

Strengthening preservice pharmacy training on rational medicine use, antimicrobial resistance, and pharmacovigilance

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Introduction

Preservice education is a cost-effective and sustainable intervention that strengthens health systems. Adequate preservice training on practical topics of importance to public health during the early and formative learning periods provides students with the necessary competence and confidence for practice in the real world.¹ Rational medicine use (RMU), antimicrobial resistance (AMR), and pharmacovigilance (PV) are areas of high clinical and public health relevance, but they are often inadequately covered in preservice pharmacy education in low- and middle-income countries (LMICs).

Purpose

The purpose of this intervention was to strengthen RMU, AMR, and PV training in preservice pharmacy education in LMICs.

Method

The US Agency for International Development (USAID)-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program and its predecessor collaborated with the University of Namibia (UNAM) School of Pharmacy (SoP) and with Vietnam's Hanoi University of Pharmacy (HUP) to reform preservice education. UNAM-SoP developed RMU/AMR content for its undergraduate pharmacy practice modules, and HUP reformed the PV component of its pharmacy postgraduate curriculum. Both universities reformed these components of their pharmacy curricula by first constructing specific learning outcomes based on the practice needs and required competencies. They then aligned the teaching-learning methods to those learning outcomes. The universities developed their instructional materials for RMU, AMR, and PV using current evidence and best practices.

Results

The RMU/AMR content of the undergraduate pharmacy practice modules at UNAM-SoP and the PV contents of the postgraduate pharmacy curriculum at HUP were finalized through review meetings and implemented using detailed trainers' guides with step-by-step instructions.^{2,3} The total classroom contact times for PV learning at HUP and RMU/AMR learning at UNAM-SoP were 23 hours and 20 hours, respectively. The curricula emphasized learner-centered methods to enhance experiential learning. As of August 2016, the reformed PV curriculum has been used with four cohorts of HUP students, while the revised RMU/AMR curriculum at UNAM-SoP has been used with three cohorts.

At UNAM-SoP, a task-oriented approach was used as the primary delivery method. Students worked in groups to complete RMU- and AMR-related tasks, and learning support was provided by other groups and tutors during weekly seminars and/or presentations. Each student and group completed weekly task-oriented assessments.

To obtain student feedback on the new instructional design of the RMU and AMR material, UNAM-SoP conducted a qualitative survey in 2014 using a five-point Likert-type scale for each response. Nine (64.3%) of the 14 students enrolled in the course that year responded to the survey. The table on the right provides synthesized responses to the questions. Several students commented in the open feedback section of the survey that the new method of teaching-learning provided opportunities for active participation and self-learning; however it was noted that the extra workload involved in doing self-directed learning made overall time management more challenging.

UNAM-SoP Students' Perception of the Instructional Design Used for Delivering the RMU/AMR Content

Questions	Summary of students' responses (n=9)
I like this new teaching method	All 9 respondents (100%) either agreed or strongly agreed
This method makes me revise better	8 (88.9%) respondents agreed or strongly agreed
This method wastes my leisure time	6 (66.7%) respondents disagreed or strongly disagreed
This method burdens students	Mixed response (5 disagreed or strongly disagreed, 3 agreed, and 1 was uncertain)
This method makes students actively participate	All 9 (100%) respondents agreed, and 6 (66.7%) of those strongly agreed
This method has encouraged me to read on my own	8 (88.9%) respondents agreed or strongly agreed
Instructions in this method are easy to follow	7 (77.8%) respondents agreed or strongly agreed
I would prefer another teaching method to this one	7 (77.8%) respondents disagreed or strongly disagreed, and the remaining 2 were undecided
I would recommend this method for other modules	Mixed response (5 agreed or strongly agreed, 3 disagreed, and 1 was undecided)
I have an opportunity to express myself	8 (88.9%) respondents said they had opportunities to express themselves with this style of teaching-learning
I will not be successful in my studies with this method	7 (77.8%) respondents disagreed or strongly disagreed, and the remaining 2 were uncertain
The assessments of this method are rigorous	6 (66.7%) respondents disagreed, 2 agreed, and 1 was uncertain
I deserve the marks I obtain under this method	All 9 (100%) respondents either agreed or strongly agreed
I take more responsibility for my studies than before	All 9 (100%) respondents either agreed or strongly agreed
I have developed more skills/competencies with this method	7 (77.8%) respondents agreed, and 5 (55.5%) of those strongly agreed

Conclusion

Stakeholders in LMICs are recognizing the importance of evolving pharmacy practice to become more patient centered and public health oriented by integrating practical topics, such as RMU, AMR, and PV, into preservice training courses. Student feedback at UNAM-SoP showed that learners like the new teaching-learning method and that it led to increased self-responsibility, active participation, and self-learning.



¹Systems for Improved Access to Pharmaceuticals and Services (SIAPS). 2013. *Revising Preservice Curriculum to Incorporate Rational Medicine Use Topics: A Guide*. Submitted to the US Agency for International Development by the SIAPS Program. Arlington, VA: Management Sciences for Health. <http://apps.who.int/medicinedocs/en/d/Js21526en/>

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