Laboratory Activities with Real Patients: Modifications to Incorporate a Telemedicine Experience

Dominick J. Salvatore, Pharm.D., BCPS and Maureen E. Knell, Pharm.D., BCACP

University of Missouri-Kansas City School of Pharmacy

Introduction

Background:

- At the University of Missouri – Kansas City School of Pharmacy (UMKC-SOP), the Pharmacotherapy curriculum consists of 18 credit hours divided amongst three courses. Pharmacotherapy II and III have one session each week dedicated to students completing patient cases (known as Case Recitation Lab) over disease states that were previously covered in class.
- Each Pharmacotherapy didactic course has a corresponding Applied Skills Lab, where students are afforded opportunities to apply the content learned in the classroom in various active learning activities, in faculty facilitated small groups.
- ACPE Standards 2016 include the concept of preparing students to provide patient-centered care following the Pharmacists' Patient Care Process (PPCP).[1,2] Utilizing this process provides pharmacists with a uniform approach to patient care.
- The Patient Partners Program, a patient-led educational initiative, originally funded by a series of pharmaceutical companies in the 1990's, was initially developed to instruct medical students on proper musculoskeletal examination techniques. Because of the opportunities for students to engage with "real patients", the program was adapted across many healthcare professions and multiple universities. While the program is no longer funded by the pharmaceutical industry on a national level, several of the programs have continued for educational offerings regionally across the United States and Canada.
- Patient Partners have historically participated in an in-person UMKC-SOP Pharmacotherapy III interactive learning activity focused on students, working in small groups, applying interviewing skills to assess and collect patient information and applying knowledge to develop treatment plans for an assigned patient. Past student surveys evaluating the experience have been overwhelmingly positive and student comments have appreciated the authenticity of working with "real patient" with focus on managing a chronic medical condition.

- As a result of the COVID-19 pandemic, the lab was modified from an in-person activity to a telemedicine encounter, which provided the opportunity to integrate the ACPE Appendix 1 required element of engagement with technology-based tools for communication and the impact they have on patients and the health care environment.

Objectives:

- Real patients with arthritis were incorporated into a lab activity to meet the Accreditation Council for Pharmacy Education (ACPE) Standard 10.8 for utilizing the Pharmacists' Patient Care Process (PPCP). The lab was modified from in-person to a telemedicine encounter, which allowed integration of the ACPE Required Element of engagement with technology-based tools. The objective was to assess the impact of the telemedicine transition on students' perceptions by comparing survey results before and after the change.

Methods

- The Patient Partners were incorporated into a daylong interactive small group activity intended to allow pharmacy students to engage in areas of PPCP process during a two-part Applied Skills Lab/Pharmacotherapy Case Recitation. Small groups of students across three campuses worked with an assigned patient with arthritis from the Patient Partners Program. Third-year students completed this activity in-person from 2018-2019 and via telemedicine in 2020-2022. Student groups consisted of 4-15 students based on the availability of the patients and room size. Smaller groups were utilized when the activity was conducted using telemedicine. The first half of the activity focused on the collection and assessment process of PPCP. Student groups focused on working together to develop an interview plan and then completed an interview with their assigned Patient Partner to collect and assess current medications, medication use history, and pertinent health data. Then all patients participated in an interview and discussion panel, conducted for the entire class with focus on patients' use of non-pharmacotherapeutic treatments, and sharing patient insights into their rheumatologic disease. Afterwards, student groups applied the assessment and planning steps of the PPCP to complete a Patient Health and Medication-Related Action Plan and an Arthritis Treatment Plan.
- After the activity, students were asked to complete a survey. The survey questions were developed to evaluate students self-perceived confidence and ability to complete elements of the PPCP. Additional survey questions were included to assess other patient engagement objectives for the lab session. All surveys were completed by students in the REDCap® web application.
- Survey data was collected using a five-point Likert scale. The survey results were analyzed for both time periods using computed sample proportions of strongly agreed or agreed (SA/A)=1 and 95% CI (exact method).
- This project received an exempt determination from the UMKC IRB as secondary research on data collected for quality improvement purposes.

Outcomes

- 429 students completed the survey (n=221 in-person; n=208 telemedicine). Students were more confident in their interview skills after the activity. The in-person proportion that SA/A was 0.869 (95% CI 0.817-0.910),while the proportion was 0.885 (95% CI 0.833-0.925) in telehealth student responses.

Question	2018-2019 Value (n=221)	2020-2022 Value (n=208)
I was able to identify key questions to ask my arthritis patient through information provided in the Rheumatoid Arthritis/Osteoarthritis Pharmacotherapy Class and the Applied Skills Lab	Proportion: 0.986 95% CI (0.961-0.997)	Proportion: 0.976 95% CI (0.945-0.992)
I am more confident in my interviewing skills after completing the Patient Partners in Arthritis Experience today	Proportion: 0.869 95% CI (0.817-0.910)	Proportion: 0.870 95% CI (0.817-0.913)
I am more confident in collecting patient information gathered in a patient interview after completing the Patient Partners in Arthritis Experience today	Proportion: 0.919 95% CI (0.874-0.951)	Proportion: 0.885 95% CI (0.833-0.925)
I gained an appreciation of the challenges patients face when dealing with chronic arthritis after completing the Patient Partners in Arthritis Experience today	Proportion: 0.986 95% CI (0.961-0.997)	Proportion: 0.976 95% CI (0.945-0.992)
I gained insight from the Patient Partners in Arthritis today that I will share in the future with my arthritis patients	Proportion: 0.968 95% CI (0.936-0.987)	Proportion: 0.986 95% CI (0.958-0.997)
I gained increased awareness for considering the patient's input when making patient care recommendations	Proportion: 0.964 95% CI (0.930-0.984)	Proportion: 0.966 95% CI (0.932-0.986)
I was able to apply my pharmacotherapeutic knowledge in the Patient Partners in Arthritis Experience to complete a Health and Medical-related action plan for the patient	Proportion: 0.946 95% CI (0.907-0.972)	Proportion: 0.938 95% CI (0.896-0.966)
I was able to apply my pharmacotherapeutic knowledge in the Patient Partners in Arthritis Experience to complete a treatment plan if my patient were to experience worsening disease activity	Proportion: 0.919 95% CI (0.874-0.951)	Proportion: 0.938 95% CI (0.896-0.966)
I enjoyed the opportunity to work with real patients over standardized patients such as those used in OSCEs	Proportion: 0.982 95% CI (0.954-0.995)	Proportion: 0.952 95% CI (0.913-0.977)
The Pharmacotherapy III Applied Skills/Recitation lab has helped me to become more confident in conducting a telemedicine visit in the future	N/A	Proportion: 0.885 95% CI (0.833-0.925)
I believe there is a role for telemedicine in providing pharmacy-related patient care.	N/A	Proportion: 0.976 95% CI (0.945-0.992)

Conclusions

- Overall, a large majority of students SA/A that the Patient Partners activity enhanced their confidence and experience in the collecting, assessing, and planning processes of the PPCP in both the in-person and telemedicine activities.
- Overwhelmingly, students strongly agreed/agreed that engagement with real patients increased their self-perceived confidence in interviewing patients, expanded their insights into challenges faced by patients with chronic medical conditions and increased their awareness of the importance of gaining patient input which would benefit their interactions with future patients.
- The telemedicine experience increased students' perceived confidence in the ability to conduct future telemedicine visits.
- Since Schools of Pharmacy may already invest time and resources in training standardized patients, it may also be of value to develop training and engagement activities using real patients or to design cases with input from real patient that include sharing of patient perceptions and experiences.
- Conducting these activities electronically not only provided students with a telemedicine experience but provided patients with flexibility. Patients with concerns related to mobility or infectious exposures in patients with a high level of risk were still able to participate.
- Further research should be conducted to evaluate how standardized activities with real patients affects student performance on OSCEs and readiness for APPEs.

References:

1. Accreditation Council for Pharmacy Education. Accreditation standards and key elements for the professional program in pharmacy leading to the doctor of pharmacy degree. Standards 2016. https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf Accessed: May 29, 2023.
2. Joint Commission of Pharmacy Practitioners. Pharmacists' patient care process. http://www.pharmacist.com/sites/default/files/files/PatientCareProcess.pdf. Published May 29, 2014. Accessed: May 29, 2023.