Ready AND Willing: A Self-Assessment Tool to Determine Student Pharmacists' Confidence to Optimize Drug Therapy

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Background

Accreditation standards for Doctor of Pharmacy (PharmD) programs in the United States require that programs "develop and carry out assessment activities to collect information about the attainment of desired student learning outcomes."[1] Furthermore, programs are encouraged to use student self-assessment as one method to "demonstrate and document that graduates have attained the desired competencies."[1] Although one may assume that successful demonstration of knowledge and skill is synonymous to outcome achievement, Albert Bandura's sentinal work on self-efficacy theory suggests otherwise.[2] Bandura argues that the degree of self-efficacy possessed by an individual influences engagement in a behavior, and that this degree of self-efficacy is largely driven by self-confidence levels as opposed to knowledge and skill alone.[2] Studies in the pharmacy and medical education literature support Bandura's theoretical construct.[3,4]

The University of Maryland School of Pharmacy has established sixteen terminal performance objective (TPO) statements that describe specific abilities all pharmacists are expected to competently perform in order to fulfill their professional responsibilities. Some of the School's TPOs relate to the optimization of drug therapy, including:

1: Participate in the development of patient-specific therapeutic plans
1.1: Compile and evaluate patient-specific information
1.2: Collaborate with physicians, other prescribers, patients, and caregivers to:
- 1.2.1: establish therapeutic objectives
- 1.2.2: select an appropriate drug regimen to achieve the therapeutic objective(s)
- 1.2.3: determine the dose and dosage schedule
- 1.2.4: assess an existing drug regimen and recommend modifications

9: Maximize appropriate drug use behaviors
9.1: Determine the extent to patients adhere with their therapeutic plan(s) including recommended drug regimens
9.2: Determine whether patients engage in and use appropriate techniques to perform self-monitoring activities as part of their therapeutic plan(s)
9.3: Identify the root cause(s) that prevent patients from engaging in optimal drug use behaviors
9.4: Influence patients to improve adherence to recommended lifestyle behaviors, drug regimens, and self-monitoring

10: Participate in the process of monitoring patient outcomes
10.1: Collaborate with physicians, other prescribers, patients, and caregivers to:
- 10.1.1: develop monitoring plans to determine if the therapeutic objective(s) is being achieved
- 10.1.2: develop monitoring plans to detect adverse drug effects
- 10.1.3: evaluate the actual or potential impact of drug-drug and drug-food interactions on patient outcomes

10.2: Collaborate in the patient monitoring process by:
- 10.2.1: interviewing patients to determine if the therapeutic objectives are being achieved or if the patient is experiencing an adverse drug effect
- 10.2.2: performing targeted physical examinations (e.g. vital signs, visual inspection) to determine if the therapeutic objectives are being achieved or if the patient is experiencing an adverse drug effect
- 10.2.3: Record patient-specific monitoring data in an organized manner using appropriate medical terminology

Conflicts of Interest - None

Objectives

To develop a tool that assesses student self-efficacy to perform essential professional tasks; to utilize this tool to track the maturation of students as they progress through the curriculum; and to identify and address areas of the curriculum where students are not gaining sufficient self-confidence.

Methods

A survey tool was developed that presents three case scenarios: one in a community pharmacy setting, one in a hospital pharmacy setting, and one in a health maintenance organization (HMO). Each scenario is followed by a list of tasks that would be essential to addressing the problem(s) in the case. Each task is anchored in the school's terminal performance outcomes. For example:

Case 1 - Community pharmacy case:
- Determine the dose and dosage schedule for Mrs. Garcia's diabetes medications
- Influence Mrs. Garcia to improve adherence to recommended lifestyle behaviors, drug regimens, and self-monitoring

Case 2 - Hospital pharmacy case:
- Select an appropriate drug regimen to achieve the therapeutic objective for the treatment of infective endocarditis in Mr. Jones
- Develop a monitoring plan to determine if the therapeutic objective is being achieved for Mr. Jones

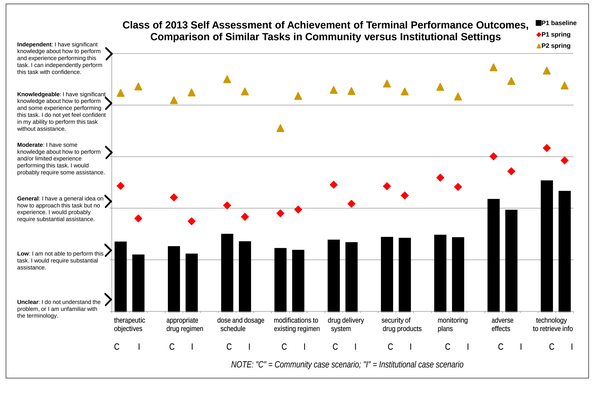
Students are asked to envision themselves in each case scenario and rate their level of confidence to perform the described tasks.

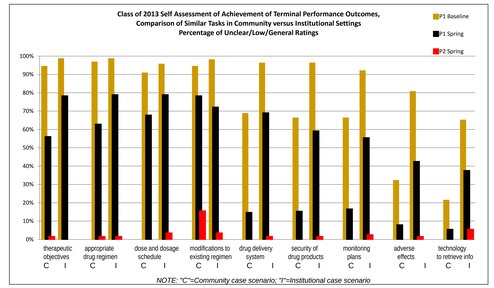
Students in the Class of 2013 were given the survey as a baseline assessment shortly after admission, the Spring of their first professional year (P1), and the Spring of their second profession year (P2). Data from three of the School's TPOs related to the optimization of drug therapy in the community and hospital case scenarios were compared, analyzed, and reported in this poster.

Results

At baseline, most students indicated they could not perform the essential tasks in the given scenario "without substantial supervision" (ranging from 54 to 98% depending on task and scenario). As students progressed through the curriculum, the percentage of students who indicated they could not perform the task without substantial assistance declined significantly (ranging from 27 to 78% Spring P1 year and 1 to 5% Spring P2 year) ($p<0.001$).

Figures





Conclusions

This unique self-assessment tool may provide pharmacy educators valuable insights regarding student progression toward curricular outcomes and may be a useful adjunct to other institutional assessment methods to meet accreditation requirements.

References

1. ACPE Standards and Guidelines (Adopted January 23, 2011).
2. Bandura A. Psychological Review 1977; 84: 191-215.
3. Popovich NG, et al. AJPE 1987;51:17-23.
4. Ytterbert SR, et al. Acad Med 1998;73:S103-105.