD/CE report¹² both highlight important elements for supporting globalization of pharmacy education. However, timescales are essential to these plans. Without clear timescales and an action plan visible to all, no one will accept responsibility for these changes, and they will continue to be delayed. Change takes time. Therefore more extensive stakeholder and pharmacist engagement is essential, with action plans in place for regulators globally with clear roles and responsibilities outlined along with a realistic time frame.

In 2014, FIP introduced a global framework to try and support consistency of education models.²⁰ In 2016, this was followed with emphasis placed on global education, training and development principles. It set out that a future workforce requires flexibility, transparency and training should be practice based, with support given for educators, and assessments available for all pharmacists to maintain their competence.²¹ Since these reports, no further reports on education of pharmacists have been released by FIP. An international model should incorporate a strategic plan, including timescales,

which could be drafted and championed by FIP. The plan should include translatable skills and attributes, supported by appropriate technologies on a global platform, to ensure pharmacists can prepare themselves to provide care wherever they practice globally.

While policies are in place from FIP and other organizations, there is no clear route for how these can be disseminated at the grass roots level. Regulators globally need to take the lead, supported by FIP, with a collective goal of supporting the pharmacy workforce, while having a global network to share best practice, and resources, to maintain and build on knowledge and skills, in a supportive and collaborative manner.

Implications

Therefore, it can be seen that although aspirations exist, there is currently no global model for undergraduate education or lifelong learning, and it is wide and varied, not just globally, but also within countries. Currently skills and experiences for qualification as a pharmacist differ between countries but all countries should be united in the need to provide consistent patient-centered care and ensure the care and treatments we provide is evidence-based and up to date. In a world of global travel, patients should have confidence that the knowledge of a pharmacist anywhere in the world is up-to-date. Streamlining of education, both pre and post qualification, to the highest possible standard, can only continue to support the profession further.

Different degrees may confuse the public and perceptions may differ due to title, leading to different status in society. Internationally, uniformity or lifelong learning should be encouraged, to benefit the profession, and those under our care.

Due to increased movement of pharmacists globally, the education of pharmacists, at undergraduate level through to lifelong learning, needs to be uniform, to maximize patient care. Pharmacy is a global profession, therefore this commentary brings together multiple documents written about globalization of pharmacy education, from undergraduate to postgraduate lifelong learning, to bring a uniform picture and offer recommendations as to the benefits of working together globally to limit variability. FIP is urged to work globally with regulators, to develop standards and attributes that are universal to the profession.

To summarize the messages seen in this paper, pharmacy regulators globally should be encouraged to:

- 1) Gain uniformity of the pharmacist title and degree classification to reduce public confusion. Sharing of curricula and a continued emphasis on patient- facing experiences will support consistency of experience, and work towards portability of the pharmacy qualification. This could be supported by FIP producing a report on undergraduate education globally, to give transparency to current practice, and identify key skills, knowledge and attributes needed for a pharmacy degree to be awarded.
- 2) Share experiences and learn from those with mandatory systems of ongoing CPD/CE to identify possibilities for the profession. A global platform for learning material should be created. Reports already exist about global CPD/CE, but these have not been updated since 2014. Focus on application into practice should also be explored in a future report.
- 3) Build a uniform model of lifelong learning for pharmacists, to support the profession globally. By ensuring similar standards, this will support pharmacists to work between countries, and ensure an expected standard for patient care.
- 4) Put timescales to plans, to identify and measure progress and put clear achievable actions in place. FIP should add timescales to their plans, and give regular updates to achieve their plans.

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