SKILLS-BASED EDUCATION

BRIEF

Educating Pharmacy Students About Underserved Populations Using Patient Speakers and Simulation Activities

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**Objective.** To assess the impact of the Patient Voices series on Doctor of Pharmacy (PharmD) students.

**Methods.** A series of patient speakers and integrated simulation activities focused on underserved populations, otherwise known as the Patient Voices series, was embedded into a pharmacy skills laboratory curriculum. First-year PharmD students’ self-ratings of confidence were compared on pre- and post-course surveys. Using evaluations from first-year introductory pharmacy practice experiences (IPPEs), student self-evaluation data were compared to preceptor evaluations of student performance. Open-ended responses to course evaluations from first- and second-year PharmD students and student reflections from third-year PharmD students were assessed using conventional content analysis to identify and characterize student perceptions.

**Results.** Significant increases were observed in first-year students’ confidence to show empathy (mean, 4.2 to 4.7) and to interact with patients from underserved communities (mean, 2.2 to 4.2). Preceptor ratings of students’ empathy were consistent with the students’ self-rated abilities, while students’ self-ratings on cultural sensitivity were higher than the preceptors’ ratings. Qualitative analysis of course evaluation surveys and reflections revealed common themes identified by students, such as understanding different perspectives, increased empathy for patients, and the value of including this content in the curriculum.

**Conclusion.** Student confidence to interact with patients from a variety of underserved populations increased following introduction of the Patient Voices series into the PharmD curriculum. Students perceived the series to be a valuable learning experience.

**Keywords:** empathy, skills laboratory, cultural awareness, underserved populations, communication, diversity

INTRODUCTION

The Accreditation Council for Pharmacy Education (ACPE) Standards 2016 and the American Association of Colleges of Pharmacy (AACP) Center for the Advance-ment of Pharmacy Education (CAPE) Outcomes address the critical importance of training in health disparities/cultural competence (HDCC) and cultural sensitivity to the education of future pharmacists. However, the depth and breadth to which these topics are included in the Doctor of Pharmacy (PharmD) curricula remains insufficient. Chen and colleagues uncovered that the average percentage of faculty teaching these topics at a US pharmacy schools was low, and that few US pharmacy schools provide their faculty with professional development opportunities related to HDCC. Several authors recommend teaching students about HDCC through longitudinal activities beyond the didactic curriculum, yet few curricular models exist that incorporate these topics into the longitudinal, skills-based laboratory curriculum. The authors acknowledge that differences in terminology (eg, underserved, marginalized, HDCC) exists throughout the literature and within the study instruments used. In this paper, the authors use the terminology consistent with the literature or data collection instruments being referenced.

The Patient Voices series at The Ohio State University College of Pharmacy was designed to ensure that both didactic and simulation activities are patient-driven and

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incorporate curricular content on underserved populations longitudinally. Studies across healthcare education have shown the benefit of narrative medicine, with patient speakers involved in didactic class material and student discussion activities, but literature regarding this approach in skills-based education is lacking. Use of authentic patients to teach awareness within elective courses has also been described. In contrast, the Patient Voices series incorporates learning objectives related to social determinants of health (SDOH) and caring for underserved communities into a required, skills-based laboratory course sequence that uses patient speakers and simulation activities and is taught across all three years of the didactic PharmD curriculum.

The purpose of this study was to evaluate the impact of the Patient Voices series by assessing first-year students’ change in confidence when interacting with patients of an underserved community. A secondary objective was to compare student self-ratings of introductory pharmacy practice experience (IPPE) performance to preceptor ratings at the end of the first year. An overall assessment of first, second, and third professional year (P1, P2, and P3) students’ perceptions regarding the impact of the Patient Voices series was a final outcome of this study.

METHODS

To align HDCC-related topics with the existing curriculum, this content was embedded into the Integrated Patient Care Laboratory (IPCaL) course sequence. Each week students in the IPCaL series attended one two-hour lecture and one three-hour skills laboratory session. During each laboratory, students completed two to five skills-based activities covering pharmacy topics relevant to multiple practice settings. Patient Voices was intended to enhance existing material without adding a significant workload to students or faculty.

The Patient Voices series followed a simple framework which expanded on existing curricular content to include a focus on HDCC. Students were introduced to a selected topic during the lecture period by discussing basic background information, common terminology, and existing health research. The class also included a discussion of actionable steps pharmacists could take to improve patient care, such as providing therapeutic support, creating an inclusive practice, participating in patient advocacy, and referring patients to appropriate community resources. During the same class session, a patient speaker described their personal experiences with the health care system to the students.

Patients were not recruited as experts on a given topic or to speak on behalf of a larger group; rather, the emphasis was on the patients sharing their personal experiences. Patients were given two prompts prior to speaking: “Please share some experiences you’ve had with healthcare, positive or negative,” and “What do you wish healthcare providers knew about you or your care?” Patients engaged with the class using any format that was comfortable for them, such as speaking in-person, via videoconference, or using prerecorded audio or video. To create a safe space for the patient speaker, students were expected to maintain confidentiality just as they would in practice. Speakers were recruited from a number of sources, including personal acquaintances of IPCaL faculty, leaders from a local cultural center, published authors on related topics, and members of local activist organizations. To determine the series topics, IPCaL faculty initially generated a list of curricular gaps related to HDCC. Final topic decisions were based on alignment with existing content and speaker availability. For a content map, see Figure 1.

Some existing IPCaL activities already aligned well with the Patient Voices series. For these activities, only lecture content was added. In one instance, a laboratory simulation during the third year included an encounter with a patient experiencing uncontrolled major depressive disorder. A small group discussion on properly responding to mental health crises occurred in the laboratory immediately following the encounter. To enhance this activity, a patient speaker was invited to the following lecture session to share their personal experiences with healthcare and law enforcement during an episode of acute psychosis.

In other cases, existing activities were adapted to align with a chosen topic. For example, lecture and laboratory activities involving paper cases of prescription drug monitoring program (PDMP) reports and a hands-on trial of naloxone devices were expanded to include new cases surrounding nonprescription dispensing of naloxone, controlled substance use (both prescription and recreational), and a focus on removing the stigma surrounding these topics. Small group fishbowl-style simulations were implemented (ie, students took turns individually speaking with a simulated patient while the rest of the group observed) allowing students to practice communication with the additional benefit of peer-learning. These simulations followed lecture periods during which patients had shared their experiences with invisible disability, addiction, and overdose. As another example, a transgender patient speaker was invited to the lecture and activities involving transdermal patches and bioidentical hormones. The associated simulation (patient counseling on use of a transdermal patch) was revised to include a patient who was starting gender affirmation therapy using a hormone patch.
To review the impact of the Patient Voices series, several sources of quantitative and qualitative data were analyzed retrospectively. Quantitative data included P1 student responses to IPCaL course surveys, and both student and preceptor evaluations of student performance on IPPEs. Qualitative data included open-ended responses from P1, P2, and P3 students on course evaluations and student reflections. The Ohio State University’s Investigational Review Board deemed this study as exempt.

The P1 students completed a pre-course survey in August 2018 prior to starting the IPCaL series in which they self-assessed their skills and confidence in several areas of pharmacy practice. No incentives for participation were given as this is a standard course activity. This anonymous survey included two questions that related to the Patient Voices series: confidence in their ability to show empathy, and confidence in their ability to counsel patients from marginalized communities. In April 2019, these same P1 students were invited to complete an anonymous post-course survey which included self-ratings of confidence on the same two questions. Student self-ratings used a five-point scale adapted from the levels of Entrustable Professional Activities (EPAs) in Pharmacy Practice.13

Performance data from P1 IPPE preceptor evaluations and student self-evaluations were also gathered for 2018-2019. Students completed 40 longitudinal hours in the spring semester concurrent with the Patient Voices series and 40 hours of an intensive, week-long experience at the same community pharmacy after the semester. Preceptors and students evaluated student performance within five days after completion of the intensive experience. Preceptors completed an online training module regarding use of EPA levels in student evaluations; students received written instructions only. De-identified IPPE performance data from two specific items were retrospectively examined: did the student “display cultural sensitivity” (with ratings on a five-point Likert scale), and did the student “demonstrate active listening skills and empathy” (with ratings on a four-point EPA scale). These items were chosen because they corresponded to the Patient Voices content. For complete text and scales, refer to Table 1.

Descriptive statistics were first used to analyze responses from students and preceptors. Course survey and IPPE evaluation data were summarized as mean and standard deviation, while course survey results at a specific level (such as EPA level 4 or 5) were presented as count (n) and frequency (%). Furthermore, student self-
ratings on the post-course survey were compared with student self-ratings on the pre-course survey, and IPPE preceptors’ ratings of performance were compared with student self-ratings of performance, using unpaired Student t tests. The percentage of students who self-rated their confidence as rating 4 or 5 on the pre- and post-course survey was compared using a chi-square test or Fisher exact test where appropriate. All statistical tests were two-sided and the significance was defined as \( p \leq .05 \). The SAS, version 9.4, software (SAS Institute) was used in this study.

Qualitative data were gathered from post-course student surveys administered at the end of spring semester for P1 students in April 2018 and 2019 and the end of fall semester for P2 students in December 2018 and 2019. These surveys were created for course quality assurance purposes. The P1 surveys included open-ended requests to identify the most valuable aspect of the course, provide suggestions for improvement to the course, and provide constructive comments regarding specific instructors. The P2 students were asked to provide constructive comments regarding the Patient Voices speakers or lecture content. Both the P1 and P2 courses offered students one bonus point for completion of the survey, as is routine practice in these courses. Open-ended responses were reviewed by study personnel, and responses that mentioned the Patient Voices series or content were added to the qualitative data set. Additional qualitative data were collected through
“minute papers” completed by P3 students in the spring 2019 and fall 2019 semesters. Following each speaker, P3 students were asked to reflect on what they had learned from the Patient Voices speaker and to keep their responses brief and professional.

Each qualitative data set (course evaluation surveys and minute papers) was analyzed by teams of three study personnel using conventional content analysis. Initially, one individual read all responses and created preliminary codes representing common themes. Preliminary codes were discussed by the team, with modifications made to the coding scheme based on consensus. Team members then independently read and assigned one or more codes to each response. The results of individual coding were compared by the team and discrepancies were discussed; final codes were assigned only if coding was unanimous following discussion. Finally, each team discussed the coding results and arrived at consensus regarding the themes that were most commonly present.

RESULTS

Of the 119 P1 students enrolled in the 2018-2019 academic year, 119 (100%) responded to the pre-course survey and 91 (76.5%) responded to the post-course survey. Students’ self-ratings of empathy on a five-point scale showed a significant increase from the beginning to the end of the P1 year (M = 4.2, SD = 0.9 vs M = 4.7, SD = 0.5; p < .001). Furthermore, the percentage of students self-rating 4 and above (4 = confident to perform independently, 5 = confident to teach others) significantly increased from 81.5% (97/119) to 96.7% (88/91) (p < .001). In IPPE performance, preceptor ratings of students’ empathy were consistent with student self-ratings on a four-point scale (M = 3.8, SD = 0.3 vs M = 3.8, SD = 0.4; p = .9).

Students’ self-ratings of their ability to counsel patients from marginalized communities (five-point scale) also significantly increased (M = 2.2, SD = 1.2 to M = 4.2, SD = 0.8; p < .001). Furthermore, the percentage of students self-rating 4 and above significantly increased from 15.1% (18/119) to 81.3% (74/91) (p < .001). In this case, IPPE ratings of cultural sensitivity from preceptors (five-point scale; M = 4.4, SD = 0.5) were lower than student self-ratings (M = 4.8, SD = 0.4; p < .001). Refer to Table 1 for data.

The P1 and P2 post-course survey responses (P1, n = 152/246 respondents, 61.8%; P2, n = 152/242 respondents, 62.8%) yielded 60 and 50 comments pertaining to Patient Voices, respectively. Content analysis of these comments identified six themes, which are listed in Appendix 1 along with representative quotes. Students found the series valuable and informative; specifically, students commented that speakers helped them develop empathy for patients and understand perspectives different from their own.

Three hundred thirty-six reflections from P3 course minute papers were completed for three topics: mental health (n = 105), medical emergencies (n = 112), and family caregivers (n = 119). Content analysis of these papers identified four to five common themes for each topic. Within all three topics, students described the importance of providing empathetic and compassionate care. Within two of the three topics (mental health and medical emergencies), students also noted the importance of connecting patients with resources. Additionally, students described how patient preferences with medication use may diverge from provider recommendations. A full list of common themes and representative quotes is provided in Appendix 1.

DISCUSSION

The model of self-efficacy theory supports the idea that a student’s confidence or efficacy expectation in their ability to provide care makes it more likely for them to incorporate these skills into practice. Student confidence in showing empathy and in interacting with patients from marginalized populations was shown to increase during the P1 year. Qualitative analysis also revealed themes related to the importance of empathy, understanding different perspectives, and the difficulties patients may face in obtaining care (stigma of mental illness, burden of caregiving, and inadequate training of first responders). Through the lens of the self-efficacy theory model, qualitative findings support students’ progression to incorporate learned skills from the Patient Voices series into future practice through reflection (outcome expectation) and recognition of importance in future practice (outcome value).

Preceptor ratings of student empathy support students’ self-assessed confidence levels. This data from IPPE evaluations demonstrates the practical application and transferability of Patient Voices activities to a real world setting. While preceptor ratings of student cultural sensitivity were lower than student self-ratings, both student and preceptor ratings averaged levels of “independent” or higher. Furthermore, the difference between preceptor ratings and student self-ratings regarding cultural sensitivity supports the need to continue longitudinal integration across the skills-based curriculum.

Several themes identified during qualitative analysis were used to make enhancements to the series over the subsequent two years. One such theme, regarding the balance and structure of the sessions, led to a change in the presentation order of large group material. Initially, all
didactic content was delivered first and the patient speaker’s portion was placed at the end of the lecture period. While this was a well-intentioned attempt to maximize class time available for patient speakers, this format resulted in unanticipated challenges to student wellbeing. As seen in student reflections on the mental health content, learning of the discrimination that occurs within health care can be surprising and discouraging to students, which may detract from the intention of the series. A discussion of actionable steps and the role of the pharmacist were moved to the end of each presentation with the intention of promoting a sense of empowerment in the pharmacy student’s ability to positively impact care. In addition, a list of supplemental resources for the students and their patients was also included in this discussion, the value of which was identified as another common theme in the study data. Furthermore, in response to a small number of students who described having a strong emotional response to a session, topic titles are now included on student schedules and relevant content warnings provided prior to delivery in order to offset the emotional burden faced by students with related personal experiences.

The request for additional content was another specific qualitative theme that informed the development of subsequent iterations of the Patient Voices series. For example, a session regarding the integration of faith into patient healthcare was added to the P2 year. A local community leader spoke about the topic, then students worked through insulin management cases that were modified to include patients requiring insulin adjustment in anticipation of faith-based fasting. A Student Voices session was also created during which students are offered an opportunity to suggest topics for future discussion and share their own experiences with health disparities. As further evidence of perceived value, several students requested to contribute to future series development. As a result, some former students have returned as patient speakers during subsequent iterations of the series. Intersectionality was planned for inclusion as the final topic; however, implementation was delayed because of the COVID-19 pandemic.

Reviews of HDCC within pharmacy education have demonstrated the need to increase coverage of these topics across curricula. Chen and colleagues found that faculty may not have the needed training or expertise to present such topics; as illustrated herein, patient speakers with lived experience can help fill in these knowledge gaps. The use of patient speakers and narrative medicine, when reviewed across medical and nursing education, has yielded a “positive, measurable, and replicable effect” on student performance data from activities such as simulated patient encounters.7,10 Additionally, a majority of students perceived the series as a valuable addition to their education, with comments such as, “It always makes me realize that our patients are real people with so much more going on [than] the prescriptions we see.”

This innovation is adaptable to other institutions and can include a diverse array of topics. Previous research has identified that longitudinal intervention can increase retention.7,17 By adding simulation activities, students may further develop skills and confidence. Existing curricula and activities can be adapted to include many types of patients, avoiding the need to create entirely new simulations. Varying delivery methods allow the flexibility to accommodate a patient speaker’s schedule and location. An adaptable framework, such as that used with Patient Voices, can provide a means to longitudinally integrate patient speakers and simulation activities.

This study has some limitations. The student data presented here were initially gathered for quality improvement and planning of subsequent courses. Thus, students’ comments and preceptor ratings, both subjective measures, represent a point-in-time “snapshot” of student confidence and performance. While the evidence of student learning and growth is encouraging, a rigorous evaluation would ideally include a comparator group. Additionally, although student self-ratings demonstrate improvement from pre- to post-course surveys, several confounding factors could have contributed to this, including the typical improvement seen over the course of the P1 year aside from this intervention. Other limitations include implementation at a single institution and the use of non-validated instruments of measurement, although three evaluation scales were based on EPA levels of trust. Assessments of students’ ability conducted by faculty and preceptors at multiple time points would be needed to gain a more thorough understanding of the impact of this approach. Further research should include student performance data from activities such as simulated patient encounters.

CONCLUSION

The Patient Voices series is an innovative approach to educating students with regards to social determinants of health within the framework of a skills-based laboratory curriculum in order to address an identified need for longitudinal integration of health disparities/cultural competence. Doctor of pharmacy students’ confidence to interact with patients from underserved populations increased following the introduction of the Patient Voices series, and students perceived the series to be a valuable learning experience.

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Appendix 1. Common Themes: P1 and P2 End-of-Course Surveys and P3 Minute Papers in Response to the Patient Voices Content in a Skills Laboratory Course Sequence

| Theme                                                                 | Representative Quotes                                                                 |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Importance/value of Patient Voices content in the curriculum         | “It is important considering in the real world we will be confronted by patients of different backgrounds and stories and we need to learn how we can allow these patient[s] to be vulnerable without them feeling ashamed for who they are.” |
|                                                                      | “These lectures were very interesting and something we as future healthcare providers needed to hear about.” |
| Informative/increased exposure to underserved patient populations     | “I enjoyed the patient voices and all the different cultures [he] exposed us to so that we can be successful in interactions with all kinds of people in the real world.” |
|                                                                      | “I thought the racial disparities was very informative and gave more insight for students.” |

(Continued)
### Appendix 1. (Continued)

| Theme                                      | Representative Quotes                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Understanding different perspectives       | “Nobody else gives you this insight to what it’s like living with various conditions or being different in the eyes of the world so it really opens your mind.”<br>“The guest speakers were really interesting to listen to. It offered fresh and unique perspectives on pharmacy that I previously was not as familiar with.”                                                                                                                                               |
| Increased empathy for patients             | “I really appreciate the different perspectives that they brought to the course and felt like I learned how to be empathetic and how to make sure all patients feel valued and respected.”<br>“We are dealing with real patients who needs our empathy and compassion more than anything else and I think patient voices helps us realize that.”                                                                                     |
| Request for additional content in the Patient Voices series | “The Patient Voices series was an amazing idea. I hope to see more of that in the future.” <br>“I really enjoyed the Patient Voices sessions you presented and wish we could've had one every week.”                                                                                                                   |
| Restructure content to provide balance     | “I think that although it is good to have a background on the topic we are talking about, if the background lasts for too long I get lost on the purpose, for example the Racial Disparities in Emergency Care lecture. The content was good but it took too long to segue into the actual video and made me lose focus in the beginning.”<br>“I do think that the small group activities and patient care series could have been given more depth if time had allotted, but I understand why more time couldn't be devoted to these sessions.” |

### P3 Minute Papers

**Topic: Mental Health (n=105)**

| Importance of/need for appropriate training and response to mental health emergency | “As healthcare providers, I wish we were trained in de-escalating or responding to these types of events.”<br>“Law-enforcement and healthcare workers need training to better help patients with mental illness. We want patients to feel comfortable to come to us for help it is also important that we know or have resources to help them.” |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Increased compassion/understanding/empathy for patients | “Hearing the patient perspective made me realize the importance of having empathy for patients experiencing a psychotic episode.”<br>“Sometimes in any encounter we need to just step back from the next step/guidelines/lab values, and just really engage with our patients to see where they are.”                                                                                   |
| Importance of/challenge of connecting patients to resources | “I was reminded about the importance of recognizing mental illness in our patients and being proactive about offering resources ... to help bridge the disparities they face in access to care and improve their linkage to care.”<br>“I feel that as a future pharmacist I make it a priority to take extra time with my patients that have mental health conditions to ensure they are comfortable with their treatment and that I can help connect them to resources ...” |
| Medication non-adherence may be a patient preference | “Pharmacist[s] usually focus on whether the patients are taking the meds instead of why are some patients not willing to take the medications.”<br>“I learned today how hard it is for someone with bipolar disorder to stay on the medications, because it can make them feel ‘dull’ or ‘not themselves.’”                                                                                           |
| Stigma associated with mental illness      | “Mental health is an underserved realm of healthcare. Still surrounded by a lot of stigma. There is a lot that can be done by healthcare professionals to decrease the stigma...”<br>“Mental health is a big issue within the US and while stigma has gone down, that’s one of the biggest barriers...”                                                                                                                                 |

(Continued)
### Appendix 1. (Continued)

| Theme | Representative Quotes |
|-------|------------------------|
| **Topic: Medical Emergencies (n=112)** | |
| Lack of resources/importance of a formal support system | “I will also make an effort to familiarize myself with the resources available for grieving family members at my institution so I can refer them to someone who can help.” “I learned about how so many people have a lack of resources when it comes to dealing with a traumatic event after-the-fact. I don’t think many people think about helping the families of people who die and I think that’s a big need in the community.” |
| Grief takes time/grieving is a long-term process | “Something that I will take away from this presentation is the fact that a grief is lifelong.” “Grief is a forever thing that shifts and changes.” |
| Increased compassion/understanding/empathy for patients | “Compassion and empathy is essential when hearing their grief and giving them time.” “The patient’s story was very touching to me as it underscores the importance of being able to show empathy as healthcare professionals.” |
| Medication is not always best | “Hearing a patient say that she wanted to experience those emotions rather than push them away with medicines is striking to me…” “Not everyone wants to be ‘fixed’ with medications and as pharmacists we should be thoughtful and not automatically suggest medications.” |
| Everyone grieves differently | “Grief does not look or feel the same for every person, so it is important to listen to those who are dealing with loss in their lives.” “People experiencing grief in very different ways and we need to try to meet them where they are.” |
| **Topic: Caregivers (N=119)** | |
| Importance of compassionate care/empathy/understanding | “I never realized just how important it is to have empathy and compassion.… hearing first-hand what patients go through every single day to care for their loved ones really made me realize it doesn’t take much effort to be kind.” “I learned that compassion and empathy are just as important as knowing your clinical knowledge. Taking the few extra moments to ensure that the caregivers are comfortable and understand can greatly impact the caregiver.” |
| Difficulty/burden associated with caregiving | “I learned being a caregiver is a very difficult! It can drain the person emotionally, mentally, and even financially.” “Family members also go through a lot of difficulty with both the emotional toll and the struggle with potentially complex drug regimens.” |
| Value of caregiver to healthcare team | “Caregivers are sometimes the best source of information & should be respected and utilized.” “I also learned that it is important to incorporate the caregiver in treatment options and for questions you may have for the patient because they may know better than the patient does.” |
| Importance of self-care | “I was reminded today that self-care is important to ensure I provide the best patient care.” “Overall, I learned that self-care should be a high priority outside of work. You must take care of yourself to take care of others.” |

P1 = first professional year, P2 = second professional year, P3 = third professional year