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Title: Experiential Learning About Medication Adherence

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Medication nonadherence contributes to poor health outcomes and causes financial burden.[1] With the recognition of the difficulty of medication adherence, there has been a shift in educational practices. The judgmental nomenclature of "noncompliance" is gradually being replaced by "nonadherence" and greater emphasis is being placed on the importance of shared decision making.

Why is there a need for change? The term noncompliance implies patients should simply follow their physicians' orders, rather than actively engage as participants in their own health care. The term can be stigmatising, derogatory, and negatively impact the relationships patients have with their current and future health care providers. [2] Despite this, many practicing physicians persist in using the term noncompliant, fail to inquire

about barriers to adherence, believe it is the patient's responsibility to follow their orders, and become frustrated when patients are nonadherent.[3]

To appropriately counsel patients and forge a therapeutic alliance, physicians-in-training must come to appreciate barriers to adherence rather than place blame, recognising that adherence is influenced by individual, social and environmental factors.[4] Training about adherence should ideally begin early in medical school.

Using an experiential approach, we designed a curriculum to help preclinical medical students understand the difficulties of adherence and the challenges patients face through a mock prescription programme. The design was informed by the Kolb learning cycle[5] in which educational activities move the learner from a definition of personal meaning, to the acquisition of new knowledge and finally to the practical application, synthesis and extension of this knowledge.

First-year medical students, enrolled in a required clinical skills course focused on history taking, communication, and physical examination skills as well as socio-behavioural topics, participated in an exercise demonstrating potential barriers patients encounter when taking a single prescription medicine. Each student received one of five mock prescriptions consisting of Tic-Tac™ candy (Figure 1). Prescription type and number of times needed to be taken per day varied, creating different experiences to discuss during a debrief.

Students took their prescription to the mock pharmacy, located in the medical school education building, to be filled by the mock pharmacist (course administrator). The pharmacy was only open during business hours, creating a barrier to obtaining the prescription with students needing to find time in their busy schedules to fill it.

Students had varied pharmacy experiences. Some students found long lines (Figure 2), forcing them to return later. Others were told that the expense of the medication exceeded what they could afford. These students were forced to email the mock doctor (course

director) for a less expensive prescription and then return to the pharmacy to have it filled.

The following week, students participated in a small group discussion about medication nonadherence facilitated by course faculty. Students reflected upon their personal experience taking the "medication" and barriers they encountered. They brainstormed ways physicians can engage patients in shared decision making and partner to remove barriers. Discussion surrounded strategies that help patients remember to take medications, including recommending the use of a pillbox, and prescribing medications with less frequent dosing; the importance of providing both written and verbal medication instructions, and verifying patient understanding; and removing barriers to getting prescriptions filled, such as confirming patients can afford medications and get transportation to the pharmacy.

After the exercise, students reported improved understanding of nonadherence and perceived the term noncompliance as derogatory. Students were less likely to find it acceptable to label patients noncompliant. They no longer believed a patient should be able to follow medication instructions, remember to take medications as prescribed, and remember to take medications multiple times a day simply because that was what the doctor ordered. After participation, students' understanding of the difficulty of getting prescriptions filled increased as did their understanding of the challenges faced in taking medications as prescribed.

This innovation suggests that participating in a simple experiential learning exercise over a short period of time can improve preclinical medical students' attitudes regarding nonadherence and their recognition of the myriad of barriers patients encounter. Merely hearing about nonadherence may lead students to believe that taking medications as directed is a simple process unless they experience it for themselves. Engaging in both active learning and reflection has the potential to leave a more memorable impression.

While we believe this exercise is valuable to lay a solid foundation about nonadherence

in preclinical learners, experiencing barriers to adherence may be even more impactful during clinical training. In the future, we plan to implement a similar prescription exercise for more advanced learners. They will be asked to take a comparable medication regimen to one of their medical or surgical patients, which often includes taking more than 10 different medications at specific times of the day. Learners will be asked to reflect on additional barriers to adherence created by such polypharmacy and gain an even greater appreciation of the patient experience.

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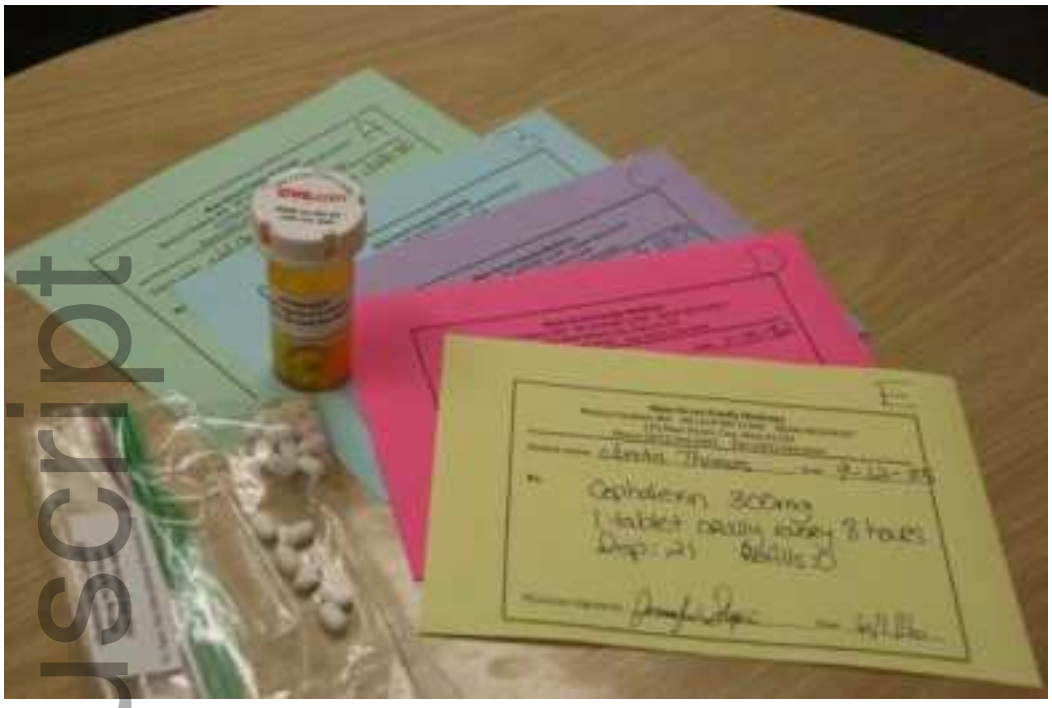
Figure Legends

Figure 1: Five Mock Prescriptions, Varied by Type and Number of Times Per Day

Figure 2: Line for the Mock Pharmacy



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