MOVING FROM INJUSTICE TO EQUITY: A TIME FOR THE PHARMACY PROFESSION TO TAKE ACTION

RESEARCH

Implementation and Evaluation of a 10-Week Health Equity Curriculum for Pharmacy Students

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Objective. To describe a health equity curriculum created for pharmacy students and evaluate students' perceptions and structural competency after completion of the curriculum.

Methods. A health equity curriculum based on transformative learning and structural competency frameworks was implemented as a 10-week mandatory component of the pass-no pass neuropsychiatric theme for second year pharmacy students. Each week, students reviewed materials around a neuropsychiatric-related health equity topic and responded to discussion prompts through asynchronous forums or synchronous online video discussions. The effectiveness of the health equity curriculum was evaluated through assessment of structural competency through a validated instrument, an objective structured clinical examination (OSCE), and a questionnaire.

Results. All enrolled second year pharmacy students (n=124) participated in the health equity curriculum. Of the 75 students who completed the structural competency instrument, 46 (61%) were able to identify structural determinants of health, explain how structures contribute to health disparities, or design structural interventions. Ninety-six of the 124 students (77%) were able to address their OSCE standardized patient's mistrust in the health care system. Thematic analysis of student comments elucidated three themes: allyship, peer connection, and self-awareness. Students rated asynchronous discussion forums as significantly less effective than online video discussions and patient cases for achieving curricular objectives.

Conclusion. A mandatory curriculum delivered remotely throughout the didactic pharmacy curriculum using a blended learning approach was an effective way to incorporate health equity content and conversations into existing courses. Implementation of this or similar curriculums could be an important step in training pharmacy students to be advocates for social justice.

Keywords: health care disparities, social determinants of health, education, pharmacy

INTRODUCTION

Health disparities are preventable factors that exist across racial and ethnic groups and obstruct individuals from achieving optimal health outcomes.¹ Implicit biases of health care providers have been shown to affect health care outcomes of minority patients and are likely a significant contributor to health disparities.^{2,3} The Accreditation Council for Pharmacy Education (ACPE) and Center for the Advancement of Pharmacy Education (CAPE) require that pharmacy students be able to "recognize social

determinants of health to diminish disparities and inequities in access to quality care," but provide little to no guidance on how to do this.^{4,5} With the continuing racial injustices that have been perpetuated and highlighted by the COVID-19 pandemic, there has been a long overdue call to educate pharmacists to be advocates for social justice.⁶

Most of the literature in pharmacy education around health disparities has centered on cultural competency or cultural humility, which can promote categorization of patients into groups and minimize the importance of other social and structural determinants of health.^{7,8} A new concept, structural competency, provides a framework for teaching students about structural causes of health disparities.⁹ The framework consists of five skill sets:

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recognizing structures that shape clinical interactions, developing extra-clinical language of structure, rearticulating “cultural” presentations in structural terms, observing and imagining structural interventions, and developing structural humility.⁹ Structural competency has been implemented in some medical and nursing curricula, but Avant and colleagues’ study is the only example of a structural competency curriculum in pharmacy students.¹⁰⁻¹³

To promote structural competency in pharmacy students, we piloted a health equity curriculum at the University of California, San Francisco School of Pharmacy based on Sukhera and colleagues’ transformative learning framework for reducing implicit bias in health care providers.¹⁴ Their framework describes a cycle of a disorienting experience, critical reflection, acquiring skills, and role modeling new behavior through sharing and dialogue with peers to reduce implicit bias.¹⁵ As a consequence of the COVID-19 pandemic, this curriculum was conducted completely remotely. The purpose of the curriculum was to teach students to identify and recognize structural causes of health disparities, design interventions to reduce structural causes, and engage in equitable, civil, and compassionate discussions about systemic racism and implicit biases. The objectives of this study were to describe student perceptions of the health equity curriculum at UCSF School of Pharmacy, determine which activities of the curriculum were most effective, and evaluate students’ structural competency after completion of the curriculum.

METHODS

Curriculum Design

The health equity curriculum was a 10-week mandatory component of the existing pass-no pass neuropsychiatric theme for second year pharmacy students and consisted of approximately one to two hours of student work per week. The neuropsychiatric theme was chosen as the context in which to introduce the health equity curriculum as this was the longest theme in the didactic curriculum and directed by the two faculty who were leading the development and implementation of the curriculum. To promote a safe space and comradery in the remote environment, the students were split into 21 longitudinal health equity groups of five to six students that were evenly distributed based on self-identified gender and ethnicity. To foster productive discussions and provide timely feedback, faculty recruited 13 second year students with experience in facilitating peer small groups or with a vested interest in health equity topics to serve as small-group facilitators. Additionally, five senior pharmacy students who were teaching assistants for the Applied Patient Care Skills course facilitated student small group discussions. Groups

that were not assigned to a student or teaching assistant facilitator were monitored by the faculty leads. To provide a confidential and safe space for discussion, students and facilitators could only access their own groups, and with the exception of the two faculty leads, other UCSF faculty did not have access to these student groups.

The health equity curriculum used a blended learning model conducted in a remote environment.¹⁶ There were three main components: didactic material, asynchronous online small group discussion, and small group synchronous Zoom (Zoom Video Communications) discussions. Most of the material and discussions were delivered and conducted asynchronously because of constraints on available synchronous time within the course schedule. The asynchronous material and discussions were housed on the Collaborative Learning Environment, a component of Moodle, version 3.9.3 (www.moodle.org). All videos were uploaded to and provided via Vialogues, version 2.1.5 (www.vialogues.com), a platform which allows students to leave comments at specific points (timestamps) in the video and reply to other students’ comments. Given that this curriculum occurred during the neuropsychiatric theme, special care was given to identify topics related to health disparities in neurocognitive and psychiatric disorders. Activities and discussion prompts were designed using the transformative learning framework designed by Sukhera and colleagues.¹⁴ The topics chosen, materials used, activities, and assignments for the curriculum are provided in Table 1.

For each week of didactic material, students were given discussion prompts and one to two students in each subgroup were responsible for leading the group discussion on the Collaborative Learning Environment form. The discussion prompts asked students to reflect on and apply concepts covered in the didactic materials on patient cases from their Applied Patient Care Skills course, which involved specific health disparities related to the content for that week. Each student was required to post at least one reply for each discussion topic. To allow the students to engage in health equity topics in real time, three synchronous Zoom discussions were held throughout the curriculum: one during the two-hour didactic introduction to the curriculum, a one-hour discussion at the halfway point of the course, and a two-hour reflection session at the end of the curriculum. The students also participated in a session of the Applied Patient Care Skills course that focused on responding to and addressing microaggressions and providing patient-centered care to a patient with structural barriers to health.

Curriculum Evaluation

This was a mixed methods study that was approved by the UCSF Institutional Review Board as exempt. To

Table 1. Content of a Health Equity Curriculum Incorporated Into an Existing Course in a Doctor of Pharmacy Curriculum

Topic	Learning Materials	Example Discussion Prompts/Assignments
Introduction to Structural Competency and Intersectionality	Two-hour synchronous Zoom lecture provided by faculty on structural competency concepts Three 10-15 breakout sessions in Zoom small groups for setting ground rules and case discussion Model videos from faculty	Establish 5-7 ground rules for your longitudinal small groups. Create and upload a short video reflecting on your background and personal experiences and how they may impact your view on race/ethnicity and privilege
Cultural and Structural Influences on Mental Health	TED talk video on “Black Mental Health Matters” NPR clip “Asking Mom: ‘Did You Know I was Depressed in High School?’” Skills patient case with Asian-American patient with depression with reluctance to engage in psychotherapy due to cultural beliefs	How are these individual’s experiences similar? How are they different? As you reflect on these two pieces, feel free to share examples in which have you seen institutional racism and cultural stigma impact access to mental health care. As a pharmacist, what can you do to address the social and cultural barriers experienced by your Skills patient, Timothy Nguyen?
Structural Stigma of Mental Health and LGBTQ Populations	Pre-recorded lecture created by faculty on Structural Stigma Optional: <i>The Atlantic</i> article on “Keeping the Mentally Incompetent from Voting” Skills patient case with self-identified lesbian patient with depression	What structural stigma may your Skills patient, Samantha Smith, who identifies as lesbian, experience? How might that change if she lived in a state/community with high LBGTQI bias? As a pharmacist, what can you do to address the structural stigma experienced by your Skills patient, Samantha Smith?
Fostering Effective Discussions	One-hour small group synchronous Zoom discussions	Write down a situation you have experienced where it was difficult to address health equity. What makes you uncomfortable discussing health disparities and racism? When you feel uncomfortable, what assumptions and ideas underlie your discomfort?
Mental Health and Persons Experiencing Homelessness	John Oliver video on Mental Health Optional: <i>Case Studies in Social Medicine</i> article on medicalization and de-medicalization Skills patient case with homeless patient admitted for inpatient treatment of psychosis	What are your own perceptions of individuals experiencing homelessness? Where do these perceptions come from? How might well-meaning pharmacists provide inequitable mental health care to minority and non-minority patients? Relate what you have learned from the John Oliver clip to your Skills/Conference patient, Arthur
Choose Your Own Adventure	Student self-identified topics, materials, and prompts Examples: Transgender mental health, health inequities and chronic pain, health disparities during COVID-19, racial disparities in clinical trials	In your groups, decide on two topics around Health Equity you want to explore further. Take one topic, find a good source (podcast, video, article, etc.) and create 1-2 prompts for that topic Give the source and prompt(s) to the other half of your group, and you will respond to the prompt(s) they have created for you.
Reflection and Action	Two-hour facilitated small-group Zoom discussion	Describe where and how you feel privileged or marginalized in patient care, health

(Continued)

Table 1. (Continued)

Topic	Learning Materials	Example Discussion Prompts/Assignments
	Two-hour Zoom APCS session on how to respond to/address microaggressions and providing patient-centered care to patients with structural barriers to health	advocacy, and other (non-clinical) Describe an experience you've had in the Health Equity curriculum or around health equity in a pharmacy setting that challenged you and made you realize you have room for personal growth when it comes to providing equitable health care. What preconceived notions did your experience challenge? Where did these preconceived notions come from? How could these preconceived notions have resulted in inequitable care? How do you wrestle with this? What will you do as future pharmacists to address this? How will you stand up for your patients who are being marginalized?

Abbreviations: APCS=Applied Patient Care Skills

evaluate students' structural competency, the authors created and validated an instrument based on Metzl's five structural competency skillsets, heretofore referred to as the Structural Competency Instrument.^{11,17} The Structural Competency Instrument used in this study was based on Metzl's Structural Foundations of Health instrument and redesigned using Wilson's construct modeling approach to measure domains of structural competency.^{17,18} The construct map and the Structural Competency Instrument were refined through consultation with measurement experts at the University of California, Berkeley. Using

the measurement model, a construct map was created to map Metzl's structural competency skillsets to levels of competency (Table 2). The Structural Competency Instrument was initially piloted with the 13 student facilitators and produced a reliability of 0.55. The instrument was then further refined through rewording of prompts and creation of items that more specifically targeted domains and demonstrated an improved reliability of 0.79 and Spearman's rho of 0.81. Table 3 provides representative Structural Competency Instrument items and their corresponding structural competency domains. Students were

Table 2. Structural Competency Levels of Second Year Doctor of Pharmacy Students as Assessed Using the Structural Competency Instrument

	Structures That Shape Clinical Interventions	Extraclinical Language of Structure	Structural Rearticulation of Cultural Presentations
Unaware	Unable to identify structural determinants of health	Does not use extraclinical language	Unable to identify "cultural" determinants of health
Recognizing Cultural			Identifies "cultural" determinants of health
Structural	Identifies structural determinants of health		
Applying	Explains how structures contribute to patient's specific health disparities	Uses extraclinical language correctly	Rearticulates a patient's specific cultural considerations as structural
Imagining Structural Interventions			
Imagining	Designs structural interventions on a policy/research level Designs structural interventions on a clinic/institutional or community level Designs structural interventions on an individual/interpersonal level		

Table 3. Structural Competency Instrument Items and Corresponding Structural Competency Domains

Domain	Item
Extracurricular language of structure	Define structural violence. Provide an example of a patient who has experienced structural violence. Be specific in describing the situation.
Structures that shape clinical interventions	According to the American College of Cardiology, rates of hypertension control are significantly lower in Hispanic adults (47.4%), non-Hispanic Asians (43.5%), and non-Hispanic Blacks (48.5%) compared to non-Hispanic whites (55.7%). What are possible cultural and structural causes for this disparity? Please explain your answer.
Structural rearticulation of cultural presentations	Imagine you are on your ambulatory care APPE in a Diabetes clinic. One of the clinic providers is providing a brief topic discussion on diabetes management and states “Hispanic patients are more likely to have uncontrolled diabetes because their diet typically consists of foods high in fat and calories such as tortillas and pork. They also hold lots of family celebrations which may involve social pressure to overeat.” Do you agree with this statement? Why or why not?
Structural rearticulation of cultural presentations	MB, a 44-year-old man with chronic back pain, diabetes, hypertension, asthma presented to a Philadelphia free clinic with an acute exacerbation of back pain triggered by carrying heavy loads of trash at work. A premedical student acting as his health care advocate accompanied him.
Structures that shape clinical interventions	MB was hesitant to seek health care because he had no health insurance and mistrusted institutions as a result of his extensive negative experiences with the criminal justice system in both his native Puerto Rico and the mainland US. He has a history of incarceration. He seemed nervous in the clinic which had no Latino staff and was located in a middle-class neighborhood far from his home. The advocate reassured him in Spanish that the doctor was trustworthy and urged him to speak frankly about his health problems, including his challenges in obtaining medication. MB reported that during recent back pain exacerbations he occasionally resorted to purchasing one or two 5-mg oxycodone tablets off the street on the block where he lived. The physician gave MB ibuprofen and a prescription for five 5-mg oxycodone tablets, enrolled him in the clinic’s diabetes and hypertension programs, and scheduled a follow-up visit.
Imagining structural interventions	MB never filled the prescription and did not return to the clinic despite repeated attempts by the advocate both in person and over the phone. MB reported that his pain was tolerable and he was managing his diabetes, hypertension, and asthma with family members’ medications.
	Which THREE of the following factors are most important for explaining MB’s presentation and outcome? Indicate the most important, second most important, and third most important factor. ^a
	What might improve care and outcomes for MB and patients like MB and why? Be as specific as possible.

^a Factors: Access to healthcare, cultural background/beliefs, economic policies, gender bias, genetic predisposition, health delivery system, health insurance, health literacy, individual behaviors/lifestyle choices, individual or family income, institutional racism, medical/psychiatric history, medication adherence, physician bias, social policies, socioeconomic position, substance use

asked to complete the structural competency instrument at the end of the health equity curriculum. The Rasch measurement model was used to examine instrument validity and standard setting for the competency levels.^{18,19} Wright maps and the statistical analysis used to validate the instrument were conducted using Berkeley Assessment System Software (Berkeley Evaluation and

Assessment Research). A copy of the Structural Competency Instrument is available upon request.

Students were surveyed regarding their perceptions of the curriculum via Qualtrics immediately after completion of the course. The questionnaire included three open-ended prompts on what students learned about themselves, what they learned from their peers, and what changes they

would make in the future based on what they learned in the health equity curriculum. A thematic qualitative analysis was conducted on the student comments. Two investigators (SH and RT) independently read one-third of the excerpts to identify initial codes. The investigators then met to discuss codes and create an initial codebook. They then independently coded all of the excerpts with the initial codebook and met to review coding, reconcile differences, and discuss new/redundant codes. All coding and qualitative analysis of code patterns were conducted in Dedoose. In the questionnaire, students used a five-point Likert-type scale (range: 1 = not at all effective to 5 = extremely effective) to rate the effectiveness of the Collaborative Learning Environment discussions, Zoom discussions, APCS patient cases/sessions, and overall curriculum in their ability to: reflect on and recognize their own biases, discuss topics around health equity, communicate with and provide equitable care to all patients, and design interventions to reduce health disparities. All questionnaires that included at least one response to one of the items were included in the analysis. An analysis of variance with post-hoc Bonferroni correction for multiple comparisons was conducted to evaluate differences between curricular aspects and objectives. All questionnaire statistical analyses were conducted in SPSS Statistics, version 26 (IBM).

To evaluate students' ability to apply health equity communication techniques, students participated in an objective structured clinical examination (OSCE) at the end of the course. One of the OSCE cases involved interacting with a patient with significant distrust in the health care system as a result of structural factors (eg, institutional racism, discrimination, access to health care). Students were evaluated by UCSF faculty and residents trained to serve as standardized patients. Students were scored on whether they were able to address the patient's concerns about the health care system using a dichotomous score (ie, yes or no). Students were also scored on their ability to respond to the patient's needs and feelings on the following five-point Likert-type scale: 1 = unacceptable, 2 = borderline, 3 = acceptable, 4 = strong, and 5 = exceptional. Descriptive statistics for both OSCE items were calculated in SPSS.

RESULTS

In total, 124 second year pharmacy students participated in the health equity curriculum. One-hundred eleven students (90%) completed the demographic items on the questionnaire. Of these students, 58% identified as Asian/Pacific Islander, 19% as White/Caucasian, 7% as Hispanic/Latino, 6% as multiracial, 4% as other, and 3% as

Black/African American. Of questionnaire respondents, 68% identified as female, 24% as male, 1% as transgender female, and 1% as gender non-conforming.

The 13 student facilitators were excluded from the Structural Competency Instrument analysis given their strong interest, participation in the instrument pilot, and potential high proficiency in structural competency. Of the 111 students surveyed, 75 (68%) of students completed the Structural Competency Instrument. Of these students, 13 (17%) were at the Unaware level, 16 (21%) were at the Recognize Cultural level, 21 (28%) were at the Recognize Structural level, 16 (21%) were at the Applying level, and 9 (12%) were at the Imagining level (Table 2) after completing the health equity curriculum.

One hundred four of the 124 students (84%) provided responses on the questionnaire regarding what they learned about themselves, what they learned from their peers, and what they would change as a result of completing the curriculum. Three primary themes were identified across all three prompts: allyship, peer connection, and self-awareness. The first theme, allyship, encompassed actions and approaches consistent with being an ally for marginalized groups. This included being an ally in the context of patient care by advocating on behalf of patients and providing equitable care. An additional subtheme under allyship was speaking up or starting conversations around inequities. The second theme, peer connection, encompassed connecting with peers through an appreciation of discussions, descriptions of shared experiences and goals with classmates, and recognizing both similar and differing perspectives and viewpoints. The third theme, self-awareness, included biases and a growth mindset. Students spoke of recognizing, evaluating, and changing their own and others' biases. For growth mindset, students mentioned a desire to continue learning, self-reflecting, and improving skills around health equity. Statements regarding providing equitable care to patients (allyship) were often co-coded with biases, peer connection, and growth mindset. Growth mindset was also often co-coded with biases. Descriptions of the themes and subthemes and representative quotations from participants are provided in Appendix 1.

In the questionnaire, 101 (81%) of students ranked the effectiveness of three curricular aspects in improving their ability to recognize and reflect on biases, discuss topics related to health equity, communicate with and provide equitable care to patients, and design interventions to reduce health disparities (Table 4). On average, students rated the overall curriculum as very effective for teaching them how to reflect on and recognize biases, discuss topics, and communicate with and provide care to patients. Students also rated the overall curriculum as moderately

Table 4. Student-Rated Effectiveness of Overall Curriculum and Curricular Aspects in Improving Ability to Reflect and Recognize Biases, Discuss Topics around Health Equity, Communicate with and Provide Equitable Care to All Patients, and Design Interventions to Reduce Health Disparities (N = 101)

	Effectiveness ^a in Ability to							
	Reflect and Recognize Biases		Discuss Topics Around Health Equity		Communicate with and Provide Equitable Care to all Patients		Design Interventions to Reduce Health Disparities	
	M (SD)	p value ^b	M (SD)	p value ^b	M (SD)	p value ^b	M (SD)	p value ^b
Overall curriculum	4.3 (0.8)		4.3 (0.7)		4.1 (0.8)		3.8 (1.0)	
Curricular aspect								
CLE discussions	3.3 (1.0)	< .001 ^{c,d}	3.4 (1.1)	< .001 ^{c,d}	3.1 (1.0)	< .001 ^{c,d}	3.0 (1.1)	< .001 ^{c,d}
Zoom discussions	4.3 (0.9)		4.3 (0.9)		4.3 (0.8)		4.1 (1.0)	
Skills patient cases/practice	4.0 (0.9)		4.1 (0.9)		4.2 (0.8)		4.0 (1.0)	

Abbreviations: CLE = collaborative learning environment.

^a Effectiveness rated as 1 (not at all effective), 2 (slightly effective), 3 (moderately effective), 4 (very effective), or 5 (extremely effective).

^b Analysis of Variance (ANOVA) with Bonferroni correction was used to determine significant, defined as $p < .05$.

^c Significant difference in means between CLE discussions and Zoom discussions.

^d Significant difference in means between CLE discussions and skills patient cases/practice.

to very effective for designing interventions ($p < .01$). For all three objectives, students rated discussions within the Collaborative Learning Environment as being significantly less effective than Zoom discussions and skills cases and practice ($p < .001$). There were no significant differences between the effectiveness of Zoom discussions and skills cases and practices across any objective ($p > .05$).

All 124 students participated in the OSCE at the end of the course. Ninety-six students (77%) were able to address their standardized patient's concerns about the health care system through empathetic listening and eliciting the patient's perspective. The average student score on ability to respond to the patient's needs and feelings was 4.0 ± 0.8 out of a maximum score of 5, illustrating that, on average, students demonstrated "strong" communication skills in this area.

DISCUSSION

This curriculum builds upon social justice and structural competency curricula in medicine, nursing, and pharmacy literature.^{10,11,17,20} The literature in health professions education primarily describes social justice and/or structural competency elective courses that were conducted in-person and contained a mix of discussion and traditional didactic lectures.^{10,17,20} The health equity curriculum described here presents an innovative approach because it was integrated into an existing required course for all pharmacy students, delivered remotely, and

consisted mostly of small-group peer learning. Another innovative aspect of this curriculum was the utilization of peer small-group discussion to drive learning, which is a key component of Sukhera's transformative learning and social justice frameworks.^{8,15} This is the first curriculum we are aware of that uses these frameworks in pharmacy education in a remote learning environment.

At the end of the health equity curriculum, 61% of students who completed the Structural Competency Instrument were able to recognize structural determinants of health when presented with a patient case or health disparities. One limitation is that the Structural Competency Instrument consisted of 14 open-ended response items, which may have contributed to survey fatigue resulting in a lower assessed structural competency rating. In addition, because students did not complete a validated structural competency instrument prior to the curriculum, comparisons could not be made between student competencies prior to and after the curriculum.

The identified themes in the student comments aligned with Sukhera and colleagues' framework of transformative learning theory for recognizing and managing implicit bias.¹⁴ Student comments about recognizing their own biases and having a desire to continue to self-reflect indicate that they had a disorienting experience and were engaging in critical reflection. Comments regarding providing equitable patient care and starting conversations around health equities align with the elements of acquiring skills and role modeling new behavior. Finally, many of these comments were in the context of peer discussion and

dialogue, another key component of the framework. The growth mindset theme we identified further illustrates the transformative nature of this curriculum in that it prompted students to view their challenge of implicit biases as a lifelong process. Though only 12% of students scored into the Imagining level of the Structural Competency Instrument, 77% were able to apply and demonstrate equitable patient-centered communication in a formal assessment (OSCE). This suggests that, although students may require additional practice in imagining interventions, they had already begun to apply individual interventions such as patient-centered communication skills in addressing patients with structural determinants of health.

Among the different modalities used to deliver this curriculum, students preferred engaging in live discussion and applying what they had learned to patient cases over participating in asynchronous discussion forums. Although engaging in asynchronous discussions was still rated as moderately effective, doing so likely did not generate as much of a rich discourse or interaction as participating in synchronous discussions. Additionally, to track participation, students were required to complete their discussion posts by a certain time each week, which may have led to students perceiving the discussion posts as an assignment rather than an opportunity to critically reflect on and discuss the topic. Through this evaluation, we identified several areas for improvement. Though students expressed gratitude and interest in this topic, they felt overwhelmed at times with the workload the curriculum added to the didactic curriculum and extracurricular activities. This may have led to less thoughtful engagement by the students. For future iterations, we plan to spread the curriculum across multiple courses and themes and provide a better balance between asynchronous and synchronous discussions. This will reduce the amount of in-class time needed in an already packed curriculum and allow students to thoughtfully engage with the curriculum without feeling overwhelmed.

Limitations to our study include the lack of a pre- and post-intervention comparison and a control group, and only involving our school's student population, which identified primarily as Asian/Pacific Islander and female, in the study. Given that this curriculum centers around individual biases and perspectives of marginalized and privileged groups, it may have a different impact if implemented in student populations with different demographics. Additionally, the assessments occurred mostly in the didactic setting. Though students did demonstrate equitable communication skills in their OSCE, this study did not evaluate whether students would use and apply structural competency to actual patient care. Future research should evaluate whether health equity curricular

interventions impact students' ability to communicate with and provide care to real patients with structural determinants of health.

CONCLUSION

A blended health equity curriculum based on structural competency and transformative learning frameworks for recognizing and managing implicit bias was piloted remotely during the neuropsychiatric theme to second year pharmacy students. Though this was a pilot program, we believe that this approach to a health equity curriculum could be implemented at other institutions as it requires minimal in-class time. This curriculum also builds upon existing health professions literature by demonstrating an effective, remote, mandatory model for social justice-oriented education through peer dialogue. From our experience, a health equity curriculum spread throughout the didactic curriculum with a blended approach may be an effective way to incorporate health equity conversations into existing programs and could be an important step in training student pharmacists to be advocates for social justice.

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Appendix 1. Themes and Sub-themes Identified Through Qualitative Analysis of Student Open-ended Survey Responses with Representative Quotations

Theme	Sub-Themes	Participant Quotations
Allyship	Providing more equitable patient care	<p>"I learned that there is so much more to providing quality health care than just knowing disease states and medication guidelines. There is so much more that healthcare providers that do for the patient by understanding their backgrounds and treating them more comprehensively. In order to do that, I need to continuously reflect and work on my own biases so that they don't interfere with the quality of care the patient receives."</p> <p>"I learned that I am still learning ... about the barriers our patients are facing on a daily basis. I learned that I care a lot about achieving equitable access to care for my patients. I realized that the more I talked about the experiences marginalized people face on a daily basis, the more I learned that I care about challenging our system to make sure this doesn't happen in the future. I also learned that I need to challenge our system harder."</p>
	Starting conversations/ speaking up about inequities	<p>"Our words are so powerful and can have a huge impact. In terms of confrontation, even if the person doesn't register the information immediately, a part of the conversation will always stick with them. As HCP, we should also use our voices to advocate for those who can't advocate for themselves and speak up against these inequities. I also feel like this curriculum has forced me to go outside my comfort zone to talk about specific patient populations and issues that need to be addressed in our communities."</p> <p>"I learned that I need to reflect more on uncomfortable situations to really grow and learn from them instead of brushing them off because they are uncomfortable. I learned that being able to talk, debrief, and reflect with others in a safe space is extremely valuable to everyone's growth and development and getting rid of biases."</p>
Peer Connections	Shared experiences and goals	<p>"I learned that I share very similar sentiments with my classmates, and it's comforting hearing that I am not alone when faced with</p>

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Theme	Sub-Themes	Participant Quotations
Self-Awareness		challenging situations regarding equity ... I learned that my peers are understanding and how we genuinely want to make health care more equitable. My peers taught me different approaches to handling situations (such as asking for patient preference before we jump to our own conclusions) and it's okay that we don't have an answer to everything yet. Also, to give each other grace and time to process our thoughts/answers."
	Recognize perspectives/viewpoints	"I learned that my peers are all have experiences that are similar to mine in some ways but also very different from my own. Hearing about those different experiences has allowed me to look outside of my own lens and to both learn from and empathize with the experiences of others in order to provide unbiased care."
	Recognizing, evaluating, and changing biases	"I learned that I still have a lot to learn regarding my own biases and how that can affect interactions with people and patients ... The most important thing is recognizing that every day a conscious decision must be made to unlearn the stereotypes, biases, and stigmas that society has engrained and work to go against them." "I was aware that I very privileged to begin with, but I did not really understand how that could affect access to healthcare as well. It made me think about my own advantages, about why it may not be accessible to patients in the US healthcare system, and about how I can as a pharmacist try to make changes in order to better patient experiences and access to equitable care."
	Growth mindset and being a lifelong learner	"I've learned that I have privilege in many ways but I also belong to some minority groups, so it's important to reconcile both and be a lifelong learner about these issues. It's gonna take a lifetime to become completely unbiased so it's necessary to keep the conversation going." "I will ask more questions, I will critically reflect more on experiences and conversations (especially mistakes and moments of weakness and moments of education from others), I will question my assumptions and judgements and biases and explore how to best navigate dismantling them, while doing this alongside others, in order to move toward deeper understanding and compassion and empathy. I will explore additional resources, learn my history, challenge my ideas and the ideas of others, and stay up to date on the state of the world and how to contribute to navigating toward growth and equity."