TEACHERS’ TOPICS

Instilling Practical Knowledge About Nonprescription Product Use

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Nonprescription Therapeutics (PHA324) is a 5-unit course taught in the second semester of the second year of the PharmD program. The primary objective for this course is for students to demonstrate a level of competence that extends beyond basic product knowledge. Instructional methods used to achieve this objective include an interactive presentation of course material, a 7-step case-based analysis, and reflective journaling, all of which contribute to a positive, rewarding learning experience. Course content focuses on the application of products to meet the self-care needs commonly presented in pharmacy practice. Course content includes nonprescription products, dietary supplements, home medical equipment, and self-testing products. Topics range from symptomatic treatment of the common cold to counseling patients regarding the use of dietary supplements during treatment for cancer. Student attendance is consistently high and assessments of this course are usually positive.

Keywords: situational learning, nonprescription products, classroom environment, patient care, therapeutics

INTRODUCTION

“Take 2 aspirin and call me in the morning” was once sage advice from health care providers. This same advice today might include a litany of qualifiers, such as “unless you are on anti-coagulant medication,” “unless you have stomach pain,” “unless you have asthma,” “unless you are allergic to aspirin,” and so on. Expansion of the choices available in the nonprescription products section of a pharmacy coupled with a pharmaceutical care model that expects pharmacists to utilize their knowledge and skills to improve patient outcomes brings with it the responsibility for providing pharmacy students with a reality-based nonprescription product educational experience.

Students acquire knowledge of which nonprescription products are available to treat pain and the product’s expected and possible side effects and contraindications to appropriate use. However, this does not guarantee sound application of this knowledge to patient care. Development of methods that encourage the student to think about course content and reflect on its application rather than regurgitate memorized facts is considered a desirable approach to learning.1 Successful interactions with patients in the nonprescription products aisle can also be linked to the instillation of professional behaviors during the learning process. Lee Shulman, president of the Carnegie Foundation for the Advancement of Teaching and Learning, states, “A professional learns to think in certain ways, but also to practice or to act in certain ways.”2 The strategies incorporated in the lesson plan that follows demonstrate some of the tools utilized to practice using drug-related knowledge in situations approximating the type of consultation that takes place in the nonprescription products aisle. Primarily, the authors use the following 4 tools to accomplish this goal:

1. Teaching a 7-step case-based analysis process
2. Emphasizing interactive presentation of course material (situational or active learning)
3. Creating a student-friendly environment (eg, use of fun money)
4. Requiring personal reflective journaling

INSTRUCTIONAL DESIGN

Course Description

This Nonprescription Therapeutics course is a 5-unit course with class meetings on Tuesday and Thursday for 2 hours, followed by a 1-hour session on Friday each week. One hundred ten students are enrolled in the campus-based course during the spring semester of their second professional (P2) year in the doctor of pharmacy program. Course content is available to the student in various formats. There is a class website in Blackboard that contains the slides and any written notes for each week. It is

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also where the weekly class newsletter, syllabus, access to audio files, weekly journal entry topic, quiz reviews, and case solutions are maintained.

The general schedule includes a 10-question quiz each week. Examinations are given in electronic format through Questionmark every 3 weeks. Case analyses are due every 2 weeks and a weekly journal entry is required.

The expectation for passing the course is an overall score of 80%. If the student’s cumulative score is below 80%, he or she receives an “F.” This mastery level approach involves allowing up to 2 repeat attempts at taking an examination. If a student scores below 80% on the first attempt, they may choose to retake the examination. In response to the instructor’s first experience with this grading system (some students deliberately did poorly so they could see the examination and retake it for an “A”), the grade on the second attempt is now averaged with the grade from the first attempt, and the maximum grade a student can receive on the second attempt is 85%. If a third attempt is necessary (rare), a pass/fail examination is given for which they receive a grade of 80% if they score 80% or above, and receive their actual score if it is below 80%. When a student fails the examination on the second attempt, he or she receives tutoring one-on-one with an instructor prior to a third attempt to determine where the student is misunderstanding the material.

Audio recordings of each lecture and a weekly newsletter are produced primarily for the Internet-based students who take the course concurrently, but all students have access to all course materials.

Two textbooks are required for this course:
- *Natural Medicines Comprehensive Database.* Edited by Jeff M. Jellin and compiled by the editors of Pharmacist’s Letter and Prescriber’s Letter.

**Seven-Step Case-based Analysis**

When approached by a customer wanting a nonprescription product for pain, an experienced pharmacist would proceed through a series of steps, culminating in a recommendation to a patient. Because such an approach is often done informally while standing in the nonprescription products aisle, even if a student were observing this process, the steps might not be clear and/or apparent. Thus, personal reflection and interactions with students, coupled with greater than 50 years of practical self-care experience, ie, nonprescription products experience, between the authors, led to the creation of a 7-step process that teases apart the components of a patient consultation in the nonprescription products aisle. Consider the following example of a situation in which the 7-step process could be applied. A patient asks the pharmacist to recommend a nonprescription product for pain. The patient has a mild headache. It is no different than the occasional headaches he has previously experienced. He has used acetaminophen in the past but wonders if there is something better. The man is a regular customer and the pharmacist is familiar with his health history. He has no health concerns that would preclude using any of the nonprescription pain products that are available. The spectrum of possible approaches by the pharmacist ranges from simply directing the man to aisle 3 to engaging in the type of assessment and interaction with the patient that the authors hope their students will emulate. The following is an explanation of the 7 steps in the analysis process and how the students are expected to apply each to a case.

1. **Assess the patient.** The goal is to collect information and history, to confirm the patient’s chief complaint that brought the patient to the pharmacist, and to estimate the severity of the illness or injury. Information such as location, duration, severity of pain, and brief medical history needs to be obtained by the pharmacist. The students are expected to write the questions to be used if this was an actual patient. Previous use of and results from analgesic products would also be an important question. In the illustration given, the pain the patient feels is not readily apparent to the pharmacist. Since the cases are static, the students are generally directed to assume that self-care is appropriate, and proceed to step 2.

2. **Determine the level of care needed.** The student should be capable of assigning the appropriate level of care. Furthermore, the student must determine the level of speed and type of care that is needed. Three choices exist: (1) patient self-care with nonprescription products, non-drug measures, or doing nothing; (2) referral to an MD; and (3) calling 911 (the pharmacist may need to initiate cardiopulmonary resuscitation (CPR), first aid, etc, as dictated by the situation). In this course, which is about nonprescription products, self-care is usually the obvious answer. However, the realization that situations do occur in which self-care is not in the best interest of the patient is maintained as a component of the learning process.

3. **List the options available.** The student must compile a comprehensive list of therapeutic options. In the example of the customer with a headache, the possible options for treatment are a non-steroidal...
anti-inflammatory drug (NSAID); acetaminophen; aspirin; a specialized product, eg, Excedrin Migraine; a dietary supplement (nutraceutical), eg, feverfew, butterbur extract; and non-drug methods (eg, rest, sleep, massage, environmental changes).

(4) Evaluate the risks and benefits of each option. Using treatment with NSAIDs as an example, the risks the student should identify would be gastrointestinal discomfort (reduced when taken with food), potential for increased risk of GI problems if the medication is mixed with alcohol or aspirin, drowsiness, dizziness, and/or blurred vision, and that nonprescription products therapy for pain should be limited to 10 days. The possible benefits would be well-established efficacy in treating pain, quick onset of action, and the availability of multiple products and dosage forms. Each option identified in step 3 should be given the same type of brief review.

(5) Develop a specific care plan for the patient. As an example, the patient has tried acetaminophen but was wondering if something else would work better. In this section, the student must commit to a specific plan complete with product name, strength, dosage, and counseling. The suggestion is for the patient to take 2 caplets of Excedrin Migraine with a glass of water. The headache should improve or go away within an hour or 2 after the first dose. If symptoms persist or worsen, the patient should consider contacting his physician. The manufacturer recommends that the patient not take more than 2 caplets in 24 hours unless directed by a physician.

(6) Suggest follow-up care or concerns. The student should describe, for the patient, what to do should therapy fail or succeed and what defines that difference. As an example, if the patient experiences common side-effects related to this product, the pharmacy student should suggest alternatives. For an acute situation, like the one in our example, direct follow-up may not be appropriate. The patient should be encouraged to inform the pharmacist of the results of this therapy during his next visit.

(7) Defend the care plan chosen. This is an opportunity for the student to justify the choices he or she made in the care plan for this patient. The student should be able to explain how the plan was a better choice than the other possible actions.

For each case, each student completes a written analysis using the 7-step process. During class, the instructors select various students to present individual sections of the case. Students with different selections for patient care plans are asked to compare and defend their selections. Instructors also have the responsibility in a subsequent class to discuss the issues that became apparent during grading. Each case analysis is graded on a 20-point scale with the following value given to the student’s response to each of the 7 steps: step 1 (assess) = 2 points; step 2 (level of care) = 2 points; step 3 (therapeutic options) = 3 points; step 4 (risk/benefit) = 4 points; step 5 (care plan) = 4 points; step 6 (follow-up) = 3 points; and step 7 (defense) = 2 points.

Specific feedback is provided to each student when a component of the case does not meet expectations and points are deducted. The first year this case-based method was attempted, the authors discovered that 2 cases were not enough repetition for students to demonstrate the desired learning. With the addition of 2 versions of a practice case (one done by instructors and one done as a group project) followed by the 5 cases that students individually complete, there was a marked improvement in the students’ demonstration of patient care skills.

The Handbook of Nonprescription Drugs (14th edition) has developed a similar patient-based interactive approach. The authors prefer the steps that were created several years ago that are based on personal experience in counseling patients in real-world settings. The focus is less about doing everything and more about doing what needs to be done in the relatively brief time that the patient may be willing to talk with the pharmacist.

Interactive Presentation of Course Material

The mean to achieve student learning by whatever method involves change from the conventional download of information as the primary teaching method and may involve considerable risk to the comfort zone of the teacher. It is admittedly efficient to walk into class and present the same material that you presented last year on a given topic. This method of teaching is the traditional lecture format where the professor talks and students listen in a passive environment. There may be no time for students to ask questions nor do you have to invent questions, games, quizzes, role plays, 1-minute papers, or any of the other tools that create an active-learning environment in the classroom. The authors’ approach is a more time-intensive process and requires more creativity and imagination than simply lecturing. Discomfort on the instructor’s part may derive from less control in the classroom because questions or exercises may take longer to complete, topic direction may change, and teaching moments may come from the students rather than the professor.

To encourage interaction, a lesson may contain questions such as, “Can I use this NSAID for a patient who has a heart problem and is taking aspirin daily?” Interactive lessons are intended to guide the student as they filter the information they obtain from the textbooks. The authors maintain a traditional lecture component that provides a framework for learning the material, suggest which tables...
Creating a Friendly Environment

All of the tools utilized in the course are used in a positive-learning environment to encourage application of knowledge in a variety of situations. In the process of nurturing the development of a pharmacist, a classroom environment that is comfortable enough for students to speak up, ask questions, share experiences, and attempt answers is critical. The authors create this environment by a combination of bantering with one other (note: both instructors are “wired” for sound during class), poking fun at themselves, creating a sage environment by allowing the students to be themselves without criticism, and handing out “funny money.” Thoughtful questions and answers generated by students are rewarded with either “Kiwi Moolah” or “Hamilton Hong Kong Bucks.” Each “buck” is equal to 1 point. The students redeem their funny money at the end of the semester for bonus points, which are added to the total points the students earned on the 4 examinations. Depending on the situation, funny money is often handed out generously. The funny money is created from foreign currency that is radically changed so it cannot be construed as an attempt to counterfeit legitimate currency (Figure 1).

Reflective Journaling

A weekly journal is required for this course. Reflection and evaluation are important to higher-level critical thinking domain (Blooms Taxonomy Level VI). The general format is based on the student’s personal observations and professional responses to the following:

1. How would you use this product or therapy in your practice? For example, for what type of patient? To treat what symptoms? Is the product you are discussing a first-choice option or used later in self care?
2. Identify one type of patient that you believe would not be a candidate for this therapy and explain your reasoning.
3. Answer any specific journal questions from this week’s written notes or a question generated in class and added to the journal questions and found in the class website.
4. Relate a personal experience associated with this week’s topic along with your related observations or lessons learned from work or intern experience.

Examples are provided at the beginning of the semester to clarify the type of reflections the instructors expect. In addition to a reminder to continue this weekly exercise, a specific question is assigned each week. For example, “Describe a specific painful personal experience that was appropriate for self-care and describe that self-care treatment.” Class time is used to answer any questions about the journaling process.
Journals are collected near the end of the semester. A journal that has a completed entry for each week demonstrating reflective effort by the student will receive full credit. If journal entries are missing or the quality of the answers suggests less than serious effort, points are deducted. This is a subjective process so grading is not harsh.

DISCUSSION

Learning can be difficult when the mind is numbed by boredom. Using the classroom as an opportunity to download all the esoteric knowledge that the teacher possesses is a formula for creating a passive and generally boring environment. The authors believe it is important to maintain a light, open, interactive classroom environment where humor and experiential revelation are welcome. Students may struggle as they adapt to a system in which participation is expected, appreciated, and rewarded. The authors have observed and reviewed evaluations of classrooms where similar learning tools were used, but the professor created an intimidating or overly formal environment, even humiliating students who gave incorrect answers. Students tend to respond more positively when they perceive a reward for participation, even if their response is not viewed by the instructors or their peers as the best possible answer.

Some students will remain non-engaged. One successful approach to encouraging participation among usually nonresponsive students is to not return to the same small group of students who are always ready to answer questions. This, plus occasionally just calling on someone from the class list, spreads the interaction and rewards. A photo roster of the students aids in this process. When bonus bucks are returned for credit at the end of the semester, almost everyone has a couple of points and some end up with as many as 15 or 20 points. This, plus some bonus points from other activities, amounts to about half of a letter grade improvement in the student’s final outcome for the course.

The creativity and organization necessary for this type of course exceeds the requirements for a course that consists of a conventional didactic set of lectures and midterm and final examinations. The rewards for the instructors consist of having fun almost every day, watching students as they become professional in their application of knowledge, and receiving positive feedback from students as evidenced by their attendance in class, evaluations, and personal feedback.

Pedagogical evaluation that could be considered proof that the course is successful in accomplishing its learning goals is received from a variety of sources. The authors receive formative and summative feedback that learning and practical application of product knowledge is occurring through quizzes, examinations, cases, journals, course evaluations, and the interactive classroom. Even with the mastery level grading system (80% to pass), the number of failing grades has been only 2 out of 337 over 3 years.
The course and instructors generally receive very positive evaluations. Anecdotal evidence is frequent. The type of occurrence described below in a phone call from a student indicates something positive is happening: “I just got home and I was telling my roommate what we learned in class today and she is asking me about this white spot she has on her hand. Do you think it is a wart?”

Another comment from a student to one of the instructors was also encouraging: “I can’t believe it, but I was at work and a customer asked me about glucosamine and we had just talked about it in class so I was able to counsel her on the risks and benefits. My pharmacy boss was listening and asked me some more questions and I was able to answer them. He was very impressed with what we are learning in class.”

The user-friendly environment allows the authors to have a more enjoyable and rewarding teaching experience. The workload for instructors in accomplishing the multiple tasks necessary to keep up with what the authors expect from students is sometimes daunting. The decision to rebuild the format for the course occurred as a result of new material being added to the course (dietary supplements), an increased sharing of the teaching load secondary to the initiation of the Internet-based teaching pathway, placement of the nonprescription course in the second year of the professional curriculum (previously in the first year), and disappointing evaluations of the course as it was previously taught. The authors allocated a semester to revamp the prior version of the course. The course is currently in its third year of being taught as described. Many of the teaching/learning tools are available from the teaching literature, with a small selection indicated in the references. Numerous other teaching resources exist outside of professional specialization literature such as, The Teaching Professor (The National Teaching & Learning Forum, http://www.ntlf.com) and Novak’s Just-In-Time Teaching: Blending Active Learning with Web Technology. A number of resources are also available from Jossey-Bass publications (www.josseybass.com). Conversations similar to the ones described above provide their own reward. The authors, despite the workload, would not consider a return to the previous teaching pedagogy. Student outcomes demonstrate success. Course evaluations are consistently positive. The authors believe that upon completion of this course students will be competent as entry-level professionals when they counsel a patient regarding self-care in the nonprescription products aisle.

**SUMMARY**

Developing professional competence extends beyond the accumulation of knowledge. Repetition utilizing cases and journaling provides the student an opportunity to practice, receive feedback, and develop a sense of progression and confidence in using product knowledge. Situational learning that resembles a self-care, patient-pharmacist interface is critical. During the 5 class hours per week, the importance of maintaining a positive learning environment cannot be overemphasized. A friendly interactive environment combined with the real possibility of a direct reward for participation is key to the success of this course.

**REFERENCES**