Saudi Pharmaceutical Journal (2016) **24**, 669–673

King Saud University

Saudi Pharmaceutical Journal

www.ksu.edu.sa
www.sciencedirect.com

ORIGINAL ARTICLE

Bridging theory and practice: Mixed methods approach to instruction of law and ethics within the pharmaceutical sciences

Kyle John Wilby *, **Ziad Ghantous Nasr**

PO Box 2713, College of Pharmacy, Qatar University, Doha, Qatar

Received 14 May 2015; accepted 9 June 2015
Available online 15 June 2015

KEYWORDS

Law;
Ethics;
Education;
Pharmacy;
Teaching

Abstract *Background:* Professional responsibilities are guided by laws and ethics that must be introduced and mastered within pharmaceutical sciences training. Instructional design to teaching typically introduces concepts in a traditional didactic approach and requires student memorization prior to application within practice settings. Additionally, many centers rely on best practices from abroad, due to lack of locally published laws and guidance documents. *Objectives:* The aim of this paper was to summarize and critically evaluate a professional skills laboratory designed to enhance learning through diversity in instructional methods relating to pharmacy law and best practices regarding narcotics, controlled medications, and benzodiazepines. *Setting:* This study took place within the Professional Skills Laboratory at the College of Pharmacy at Qatar University. *Method:* A total of 25 students participated in a redesigned laboratory session administered by a faculty member, clinical lecturer, teaching assistant, and a professional skills laboratory technician. The laboratory consisted of eight independent stations that students rotated during the 3-h session. Stations were highly interactive in nature and were designed using non-traditional approaches such as charades, role-plays, and reflective drawings. All stations attempted to have students relate learned concepts to practice within Qatar. *Main outcome measures:* Student perceptions of the laboratory were measured on a post-questionnaire and were summarized descriptively. Using reflection and consensus techniques, two faculty members completed a SWOC (Strengths, Weaknesses, Opportunities, and Challenges) analysis in preparation for future cycles. *Results:* 100% (25/25) of students somewhat or strongly agreed that their knowledge regarding laws and best practices increased and that their learning experience was enhanced by a mixed-methods approach. A total of 96% (24/25) of students stated that the mixed-methods instructional approach should be

* Corresponding author. Tel.: +974 4403 5606; fax: +974 4403 5551.
E-mail addresses: kjw@qu.edu.qa (K.J. Wilby), znasr@qu.edu.qa (Z.G. Nasr).

Peer review under responsibility of King Saud University.

Production and hosting by Elsevier

http://dx.doi.org/10.1016/j.jsps.2015.06.001

continued in the future. The SWOC analysis identified the mixed methods approach and student feedback as strengths and opportunities, while resource shortages and lack of impact assessment were identified as weaknesses and challenges. *Conclusion:* Creative redesign of instructional methods pertaining to law and best practices was effective to achieve positive student perceptions regarding instructional methods and learning. Future cycles should include rigorous assessment methods to evaluate impact on student learning and practice.

1. Introduction

Law and ethics are core components of health professions curricula worldwide. Graduating professionals must be able to competently adhere to legal frameworks regarding all practice considerations, including prescription and dispensing of medications (Austin et al., 2004a). While much of this can be learned through experiential training, theory and foundations are typically introduced within classroom settings (Ghallagher, 2011). It is also essential to give students foundations of laws and ethics prior to beginning experiential internships. Topics may include terminology, practice standards, legal frameworks, and professional ethics. The importance of this subject matter is demonstrated by incorporation of entry-to-practice examinations (PEBC, 2015; NAPLEX, 2015) and the requirement of many self-regulated states for candidates to pass jurisprudence examinations prior to eligibility for registration as a professional.

Pharmacy schools located in developed countries typically have established legal frameworks to guide instruction and assessment. However, those in developing countries (including Qatar) may not have firm laws, policies, or frameworks for the regulation of prescription and dispensing of medications (Kheir and Fahey, 2011). This poses extra challenges as curricula must include not only currently existing legal frameworks but also best practices from international settings to ensure graduates provide safe care and act responsibly as professionals within practice settings. Students in such settings must be able to decipher between what is legally allowed and what should be strived for in terms of best practice.

A literature review produced no articles describing instructional methods for teaching legal considerations for pharmacy practice. This finding suggests that law content is typically being given in a traditional didactic lecture format, as was the case with our own institution. However, learning theory proposes that all students do not respond to this form of instruction and that students may benefit from diversity in instructional methods (Romanelli et al., 2009; Pungente et al., 2003). Interactive and 'hands-on' learning may reinforce or solidify concepts difficult to simply memorize or apply based on traditional teaching methods. It is also known that diversity in instruction is typically perceived more positively (Austin, 2004b). Therefore, we hypothesized that diversity in instructional methods relating to legal content would result in enhanced learning and positive perceptions of pharmacy students in our program.

In order to address the concerns identified above, we recently redesigned instructional methods for our curricular content relating to laws and best practices for prescription and dispensing of narcotic and controlled medications. In former years, this content was given in a lecture format that relied on students to memorize learned concepts through slides and small case examples. However, student feedback was negative with respect to the instructional design. Therefore, we sought to respond to student feedback and assess a creative approach to teaching laws and best practices at our institution. The aim of this paper was to summarize and critically evaluate a professional skills laboratory designed to enhance learning through diversity in instructional methods relating to pharmacy law and best practices regarding narcotics, controlled medications, and benzodiazepines.

2. Materials and methods

The laws and best practices pertaining to narcotic and controlled medications are taught within the Professional Skills series in the second year of four years of the Bachelor of Science in Pharmacy program. The content is allocated a single three-hour laboratory session out of a 45-h (15 week) course. The session leader is an Assistant Professor in the Clinical Pharmacy and Practice section within the pharmacy program and has practice experience in both Qatar and Canada.

The past content of didactic slides and case examples underwent significant revision to be formatted within a professional laboratory environment. Eight independent stations were developed based on the learning outcomes of the course and content session. Stations were designed to be highly interactive and incorporated innovative instructional methods, such as use of charades, reflective drawings, role-plays, and technology. Each station was developed by the session leader and independently peer reviewed by three separate faculty or staff (Clinical Lecturer, Professional Laboratory Technician, and Teaching Assistant). Modifications were made to both process and content components. Each station was assigned a total of 10 min. Stations were set between two professional skill laboratories (4 stations and 3 stations, respectively) and one faculty office (1 station) located adjacent to one another. The faculty office was used to confine the charades station to avoid students observing colleagues completing the station in advance of their own time. The session leader and each of the faculty/staff were each responsible for facilitating two stations each throughout the entire laboratory period. A summary of each station, associated learning outcome, and procedures is given in Table 1. Students were encouraged to create their own note sets during station activities for study purposes.

Students were divided into groups of 3 or 4 individuals and assigned to a starting station. The laboratory technician kept time and was responsible for moving students through the eight stations. After all students completed all stations, a large