

Usability of an experiential course to educate medical students in proper use of opioids in the treatment of pain

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Purpose

The White House Office of National Drug Control Policy (ONDCP) report *Epidemic: Responding to America's Prescription Drug Abuse Crisis* recognizes the need for improved provider education and training and calls for efforts to improve the skills of providers. In the 1999 to 2009 10-year period, nonheroin opioid admissions rose from 1.3% to 7.1%. In 2009 one-third of people older than 12 initiated illicit drug use via nonmedical prescription drugs. Illicit drug use (primarily prescription drug abuse) in active service military increased from 5% to 12% of active duty personnel from 2005 to 2008. Studies reveal that training in pain is inadequate in all aspects of physician training from medical school to residency to CME, leading to inconsistent care, low provider confidence, and inadequate care.

With funding from the National Institute on Drug Abuse, we developed the first of a suite of online courses for undergraduate medical students on the proper use of opioids to treat pain. The course is dynamic in nature and focuses on cases, decision making, feedback, and live interactions with a standardized patient via Internet chat.

We set out to assess if changes that we made in response to the first usability study were well received and identify if other changes were required. We specifically wanted to know if students appreciated the opportunity to practice clinical skills with the standardized patient as part of the learning experience and if they liked the mix of case presentations.

Method

Based on the first round of usability, we added a mix of case presentations, more instruction to the standardized patient encounter, and a new type of question (Choose Your Own Adventure).

We sought to evaluate the prototype for compliance with recognized usability principles based on the 1994 updated Nielsen's 10 principles of usability and Usability.gov. This step assures that the program meets specific minimal standards of usability prior to user testing, for example, consistency of commands throughout the program, visibility, and availability of "help". Changes are made to any aspect that does not meet the standards prior to user testing. Specific attention is made to assess usability and preference related to the role of chat-based interaction with a standardized patient.

Recruitment was accomplished on a national level by e-mailing past medical student users of our training courses for tobacco, and by posting messages on Facebook and Twitter accounts. Medical student participants (n=7) navigated through the Web site, providing feedback on a number of features and architecture. This, the second round of usability, provided us with an opportunity to receive qualitative and quantitative feedback regarding: 1) the use of standardized patients as a learning tool for clinical skills; 2) the overall presentation of clinical skills throughout the course; 3) the use of animated videos to teach clinical skills; 4) the use of various styles of quiz questions to reinforce clinical concepts; and 5) other changes we made previously based on results from the first round of usability.

Results

Students overwhelmingly thought that the clinical skills in the demo course were appropriate for preclinical (100%) and clinical (86%) students. Medical students also were favorable to the case presentation styles used throughout the course; 100% agreed or strongly agreed that the case presentations were valuable and held the attention of students. In agreement with the first round of usability, students preferred the live actor videos (86%) to the animated videos (29%). Students also expressed their opinions that the live actor videos would be effective to learn new clinical skills (86%) as opposed to the animated character videos (14%).

All students (n=7) agreed or strongly agreed that the online chat experience with a standardized patient would be an effective, interesting way to learn new clinical skills and to practice clinical skills. A majority of students (86%) expressed agreement that the tabbed folder was effective in simulating the patient clinical experience and that the patient note would be an effective way to learn new clinical skills. Students liked our improvements in terms of scheduling the SP experience and providing more information about the chat-based SP experience.

A majority of students (86%) agreed or strongly agreed that the quick quiz questions allowed the students a chance to think about the material in the SP encounter. Most students (71%) preferred multiple choice questions as opposed to questions that required the student to enter text. All students (n=7) wanted feedback on their quiz choices. In regards to the Choose Your Own Clinical Adventure, 71% of students liked this type of quiz question. We will continue to offer a mixture of quiz questions to test the knowledge and competence of what students learn throughout the module.

Conclusions

Based on the qualitative and quantitative feedback we received, we made several recommendations for further improvements in the following areas: scheduling of the SP encounter, feedback mechanisms for student performance, and more chances to look at examples for help.

Student acceptance of our first course was high. Our core approach has yielded an engaging a stimulating learning experience. In the next phase of the project we will complete the rest of the courses in the curriculum and then pursue a complete evaluation of the program's effect on clinical skills, confidence in those skills, and attitudes toward prescription drug abuse.