



Research Paper

Stakeholders' perceptions on competency and assessment program of entry-level pharmacists in developing countries

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ABSTRACT

Objectives: To assess the stakeholders' perceptions on the competency of entry-level pharmacists and the use of written licensure examination as the primary assessment for licensure decisions on entry-level pharmacists who have completed the Pharmacy Internship Program¹ (PIP) in developing countries.

Method: A cross-sectional survey was conducted among stakeholders in which they completed a web-based 21-item pre-tested questionnaire to determine their views regarding the competency outcomes and assessment program for entry-level pharmacist.

Results: The stakeholders rated the entry-level pharmacists to possess all competencies except research skills. Stakeholders suggested improvement of the program by defining the competency framework and training preceptors. However, stakeholders disagree on using written examination as the primary assessment for licensure decision and suggested the incorporation of other performance-based assessments like preceptor's assessment reports.

Conclusion: Stakeholders are uncertain on entry-level pharmacists in developing countries possessing adequate research competencies and think their assessment program for licensure need more than written examination to assess all required competencies.

Introduction

The growing demands of healthcare require the training of competent pharmacists who can effectively perform their roles in the clinical setting to ensure quality health care delivery. Internships are pivotal for the training of qualified health professionals like pharmacists in developing countries. Internships are conducted under a work-based environment where interns develop the requisite competencies under the supervision of an expert.¹ Such training programs should be closely linked with an assessment program that evaluates the trainee's competency of necessary skills utilized during real life practice. This assessment program for health professionals should be appropriate in its evaluation by evaluating the quality assessment criteria, especially for high-stakes decision making and regulation.²

The ideal assessment would be developed based on the evaluation of each professional competency.^{2,3} These competencies measure different skill sets at different levels of proficiency, such as those described in Miller's triangle. Assessments can measure knowledge, skills, and attitudes.⁴ For this reason, multiple assessments in different formats may be necessary to fully evaluate a

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learner's competencies. If the assessment format or methodology is incorrect for a particular competency, the assessment will not measure the competency correctly. According to the assessment principles published by Van der Vleuten et al.⁵ single-shot assessments at just one level of Miller's Pyramid is inherently flawed and not reliable because it cannot capture the levels of proficiency for the combined competencies. New performance-based assessment programs are the modern and acceptable paradigm in health professions because they improve validity and fairness of the assessment.⁶ The utilization of formative assessment programs, which are used to continually monitor a learner's understanding along a continuum and provide targeted feedback on strengths and weaknesses,⁷ are very useful in evaluating the competency of trainees, especially during high-stakes decisions that require more assessment data points.

The assessment programs used for certifying entry-level pharmacists in developed countries use a contextualized assessment environment that is facilitated through a behavior-based clinical examination (OSCE). It is implemented as a complementary assessment to the traditional cognition-based written licensure examinations for entry-level pharmacists.^{6,8–13} The major challenge with implementing the OSCE component in developing countries is cost and reliability of assessors. While these barriers exist, the underlying principles could still be adopted and modified to fit the resource-constrained context of developing countries.¹⁴

Other issues with work-based training, which has been widely employed in the developing countries to provide contextualized learning, are challenges with close supervision/observation, harmonization of training curriculum, and a lack of structured assessment, or an active feedback system. There may be instances that interns who are trained in a resourceful training site may acquire skills that will differ widely from that of interns in resource-constrained training site although they are assessed with the same written licensure exams. These challenges affect the resulting competency outcome of the entry-level pharmacists.

In most developing countries, like Ghana, licensure examinations are the primary assessment method for certifying that health professionals are qualified to practice. The licensure exams, which come after a four-year didactic Bachelor of Pharmacy education program and one year of work-based training are mandatory in Ghana for all entry-level pharmacists. There are concerns that the current assessment used to license entry-level pharmacists in Ghana is not sufficient and needs improvement. An initial step in the improvement process is to obtain and analyze pharmacists' perception of the current assessment procedure. It is also important to obtain and analyze the perceptions of critical competencies for entry-level pharmacists to ensure that the correct skills are taught and practiced in the Bachelor and Pharmacists' Internship Program (PIP). Stakeholders' input is vital for improvement of the training program for competent pharmacists.

The main essence of training in the PIP is to build professional competencies that are practice-oriented.¹ Assessment of these professional competencies is fundamental to ensure that the entry-level pharmacists can connect ideas, apply knowledge, demonstrate skills, and solve problems in the exercise of their duties in pharmaceutical care.¹⁵ Miller's pyramid describes levels of competency that should be demonstrated on the assessment.¹⁶ According to Miller,¹⁶ the lowest level of competency involves testing factual recognition. The next layer up involves knowing how something works or exists. It involves measuring procedural knowledge or application. The third level up involves guided demonstration or simulation in a controlled environment. The top section of the triangle involves performing a task in a work environment.³

In Ghana, the training of competent entry-level pharmacists takes place through a mandatory internship program. The PIP in Ghana is a work-based training where an intern pharmacist progresses from student to qualified entry-level pharmacist by expanding his or her academic knowledge with practical experience gained through the supervised contextual practice. The PIP bridges the four-year academic Bachelor's degree holder and the licensed pharmacist. The Ghana Pharmacy Council, the regulatory body that certifies pharmacists, coordinates the training and licensure of pharmacist after the four-year B.Pharm education.¹⁷ The internship takes place in the clinical setting of hospital and community pharmacies where interns are trained to bridge and transfer the knowledge taught in the four-year B.Pharm education into the requisite competency skills for their professional practice. Using the summative assessment approach, the Ghana Pharmacy Council evaluates the acquired skills with a cognition-based written licensure examination at the end of the yearlong internship.

Due to the absence of a structured competency framework for pharmacists' training in Ghana, the poorly defined competency goals may lead to differences in the levels of professional competency of the trainees. Because the primary assessment program used to make licensure decisions is only cognition-based, the perception of stakeholders on the competency of entry-level pharmacists and the major assessment program used may vary widely attributable to higher levels of proficiency being randomly taught and measured. Currently, efforts are underway in some developing countries like Ghana to develop a competency framework that will improve the quality of the pharmacist internship training. However, documented evidence on how stakeholders perceive the competencies of entry-level pharmacists in the practice settings is lacking. This study helps policymakers to gather documented evidence from the stakeholders to guide the framework development and continuous improvement of the PIP.

During the PIP in Ghana, preceptors conduct unstructured formative assessments during the work-based training, but only the summative cognition-based licensure examination is the primary assessment for licensure decisions. The principles of assessment disagree with the use of single shot "knows how" examination to assess "shows" or "does" competency within Miller's Triangle to make high-stakes licensure decisions.⁵ The cognition-based licensure examination is made up of selected response and constructed response questions as well as case studies, which assess the application of core knowledge and core competencies¹⁸ but not the "shows how" and "does" competency categories of Miller's pyramid. The challenge that arises is that an assessed application of domain knowledge may not necessarily translate into transferable professional competency skills for the challenging real-life setting where the licensed pharmacist will work. This assessment approach used in PIP places less emphasis on other relevant domains like interpersonal relationships, lifelong learning, professionalism and integration of core knowledge to clinical practice necessary for successful pharmaceutical services. In addition, the PIP does not have any documented evaluation of the assessment program used in the competency training since its inception more than a decade ago. The evaluation of the PIP assessment program will reveal how

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