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A Novel Standardized Patient Encounter Including Patients with Intellectual and Developmental Disabilities: Teaching Interprofessional Education Competencies to Health Professions Students

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Abstract

Background: Interprofessional education is essential for preparing health professions students to collaborate effectively, particularly when caring for patients with intellectual and developmental disabilities (I/DD).

Objective: This study evaluated a novel standardized patient (SP) encounter designed to teach interprofessional competencies to medical and dental students.

Methods: Medical students participated voluntarily, and dental students participated as part of the curriculum. Two faculty evaluators assessed student performance using a structured rubric. Standardized patients provided qualitative feedback on student interactions.

Results: Both medical and dental students demonstrated improvements in key interprofessional competencies, including communication, teamwork, and patient-centered care. Faculty evaluations showed high consistency following a calibration process. SP feedback highlighted strengths such as attentive listening and respectful communication, as well as areas for growth, including team inclusion and clarity in explanations.

Conclusion: The SP encounter effectively promoted interprofessional learning and provided actionable insights for enhancing students' collaboration skills. Incorporating SP perspectives enriches the evaluation of interprofessional education initiatives.

Keywords: Interprofessional education, Patient encounter, Intellectual and developmental disabilities, Teaching

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Introduction

Standardized patients (SPs) are commonly used in graduate health education to assess and improve the critical thinking and communication skills of students and to develop their teamwork skills [1]. These interactions provide controlled and reproducible learning experiences before students begin treating patients in real-world settings.1 Early exposure and practice with SPs enable students to develop confidence and competency in clinical settings, which should ultimately improve their quality of care for patients in the future [1].

Research suggests that high-quality multidisciplinary healthcare results in improvements in patient care and safety and decreases in the cost of care [2]. Interprofessional education (IPE) was developed to introduce students to multiple disciplines in healthcare through curricular programming that encourages diverse health professions students to interact and collaborate. By participating in IPE, students learn from each other about the roles and responsibilities of various health professions so that they can provide multidisciplinary, interprofessional care to patients. One example of an IPE activity is the SP encounter, where students from different healthcare professions practice communication skills and shared decision-making while simulating patient-centered care.

In addition to encounters with traditional SPs, students also need experience providing care to patients from medically underserved populations (MUP), such as those from the intellectual and developmental disability (I/DD) community. Although patients with I/DD are not federally defined as a MUP, these patients typically have limited resources and support systems, and healthcare professionals tend to have insufficient training for optimal care [3]. As such, members of the I/DD community are considered an MUP [3]. Further, these patients often require more frequent and involved medical treatment or assistance, so quality interprofessional collaborative practice is vital to avoid unnecessary treatments and poorer health outcomes [3]. Given the challenges of patient care for this population, including I/DD patients in SP encounters as part of a standard IPE curriculum would provide students with valuable experiences caring for MUP. It would also allow students to practice communication skills and receive feedback on their performance directly from the I/DD participants.

Currently, many health professions programs may be unable to provide interprofessional SP encounters with I/DD or other medically underserved patients. However, programs that have the appropriate IPE infrastructure should consider inclusion of such programming to reinforce the early development of interprofessional ideals and professional identity in their students [4]. Research suggests an immersive and experiential IPE curriculum can have a major impact on a student's professional identity formation and, ultimately, their behavior as a future healthcare professional [4]. Although the benefit of including I/DD patients in SP encounters has been investigated in relation to training of individual healthcare professionals [5], to our knowledge, no studies have specifically investigated the use of SPs from the I/DD community to advance the interdisciplinary education aspect of holistic patient care. Therefore, the purpose of this study was to evaluate the effectiveness of a novel interprofessional standardized patient encounter involving individuals with intellectual and developmental disabilities (I/DD) in enhancing health professions students' collaborative practice

competencies. Specifically, we examined whether participation in this encounter improved both self-assessed and faculty-assessed competencies aligned with the Interprofessional Education Collaborative (IPEC) framework.

Materials and Methods

The current study used a pretest-posttest survey design to evaluate our novel SP encounter. The surveys used in the study were based on the Interprofessional Education Collaborative (IPEC) core competencies, which are the accepted standard for evaluating interprofessional competencies [6]. The surveys were developed by adapting existing IPE self-assessment instruments guided by the IPEC core competencies. Items were reviewed by a panel of faculty members with expertise in interprofessional education and intellectual and developmental disabilities to ensure face and content validity. While the surveys were piloted for clarity with a small group of students outside the study cohort, formal psychometric validation was not performed. As such, findings should be interpreted within this limitation.

Medical and dental students from the same graduate health professions institution completed surveys before and after the encounter to evaluate their understanding of the IPEC core competencies. Prior to this encounter, all participating students had completed foundational IPE coursework introducing the IPEC core competencies, but none had previously participated in a formal, graded interprofessional SP encounter.

Additionally, SPs from the I/DD community completed a survey after the encounter to evaluate the students' implementation of the core competencies. Faculty also evaluated student performance of the competencies by completing a survey.

The study was reviewed and approved by the local institutional review board. Study data were analyzed for educational purposes, and the participating students provided their written consent before participation. The IPE activity was required for the dental students but voluntary for medical students. Participation in the study was voluntary for both groups of students. In addition, students were informed that participation or nonparticipation in the study would not affect their grades. The SPs who participated in the study were from the local I/DD community and were trained to complete the case scenario of the SP encounter as scripted. Some were accompanied by their support staff, who were also trained on the case scenario. The majority of the participating SPs had prior experience with SP encounters. Before participation, all SPs provided their informed consent, and they were paid the standard SP wage for their time. No demographic information was collected from participating students or SPs.

Interprofessional Standardized Patient Encounter

The novel interprofessional SP encounter of the current study was a 2-hour exercise. It was conducted at the human patient simulation center of the study institution, which has 14 examination rooms and technology for observation and recording of student-SP interactions. The SP encounter was designed to enhance interprofessional education and practice for participating students as they interacted with the I/DD patients. The case scenario was written specifically for this IPE interaction at a third-grade reading level by our institution's faculty. To evaluate the students from both professions, the scenario involved a chronic medical diagnosis (type 2 diabetes) and an acute oral-systemic component (periodontitis). Nineteen interprofessional student teams interacted with 7 trained SPs and their support staff during the encounter.

Each team had 1 second-year dental student and 1 first-year or second-year medical student. Student teams were formed by pragmatically pairing one second-year dental student with one first- or second-year medical student based on their shared availability for the scheduled session. This pairing was designed to mimic real-world referrals and consultations between dental and medical providers.

The case scenario for our IPE interaction was mailed to the SPs 1 month before the encounter, and a follow-up email was sent 1 week before. The SPs were encouraged to have a caregiver, family member, or medical student review the case with them a few times before the day of the encounter to ensure understanding. They were also instructed to wear street clothes to the encounter. To minimize anxiety for the I/DD patients, only a review of the chief complaint, medical history, and evaluation of a provided x-ray was performed during the encounter.

On the day of the encounter, the SPs were asked to arrive 30 minutes early, so they could be settled in the examination room and acclimate to the space. Examination rooms had a table and 4 chairs. Because some of the I/DD patients used wheelchairs, standard chairs were removed when necessary. If the SPs felt more comfortable with a family member or support staff in the room, those individuals were allowed to remain. The director of the human patient simulation center was available during that time to answer any questions from the SPs or their support person before the students arrived for the encounter. Although every effort was made to standardize SP responses during the case scenario, past experience indicated that these I/DD patients might provide unscripted responses because of their intellectual or developmental limitations.

Each novel interprofessional SP encounter was scheduled in 30-minute intervals. Fifteen minutes were allocated for the SP encounter with the student team. A large clock was displayed on a big screen TV in each room so the students could appropriately pace themselves. The remaining 15 minutes were allocated for the SPs to complete their survey evaluations of the students. A student assistant or the SP's support person was available for assistance when needed.

The case scenario of the SP encounter involved a patient with type 2 diabetes presenting to a clinic with complaints of pain in a mandibular molar. Because the primary complaint involved tooth pain, only the dental student interacted with the patient at first. After the initial interview and review of the SP's history, the student was provided with the patient's current vital signs and a panoramic x-ray that showed periodontitis associated with bone loss near the painful mandibular right molar.

The dental student then requested an in-room consultation with the medical student to discuss the impact of the patient's diabetes on subsequent dental care. The dental student introduced the medical student to the SP and provided the medical student with relevant information obtained during the initial dental encounter. The interprofessional team then jointly discussed recommended treatments and long-term management, including step-by-step processes, with the patient. The team encouraged questions and feedback from the SP. The students avoided medical jargon while answering questions to promote SP understanding. To ensure that the interprofessional teams remained on schedule, the central speaker system of the human patient simulation center was used to provide overhead announcements during the SP encounter. The announcements used during the encounter included "You may begin the clinical encounter," "2 minutes remaining," and "Encounter time is over."

After the third announcement, students were required to close the session and exit the room. The SPs were trained to expect these announcements, so they would not be startled by them.

All SP encounters were observed by faculty from both disciplines and video-recorded for later review and evaluation. Before the interprofessional SP encounter, students from both disciplines were briefed by the assistant director for interprofessional education. This prebriefing addressed the objectives of the exercise and student concerns or questions. The director of performance assessment also provided information about the timing and logistics of the SP encounter. During the prebriefing, students completed their pre-encounter survey.

After the SP encounter, students from both disciplines were debriefed about their performance during the interprofessional exercise. The debrief was facilitated by the dental school's interprofessional course director and focused on the students' feedback of the clinical and interprofessional aspects of the exercise. Students completed their post-encounter survey during the debriefing.

Separately from the students, the SPs and their support staff were also debriefed after the encounter by the director of simulation and performance. This debrief provided an opportunity to obtain oral feedback from the I/DD patients for improvements in future encounters (data not reported). The SPs also completed their post-encounter survey during the debriefing.

IPEC Core Competency Performance Survey Assessments

Study outcomes evaluating the effectiveness of the novel interprofessional SP encounter were assessed by participating medical and dental students, faculty, and SPs. The surveys were developed through an iterative process by a panel of medical and dental faculty with over 15 years of combined experience in oral-systemic health and IPE. The panel mapped all survey items directly to the 2016 IPEC core competencies to ensure content validity. The faculty assessment survey was adapted from a scale previously used in the institution's IPE program. Face validity was established by piloting the SP survey with two volunteers from the I/DD community to ensure the language and prompts were understandable and appropriate. The internal consistency (reliability) of the student pre/post survey was assessed using Cronbach's alpha, which showed good reliability ($\alpha = 0.87$).

Separate survey assessments of these 3 groups were intended to obtain a comprehensive and detailed evaluation of the encounter and to accurately reflect the overall experience. To enhance survey clarity and relevance, the instruments were piloted with a small group of students (n=5) from both medicine and dentistry outside the study cohort. Their feedback was used to refine question wording and response options. While this process improved face validity and content clarity, formal psychometric validation was not conducted.

Student Self-Assessment Survey

The student self-assessment surveys were completed before (pre-encounter) and after (post-encounter) the SP encounter. Each survey included 4 questions to assess student understanding of the 4 IPEC core competencies: values/ethics, roles/responsibilities, interprofessional communication, and teams and teamwork.6 With 1 question for each competency, students used a 5-Likert scale (strongly agree = 5 points, agree = 4 points, neither agree nor disagree = 3 points, disagree = 2 points, and strongly disagree = 1 point) to evaluate their understanding of the competencies. The survey questions included the following: (1) I value medical

and dental collaboration and believe it to be necessary for the care of select patients (value/ethics), (2) I have an understanding of the roles that both a dentist and physician may play in the care of a patient that we share (roles/responsibilities), (3) I have had the opportunity to communicate professionally with a student physician/student dentist regarding the care of a patient (interprofessional communication), and (4) I have an understanding of how dentists and physicians can work collaboratively to improve patient care outcomes (teams and teamwork).

Students accessed the survey electronically by scanning a QR code. Qualtrics software was used for the survey and recorded student responses anonymously. All survey responses were downloaded from Qualtrics for subsequent analysis.

Faculty Assessment Survey

Trained faculty evaluated student execution and use of the IPEC core competencies by observing the encounter in real time through a 1-way mirror in the control room and by taking notes. They also reviewed the video recording of the encounter after the activity. We considered this evaluation as the most reliable way to assess performance while avoiding potential biases. A team of 2 external evaluators from the medical and dental disciplines were selected to observe the interprofessional SP encounters.

The faculty assessment survey was adapted from a scale designed to assess student performance of IPEC core competencies.6 Modifications included adding or removing example sentences for each competency to make it more relevant to the specific SP encounter. Also, sentences were worded to evaluate the medical and dental students as teams. Survey questions were categorized according to the IPEC framework, and included a range of 2-4 behavioral exemplars for each competency that faculty could easily observe during evaluation of the video recordings.6

The 10-question survey used a Likert scale and was scored as follows: strongly agree = 5 points, agree = 4 points, neither agree nor disagree = 3 points, disagree = 2 points, and strongly disagree = 1 point (Table 1). These questions were designed to allow faculty to easily observe competency behaviors when they reviewed the video-recorded SP encounters.

Before evaluating the encounters, the two external faculty evaluators (one from medicine and one from dentistry) participated in a structured calibration session. This session involved jointly reviewing a sample video recording of a pilot SP encounter not included in the study. Using the faculty assessment survey, they independently rated the student team and then discussed their scores and observations with a neutral IPE facilitator until a consensus on the application of the rating scale was achieved. This process was repeated for a second sample video to reinforce consistent interpretation and application of the competency benchmarks.

A structured calibration was prepared, but inter-rater reliability numbers was not collect/report.

Like the student survey, both faculty evaluators accessed the survey separately through Qualtrics to evaluate and complete it for each student. All survey responses were downloaded from Qualtrics for subsequent analysis.

Standardized Patient Post-Encounter Survey

The purpose of this 5-question survey was to allow the SPs to evaluate the performance of their student healthcare team. The survey also included space for written comments. We included this survey in our study because it allowed the SP to evaluate the students' fulfillment of the encounter

objectives and their use of the IPEC core competencies.

Table 1. Faculty Assessment Survey for Evaluating Student Performance of Interprofessional Education Collaborative assistances During the Standardized Patient Encounter

Survey Question by Core Competency	Example Sentences of Desired Behaviors
Values/ethics	
1. Team member encourages patient to be an active participant in care decisions.	Did the student ask, "Do you have any questions for me?"
2. Team member shows respect in relationships with other team members and with the patient.	Students are not talking over each other, not ignoring each other, not rolling their eyes, or not making gestures that seem like they do not know.
Roles/responsibilities	
3. Team member implements the interprofessional communication clearly to patients, families, community members, and other professions.	Students introduce self and each other by stating their name and the roles of each.
4. Team members engage other health professionals who complement their expertise to meet the specific care needs of the patient.	Students ask each other what they recommend for the plan of care.
Interprofessional communication	
5. Team member actively listens to other team members.	Students are observed nodding heads, responding to concerns, verbalizing agreement, asking follow-up questions, not interrupting, and giving all members of the team time to talk.
6. Team member addresses the patient's concerns effectively through discussions.	Students address comments related to pain, cost, diseases, or any other concerns expressed by patient.
7. Team member uses effective communication strategies to share patient treatment goals and outcomes of care.	Students suggest treatment that maintains the patient's health condition, such as stabilizing diabetes or extracting the painful tooth.

Survey Question by Core Competency	Example Sentences of Desired Behaviors
8. Team member organizes and communicates information to patient and healthcare team members in a way that is understandable and clear.	Students avoid discipline-specific terminology or medical jargon when possible.
Teams and teamwork	
9. Team member engages other health professionals in shared problem-solving appropriate to the specific care situation.	Students develop treatment goals and care plans.
10. Team member demonstrates understanding of the responsibilities and expertise of other health professions.	Students recognize the limitations and strengths of each profession. Patient questions are answered by the appropriate profession.

The SP survey was completed after the student team left the room. A student assistant read the questions aloud and then entered the SP's responses verbatim on an electronic version of the survey. The survey used a 3-point Likert scale (agree, disagree, or unsure) and was developed to be understandable by SPs with intellectual disabilities (Table 2). Prompts were provided to clarify questions for the SPs.

Table 2. Standardized Patient Survey for Evaluating Student Performance During the Standardized Patient Encounter

Survey Question	Example Prompts of Desired Behaviors
1. Did the student dentist and the student doctor act as a good team?	They did not talk over each other, they did not ignore each other, and they did not roll their eyes or make inappropriate gestures.
2. Did they listen to each other and to me?	They did not talk over me, they did not ignore me, and they did not roll their eyes or make inappropriate gestures.
3. Did they act respectfully to each other and to me?	They talked to me rather than to my support staff.
4. Did they actively listen to each other and to me?	They nodded their heads, responded to concerns, verbalized their agreement,

Survey Question	Example Prompts of Desired Behaviors
	followed up my questions, did not interrupt, and gave me time to talk.
5. Did the dentist and the doctor explain the plan of care in a way that made sense to me?	They did not use medical terms that are hard to understand.

For the written comments at the end of the survey, the student assistant asked the SP to name 1 positive and 1 negative comment about the experience. These qualitative responses allowed for subjective, individual feedback about the students' performance as a team during the encounter that SPs may have been unable to address sufficiently through the 5 survey questions.

Statistical Analysis

The Likert-scale responses to all study surveys were summarized using frequency and percentage. The 1 positive and 1 negative comment provided by the participating SPs were grouped by common responses. Using the assigned point values for the Likert-scale responses, the mean and 95% confidence interval (CI) of responses to the student self-assessment survey and the faculty assessment survey were calculated for each IPEC core competency. In addition, survey responses to the student self-assessment survey were compared before and after the SP encounter for each competency to evaluate changes in student understanding of the competencies. Because the student survey was anonymous, an independent samples t test was used for this analysis. Data were analyzed using SPSS statistical software version 29.0 (IBM Corp., Armonk, NY), and a $P<.05$ was considered significant.

Due to the anonymous nature of the survey responses, data could not be paired at the individual level. Independent samples t-tests were therefore employed to compare pre- and post-intervention responses. While this approach provided a valid estimate of group-level differences, it limited our ability to control for within-person variability.

Results

In the current study, students and SPs from the local I/DD community participated in 19 novel interprofessional SP encounters. Overall, 38 (19 dental and 19 medical) students and 7 SPs participated.

Student Self-Assessment Survey

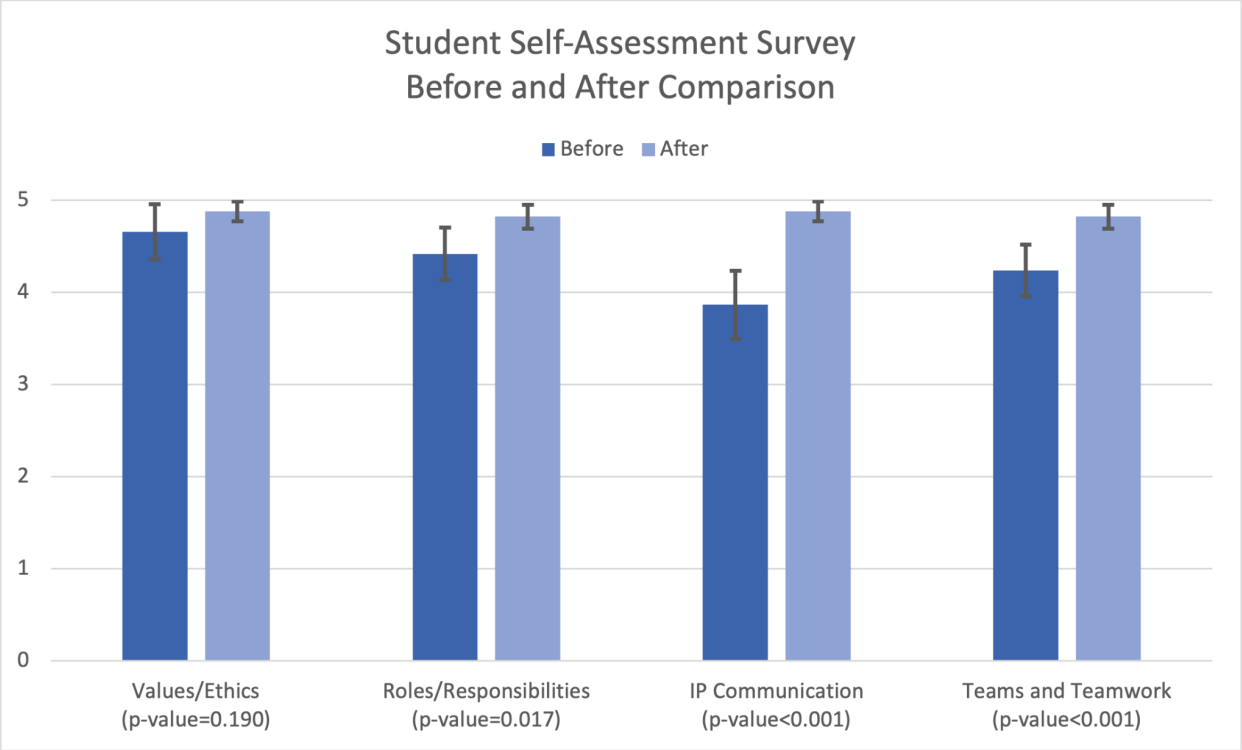
Table 3 summarizes student responses to the self-assessment survey before and after the interprofessional SP encounter. Mean (95% CI) scores for the 4 IPEC core competencies increased after the encounter (Figure 1). Values/ethics was 4.66 (95% CI, 0.298) before the encounter and 4.88 (95% CI, 0.110) after it. Roles/responsibilities was 4.42 (95% CI, 0.283) before the encounter and 4.82 (95% CI, 0.130) after it. Interprofessional communication was 3.87 (95% CI, 0.371) before the encounter and 4.88 (95% CI, 0.110) after it. Teams and teamwork were 4.24(95% CI, 0.281) before the encounter and 4.82 (95% CI, 0.130) after it. Except for the values/ethics core competency, there were significant improvements in student understanding of

the competencies between surveys (all $P<.02$).

Table 3. Responses to the Student Self-Assessment Survey Before and After the Interprofessional Standardized Patient Encounter (N = 38)

Core Competency	No. (%) Responses				
	Strongly Agree	**Agree**	**Neither Agree Nor Disagree**	**Disagree**	**Strongly Disagree**
Values/ethics					
Before	31 (81.6)	5 (13.2)	0 (0)	0 (0)	2 (5.3)
After	30 (88.2)	4 (11.8)	0 (0)	0 (0)	0 (0)
Roles/responsibilities					
Before	22 (57.9)	13 (34.2)	1 (2.6)	1 (2.6)	1 (2.6)
After	28 (82.4)	6 (17.6)	0 (0)	0 (0)	0 (0)
Interprofessional communication					
Before	14 (36.8)	13 (34.2)	4 (10.5)	6 (15.8)	1 (2.6)
After	30 (88.2)	4 (11.8)	0 (0)	0 (0)	0 (0)
Teams and teamwork					
Before	16 (42.1)	18 (47.4)	2 (5.3)	1 (2.6)	1 (2.6)
After	28 (82.4)	6 (17.6)	0 (0)	0 (0)	0 (0)

Figure 1. Comparison of Responses to the Student Self-Assessment Survey Before and After the Interprofessional Standardized Patient Encounter (N = 38)



The error bars represent the 95% confidence interval of the mean Likert-scale responses for each core competency.

Abbreviation: IP, interprofessional.

Faculty Assessment Survey

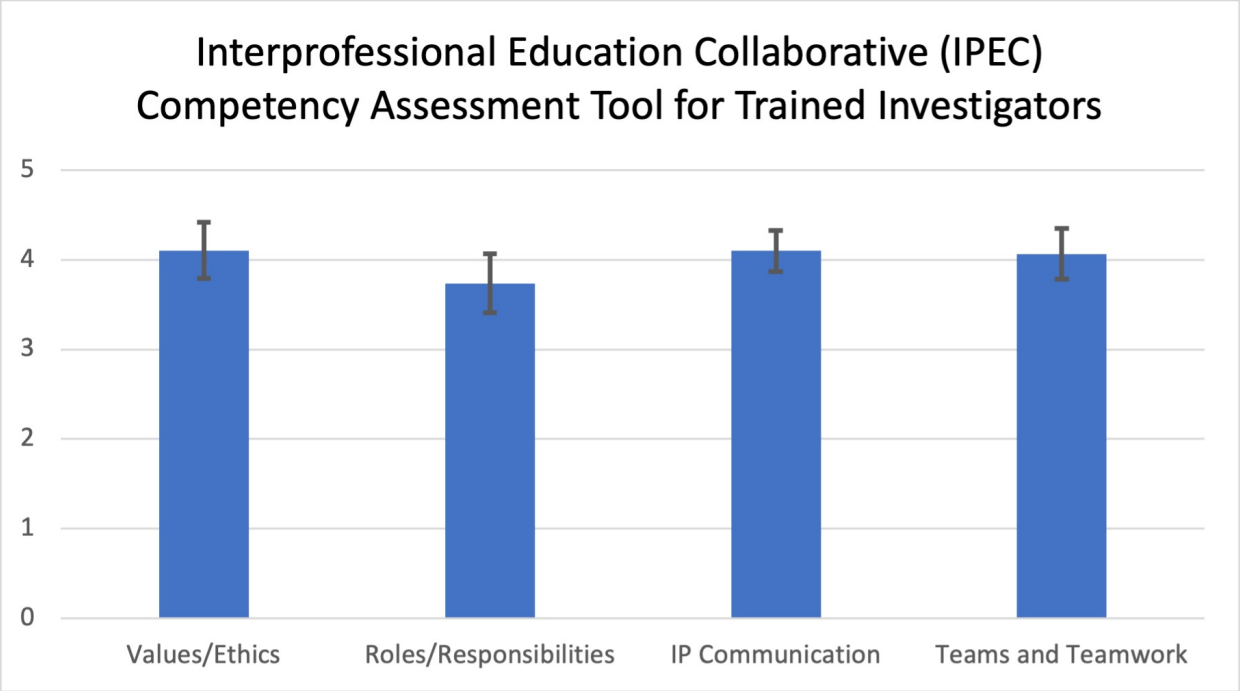
Table 4 summarizes the responses of the 2 faculty evaluators on the faculty assessment survey for each of the 38 students who participated in the SP encounter. The overall mean (95% CI) scores for the 4 IPEC core competencies are presented in Figure 2. Values/ethics was 4.11 (95% CI, 0.314), roles/responsibilities was 3.74 (95% CI, 0.328), interprofessional communication was 4.10 (95% CI, 0.231), and teams and teamwork was 4.07 (95% CI, 0.282).

Table 4. Responses to the Faculty Assessment Survey From the 2 Faculty Evaluators Assessing Student Performance of the Interprofessional Standardized Patient Encounter (N = 38)

Survey Question by Core Competency	Mean (95% CI)
Values/ethics	
Encourages patient to be active participant in care decisions	4.1 (3.6-4.5)
Shows respect with other team members and with patient	4.2 (3.8-4.5)

Survey Question by Core Competency	Mean (95% CI)
Roles/responsibilities	
Implements interprofessional communication clearly	4.0 (3.7-4.4)
Engages other health professionals to meet needs of patient	3.4 (3.0-3.9)
Interprofessional communication	
Actively listens to other team members	4.2 (3.8-4.5)
Addresses patient's concerns effectively	4.2 (4.0-4.5)
Uses effective communication strategies to share treatment goals and outcomes	4.2 (3.9-4.5)
Organizes and communicates information understandably and clearly	3.8 (3.4-4.3)
Teams and teamwork	
Engages other health professionals in shared problem-solving	4.3 (4.0-4.6)
Demonstrates understanding of responsibilities and expertise of other health professions	3.8 (3.4-4.2)

Figure 2. Overall Mean Responses to the Faculty Assessment Survey for Each Core Competency



Standardized Patient Post-Encounter Survey

All 7 participating SPs agreed 100% with the first 4 questions of the survey for the 19 SP encounters. For the last question, SPs agreed that the medical and dental students explained the plan of care in a way that made sense for 18 (90%) encounters. One (5%) response disagreed with the question, and 1 (5%) was unsure. The positive and negative written comments provided by SPs about the encounter were varied. The most common positive comments were that students were kind to the SPs, did a good job listening while also managing encounter time, and did a good job explaining and giving clear instructions. Overall, SP feedback emphasized attentive listening, respectful communication, and the importance of including all team members in interactions. The most common negative comments were that students did not ask who the other person in the room was (SP's support staff), used medical or dental jargon, and did not contribute equally to discussions.

Qualitative Feedback from Student Participants

In addition to quantitative outcomes, qualitative comments from students provided valuable insights into their learning experiences during the interprofessional encounter. Many students highlighted the authenticity and relevance of the I/DD SP interaction, emphasizing its impact on their comfort and communication skills when working with individuals with disabilities. Representative comments included: "Out of all the SPs that I have done at ATSU, this one felt the most natural"; "During the debrief session, I found it helpful that we discussed how to ask questions regarding someone's disability. I think that we all are nervous that we could ask in an insensitive way. However, it was helpful to hear from the SPs that we should ask, and to hear how they would feel comfortable having a physician bring it up to them"; "I think that

this class and our SPs have been extremely helpful in normalizing conversations regarding disabilities"; "I think everyone should have been able to experience the SP encounter we did related to handling patients with disabilities. Not only was I able to feel more comfortable working with medical students, but I also felt a lot better about taking care of a patient with a disability. That was the best!!"; "I liked the I/DD standardized patient encounter. I think all students should do the I/DD encounter since I heard the other IPE activities (geriatric presentation) were more time consuming."

These reflections reinforce that the SP encounter was not only perceived as realistic and meaningful but also contributed to students' confidence, empathy, and interprofessional collaboration skills.

Discussion

The current study evaluated the effectiveness of a novel interprofessional SP encounter for teaching medical and dental students about the 4 IPEC core competencies. This IPE exercise was also intended to provide students with an interactive experience with MUP patients, specifically trained SPs from the local I/DD community. Results indicated students had statistically significant increases in their understanding of 3 of the core competencies —roles/responsibilities, interprofessional communication, and teams and teamwork — after the encounter. Students also indicated increased understanding of the values/ethics competency after the encounter, but the change was not significant. Results from our faculty evaluators suggested that our medical and dental student teams exhibited interprofessional respect for each other's roles and expertise and that they effectively developed collaborative strategies to meet the SP's needs. Survey responses from participating SPs also supported our findings. Additionally, the SPs provided positive feedback about the encounter that indicated the interprofessional teams made these I/DD patients feel heard and effectively communicated understandable treatment plans. Overall, these improvements in student understanding of the IPEC core competencies after the SP encounter highlighted the effectiveness of this exercise for enhancing student knowledge and application of these competencies.

The novel SP encounter of the current study was intentionally designed to provide our student dentists and physicians with a unique opportunity to interact with each other and with members of the MUP community. In most cases, health professions students have limited exposure to these patients, particularly those with I/DD, during their didactic training [3,7]. This lack of exposure is typically caused by limited extracurricular time and rigor in the curriculum, making it difficult to provide IPE interactions with SPs from the MUP community [7]. Because most medical and dental students have few interactions with this community during their education, these patients tend to have poorer healthcare experiences [8]. Therefore, introducing interdisciplinary SP encounters with patients from this community, such as the I/DD patients in our study, can equip students with valuable skills for treating MUPs in their future clinical practice [7]. For that reason, we asked our participating SPs to provide feedback about the students' performance during the encounter to enrich the exercise for the SPs and students. Further, by asking for this input, the SPs were empowered to actively contribute to improving their future healthcare and that of their broader community.

Our novel SP encounter was also intended to expand student understanding of the IPEC core competencies and their application to underserved, vulnerable patient populations.

Before the encounter, the majority of the medical and dental students who participated strongly agreed that collaboration between health professions is necessary for certain patients. However, a smaller number actually understood the roles of other professions and how to effectively collaborate. After the SP encounter with I/DD patients, students self-reported an increased understanding of the IPEC core competencies, suggesting the exercise was beneficial for educating both groups of students. These findings underscore the need to incorporate similar interprofessional SP encounters in all health professions curricula.

Another benefit of including assessment of the IPEC core competencies in our novel SP encounter was reinforcement of the importance and application of these competencies for care of all patients. For some students, this encounter was their first exposure to this interprofessional framework. Our results from the 3 study surveys indicated that students had a better grasp of these core competencies after the encounter. Ideally, this kind of interprofessional experience would positively impact student attitudes and interactions within their curriculum in the short term and enhance the standard of healthcare provided to all patients, including individuals from the I/DD community, in the long term. When implemented in health professions education, the combination of interprofessional experiences and IPEC core competency frameworks may lead to overall changes in healthcare delivery and possible reductions in healthcare disparities experienced by some patients, such as those from the MUP community.

Because our local community has several I/DD service agencies, we were able to involve members from this community in our novel interprofessional SP encounter. In general, most health professions programs do not include MUP or I/DD patients in SP encounters, likely because they lack local access to this community. However, the positive interactions between the students and SPs during our encounter highlighted the importance of creating educational opportunities for students to interact with members from this community. For example, our students received immediate feedback from the I/DD patients about their performance during the encounter, and the patients became directly involved in the education of future health professionals. Ideally, such interactions would enhance the quality of the experience for all participants. However, we acknowledge that the specifics of our local community and the diversity of health professions programs at our institution allowed us to create this novel SP encounter and that the ability of other health professions schools to offer such interprofessional experiences may be limited by the number of programs, community I/DD agencies, or campus accommodations. When possible, schools with multiple health professions programs should consider offering similar interprofessional SP experiences for the benefit of their students and local community members.

This study not only reinforced the value of the IPEC core competencies but also demonstrated a transformative model for interprofessional education by positioning individuals from marginalized populations as standardized patients and educators. This approach directly contributes to patient empowerment. By actively engaging persons with I/DD in the teaching process, learners were exposed to authentic narratives that made abstract competencies like values/ethics and interprofessional communication concretely necessary. Crucially, this process shifted the traditional power dynamic, underscoring the role of patients as partners in shaping professional identity formation. Such engagement helps

dismantle stereotypes and fosters a model of care built on inclusivity and respect [9,12].

The successful implementation of this model hinges on creating a safe and supportive environment for the I/DD community members involved. Our protocols, which included the constant availability of a familiar support person, a structured pre-briefing to acclimate to the simulation space, and a mandatory, facilitated debriefing, were essential to protect SPs from emotional distress and ensure a positive experience. Looking forward, the logical evolution of this work is the co-design of curricula with the I/DD community, moving their role from participants to partners in case development and program evaluation. This would further deepen the authenticity of the learning and the empowerment of the community. Our findings align with calls to action for more innovative and inclusive IPE. As highlighted in recent literature, breaking down professional silos requires deliberate curriculum design that engages with real-world complexity [11]. The current study answers this call by demonstrating an approach that integrates marginalized patient voices directly into the learning process, thereby preparing future health professionals to meet the needs of diverse populations effectively [9,10].

Ethical Considerations and Future Directions

The involvement of individuals from the I/DD community as standardized patients represents a novel contribution with significant potential to advance inclusion in IPE. However, this innovation carries an ethical responsibility to prioritize participant well-being, particularly given that past negative healthcare experiences could be re-triggered during simulation. To address this, we implemented several safeguards, including ensuring each SP was accompanied by a familiar support person, conducting pre-briefings to acclimate them to the environment, maintaining simulation center staff availability for immediate support, and facilitating structured debriefings with SPs and their participated caregivers. While these strategies helped foster a safe and supportive environment, they represent only a first step. Future iterations should move from inclusion to partnership through co-design, with individuals with I/DD and their advocates actively engaged in case development and curriculum planning. This participatory approach would both minimize potential distress and enhance authenticity, thereby strengthening the educational impact and aligning with the IPEC competency of valuing patient-centered care.

Although results suggested our SP encounter was beneficial for all who participated, the current study had several limitations.

Several methodological limitations must be acknowledged. Demographic information of participants was not collected, limiting our ability to explore the influence of student background characteristics on outcomes. In addition, the absence of a control group and the small sample size restrict the generalizability of findings and the ability to make causal inferences. The use of surveys without established psychometric validation further limits the strength of the conclusions. Despite these constraints, the pilot design provided valuable preliminary insights and demonstrated the feasibility of this novel educational approach.

The use of independent samples t-tests represents a further methodological limitation, as a paired analysis would have provided greater statistical power by accounting for individual-level changes. Future studies should consider using non-identifiable participant codes to enable paired data collection while maintaining respondent anonymity, thereby enhancing the robustness of the statistical analysis.

Participation was mandatory for dental students but voluntary for medical students, which may have introduced participation bias. Volunteers may have been more motivated or positively predisposed toward interprofessional education, potentially influencing post-test outcomes.

Pairing of students was not systematically controlled, and prior familiarity between some participants may have influenced teamwork and communication scores.

There was difficulty recruiting our SPs with ID/D. Some were concerned that their paid participation as an SP would compromise their government assistance or disability payments. Others prioritized different activities over participation, such as Special Olympics practice or social activities. Even when SPs with I/DD agreed to participate, there were additional challenges. In most cases, we could not use the same communication approaches for all SPs and had to communicate with each SP individually. Further, multiple communication attempts were sometimes necessary to remind the SPs of the encounter date. Some SPs had difficulty arranging transportation to the simulation center, and others arrived minutes before the encounter start time for various reasons, such as their inexperience with the responsibilities of paid work.

Another limitation related to our inclusion of I/DD patients in the SP encounter affected the participating students. It was difficult to standardize the interprofessional exercise for all our medical and dental student teams because of the inherent limitations of this patient population. For instance, there was variability in the disability of the SPs, which was challenging for interprofessional patient care, and deviations from the case scenario script were often made by the SPs. When designing this encounter, we acknowledged that the variability in disability of our SPs would be a limitation; however, future studies should consider specific modifications to the script for this patient population and their support staff. Such changes would likely result in a more accurate and consistent adherence to the script.

A final limitation is related to the SP survey. There was a lack of variation for responses on the survey; all SP participants agreed with the first 4 questions and almost all agreed with the fifth question. There were also inconsistencies with the 1 positive and 1 negative comment qualitative feedback. These results suggested that the SP survey was likely inadequate for evaluating the SPs' perceptions of student performance during the encounter. It is also possible that the SPs did not feel comfortable in the simulation environment and, thus, were less willing to provide truthful feedback. Future studies should consider modifications to the survey to obtain quality responses from SPs. Researchers should also strive to create a more comfortable environment for these SPs that is conducive to honest feedback. Although such changes would not completely address this limitation, these simple modifications may enhance future SP encounters for the participating patients and students.

The current study was not designed to be qualitative, but future studies may benefit from the addition of a qualitative component. Through use of structured interviews of I/DD patients, researchers could obtain richer information about the interprofessional interactions between the medical and dental students. A qualitative component could also be added to the student survey, so they could provide details about how the experience enriched their ability to achieve the IPEC core competencies and how perceived barriers interfered with that goal achievement.

Conclusion

Results of the current study suggested our novel interprofessional SP encounter, which included trained SPs from the I/DD community, successfully improved student interprofessionalism and understanding of the IPEC core competencies. Because our SP encounter required students to use and reflect on the IPEC core competencies, they gained a deeper understanding of the importance of interprofessional collaboration and its effect on the quality of healthcare delivery. Given the inherent challenges of this patient population, future SP encounters should be tailored to address barriers to hiring SPs from the I/DD community, and patient simulation administrators should strive to create an environment that is conducive to honest written and oral feedback from SPs. Given the healthcare and societal barriers experienced by MUP and I/DD patients, health professions institutions should consider inclusion of similar interprofessional SP encounters in their curriculum. By providing such IPE experiences with this underserved patient population, they would enhance the overall education of their students and improve the future delivery of healthcare in general and for the MUP and I/DD communities in particular.

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Conflict of Interest

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