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2018 NCSBN Scientific Symposium - Education: Comparing Nurse Practitioner Student Learning Outcomes in Telehealth and Face-to-Face Standardized Patient Encounters Video Transcript

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Event
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- [Dr. Pintz] Hello, everyone. Sorry that we are the first session after lunch. If you feel like dozing off a little bit, I fully understand. We want to thank the NCSBN for funding our work and also for inviting us to speak today.

We'll be discussing our study, which compared telehealth and virtual face-to-face standardized patient encounters. And before I go on, how many people are familiar with what standardized patients are? And have you worked with them? Okay, great. I wasn't sure how much I had to describe that phenomena. So one of the challenges that we have in NP education is ensuring that students develop the ability to diagnose and develop a plan of care for their patients.

And developing competency in this area really requires practice and experience. Helping students develop this ability has to be part of the NP education. Primarily, students learn to work on these skills within the clinical setting and during their clinical experiences. However, we are really challenged to find opportunities for students to practice clinically.

If any of you are working in clinical education, you know how hard it is to find clinical placements. And so, you know, we're substituting simulation more and more within some of our teaching strategies. So again, for those who aren't familiar with standardized patients, they're individuals who are trained to portray patients and are commonly used in health professional education to teach and assess clinical competencies.

This form of simulation can help students begin experience with clinical practice and with diagnosing patients. But using SPs can be costly and also difficult to schedule due to high demand and limited

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availability of the simulation space. I know at GW, where we're from, all of the health professional programs vie for the same space, and so it's really challenging to get our students in there.

So we sort of are looking at telehealth SP encounters to increase the opportunity for the students to practice. So our objectives are to compare the diagnostic reasoning outcomes of telehealth-enabled standardized patient encounters with outcomes of face-to-face standardized patient encounters, and also evaluate TSPE as a feasible method to teach and assess diagnostic reasoning.

So we used a mixed-methods sequential design. The quantitative part was a randomized crossover experiment. And then the qualitative part involved interviewing the students that were involved in the study and asking them about, you know, how they viewed the experience.

And in terms of the characteristics of the sample size, we used family nurse practitioner and adult geriatric primary care nurse practitioner students, so all students who are primarily in a primary care setting. And our sample size was 41. We established the sample size through a power analysis, and we achieved our numbers, and we recruited additional students in case we had any technical problems.

In terms of, you know, the demographics, we primarily looked at years of nursing experience, and most of the students had between 2 and 10 years of experience. Most of them did not have telehealth experience, and they either had a bachelor's or a master's degree, so it's sort of mixed equally.

And in terms of the… We are going to talk about the qualitative and the quantitative phases. So in the quantitative phase, we recruited these nurse practitioner students, and we were looking at the two types of encounters, either telehealth or face-to-face, and then our dependent variable was diagnostic reasoning.

And then we used two cases to examine this, and one case had an asthma diagnosis and the other case had a pneumonia diagnosis. And then, you know, one of the things that can happen in an educational study is that there can be a crossover effect. So to reduce the crossover effect, we randomly assigned the participants by setting and by case.

So you can see, you know, some of the students had the face-to-face encounter first, and then they had the telehealth. And then some of the students had the pneumonia case first, and then some had the asthma case first. So we randomly assigned them to those groups. In terms of the intervention, the top set of pictures shows the face-to-face encounter.

And so what happens is the students go into this exam room that it looks like an exam room, you know, it's modeled exactly like an office exam room. And then the standardized patient portrays the patient, and they are trained on the particular case that they are illustrating. And then the student goes in, they do a history, they do a physical, and then they have to formulate a diagnosis and then also some type of treatment plan.

In the telehealth encounter, they kind of have to do the same thing, except that they're not in the room with the patient. They're interviewing the patient via a web conferencing program. And then, in terms of the physical exam piece, there's a nursing student that's present in the room, and the nurse practitioner

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student directs that other nursing student to do the physical exam for them, and then the nursing student reports the findings.

So they have all the same type of data that they could gather in the face-to-face version, but they're doing it through a telehealth intervention. And then we used two different measures of diagnostic reasoning. One was a diagnostic reasoning assessment that I developed a number of years ago, so we used it again, and the items are consistent with the steps in diagnostic reasoning.

And for each item, the student's performance was rated as either pre-novice, novice, advanced beginner, and then competent. And hopefully, our students, when they're graduating, are at the competent level. And so, you know, we've used this instrument before.

The initial testing indicated that it had good reliability and validity. And then, in our current study, it also had good reliability. And then, in terms of the diagnostic reasoning assessment, we had two faculty raters for each student, and then what they did is they did a rating of the observation of the student's performance.

And then they also used the same instrument to evaluate the SOAP note that they created. So the note that the student used to describe, you know, what they saw with that case, and then what their diagnosis was. And then, well, really, the third measure was, "Did the student obtain the correct diagnosis for the case?"

So in terms of our findings, what we found was that there was no difference in the DRA, or diagnostic reasoning assessment scores in the TSPE and the FSPE situations. There was no difference in the DRA scores based on the observation of the encounter and then also the SOAP note, and there was no difference in the DRA scores between the two cases.

In terms of, you know, we looked at other factors related to, you know, the outcome, and we noticed that…or we looked at the sequence and in terms of the sequence of cases, there was no difference between, you know, for the DRA, whether they did the asthma case first or the pneumonia case first.

However, when they did the telehealth intervention first, they had a lower score with the telehealth encounter. And then, in looking at just whether they formulated the correct diagnosis, if it was incorrect or correct, again, when we looked at the two cases, there was no difference in their ability to find the correct diagnosis.

But when we looked at the sequence of cases, if they had the asthma case first, then they were more likely to get the diagnosis than if they got the pneumonia case first. In terms of, again, the encounter type, there was no difference between the two types of encounters.

But again, when we looked at the sequence of the encounter, the face-to-face encounter was they were more likely to get the right diagnosis. And then, in terms of evaluation methods, again, no difference between the observation or the SOAP notes. Okay. -

[Dr. Posey] Hi. So for the qualitative phase of the study, we conducted semi-structured interviews with 20 students. They were volunteers from the original sample who volunteered to participate. And then we

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had two members of the research team kind of separately reviewing the verbatim transcripts, and then we shared that document with a third researcher, who kind of verified our codes.

And then we shared that with our full research team, and that resulted in some minor revisions to our overarching themes. So the first thing that we learned was that the students found both types of encounters, whether they were face-to-face or telehealth to be useful in preparing them for advanced practice.

Might not be surprising. One reason for that was that they noticed having the opportunity to practice in a low-stakes setting. As you can see in the quote, you know, it wasn't a real patient. It wasn't a test. Our students have a lot of anxiety around having to show up for these standardized patient encounters only for high-stakes assessments.

So they found it really beneficial to have the opportunity to go through that whole process of assessment without the pressure of a test or a real patient. And then the other aspect of preparation that they really valued was individual feedback from the faculty.

So because of the study, we actually recorded their encounters. And so the faculty who actually did the evaluations, scored them for the research, then met with the students about a week or two after and just had a whole hour-long conversation about what they observed, and the students really valued that.

And this third aspect of preparation for advanced practice that should have been obvious but was a little bit surprising to us was that they really picked up on this opportunity to experience telehealth. Currently, we don't really teach the students telehealth within the curriculum, although we're working on changing that, and I think that's true in many nursing programs.

But the students really recognize that, in practice, they're going to have to be knowing how to do telehealth, and so they kind of value the opportunity to have that experience. So then, our next theme was that telehealth encounters really require an orientation to technology-mediated interaction with the patients.

And this wasn't really related to the technology. You know, using webinar technology wasn't the issue. It really was more around a difference in communicating with a patient at a distance. Some students expressed being more nervous during the first encounter.

So again, we had a bit of the sequence kind of impacting the situation, but it really wasn't necessarily related to the telehealth piece. It was more related to them feeling like, you know, "I had a chance to warm up." You know, they came into our study setting, we just gave them a quick orientation. We said, "Okay, do this, then do that."

And so by the time they got to the second encounter, I think they just felt a little more comfortable. And then the third theme was that telehealth encounters really requiring employing kind of a new approach to the clinical encounter. One thing that was different, as Christine described, was that to do the physical assessment, they had to communicate what they wanted, the physical exams, to a nurse, who was one of our BSN nursing students.

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And actually, they did a really, really good job, and the students seemed like they really trusted them. But they still felt like kind of disconnected from having the ability to actually do the physical exam on their own, and they had to rely on somebody else's findings. And another aspect of kind of this theme was just kind of the factors associated with not being in the room with the patient.

This one student talked about the ability to assess the temperature by touching the patients, and another student talked about the importance of body language that they weren't necessarily getting in the remote condition. So, you know, they recognize kind of benefits to being in a room with the patient. But we also kind of want to note that when they do telehealth, they're going to have to learn how to adapt their approach to kind of a new way of doing it.

And then, maybe also not surprising, students found that it was like a little more difficult to build rapport with the patient when they were separated by the webinar technology. And I guess, we feel like students might need to just make a little bit more of an effort, a focused effort to develop a connection when they're using telehealth.

One of the interesting things a couple of the students noted was that being kind of separated from the patient gave them more time to think about what they were going to ask next. Part of that was due to the fact…One person commented on the fact that while the nurse was doing the assessment, she could think about what she was going to do next.

So it just gave them a little more time to organize themselves. So in conclusion, our findings, we think provide evidence to support the use of telehealth encounters as a feasible alternative to face-to-face. Really, not necessarily to replace it, but more to supplement it and provide more opportunities throughout the curriculum for the students to have these kind of authentic learning experiences.

We found no difference in the diagnostic reasoning scores between the telehealth and the face-to-face. But further research is going to be needed in different settings with different types of students to see whether these results generalize. And if we're going to replicate the study to control for the finding that some of the students who experienced the telehealth first had lower DRA scores and were less likely to get the diagnosis, we would probably spend more time maybe introducing the students to the telehealth in advance and what to expect with that.

And then to control for the finding that some students who received the pneumonia case first were less likely to get the diagnosis, we might make more of a concerted effort to align the cases directly with whatever students had recently learned in their curriculum. I think we're going to be early.

Implications for practice and regulation, TSPE can help NP programs kind of manage the costs and challenges associated with the on-campus SP events. As Christine was saying, we have a lot of, you know, kind of competition to our SP space, although we are developing a new lab.

But moreover, for our online students, it's a huge endeavor to bring them to campus. It's expensive for them. It's expensive for everyone. It takes a lot of faculty time. So this is just another, again, an alternative way to kind of add these kind of valuable experiences in perhaps a little more logistically feasible manner.

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And the other thing that we feel is pretty interesting is that this telehealth modality may be a really good way to help prepare the students for telehealth. We hadn't really thought about that in advance. But now that we have our results, especially with the qualitative findings, we feel like we're going to need to develop some, you know, "How to interact with the patient," some basic didactic instruction around that.

But then to put them into these SP experiences remotely will give them that practice in actually conducting these assessments at a distance. And of course, the more we can give students really good, authentic experiences with real patients, the more likely it is that they're going to do well on their licensure exams and in their academic programs.

And so to conclude, as Christine was saying, it's very difficult for us now to find placements a lot of times for our students, clinical placements. So we think that this is a promising modality to increase student opportunities for those experiences.

We have nine minutes left. - [Woman 1] [Inaudible].

- Oh, we're on time?

- You're perfect.

- Oh, I thought…Oh. Okay, great. Questions. We have some time for questions. Sure, ask on. - [Woman 2]

It sounds like…Well, you probably weren't actually having standardized patients that were wheezing or whatever. But is there the possibility within a telehealth encounter for the NP student to actually, you know, be able to hear things like breath sounds?

- Good question. So the students, to be included in the study, they had to have completed a health assessment course. But by the time we recruited most of them, they were between their first and second course in the second phase of their program, where they start to do the clinical portions of their…You know, we have the FNP1 and FNP2, and FNP3, and same thing for the HNP.

And they were either ending their FNP2 or starting their FNP3, for the most part. And then, as far as the hearing the breath sounds, so in our simulation, when it's face-to-face or telehealth, it was almost as if the telehealth was maybe a little bit more authentic. Because when they're face to face, if they try to do an exam with an abnormal finding, they get a card.

So that tells them that there's an abnormal finding. Whereas when a nurse was trained to report the findings, it kind of almost created a little bit of a more realistic situation. But I think it's very promising with the telehealth technology to start to simulate some of these things that would take a little bit more work.

Yeah. - [Woman 3] But we [inaudible].

- We do have these stethoscopes that the students can listen to that mimics like different heart sounds and lung sounds, and I would imagine they could also do that in a telehealth environment too.

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- Sure.

- So I'm sure you could do that in some way. But… - Yep. Yeah.

- …we didn't do that.

- The other thing that we're looking at is trying to equip one of our simulation spaces with some remote monitoring equipment, telehealth remote monitoring equipment. And again, I mean, then they're doing the exam remotely, perhaps, and maybe again, we could figure out how to integrate some simulated technologies to make it more realistic.

- [Woman 4] Hello. This is very interesting to me. I use simulation for community health for students before they go out and do their first home visit. But I put students also randomly in the role of standardized patient, and we've had such incredible results from those folks. And I wonder if you found anything with the students that were the voices of the telehealth mannequin or dummy, if that changed their…You know, they had to study up… Or didn't you have students that were playing?

- No. No. We had actors.

- You had actors?

- Our standardized patients were all actors who were trained.

- But who was the voice for the telehealth folks?

- The same.

- We had a nurse who was trained to actually… - Oh, okay.

- ….just do the physical assessment of the actor.

- Okay.

- Yeah. But the standardized patient was… - They weren't playing the role of the patient though. Okay.

- It was in both encounters.

- I see what you're saying. Okay.

- There was a real standardized patient.

- Maybe just a thought of… - But yes.

- ...using students in those roles, we had unexpected results from that. So it was pretty interesting.

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- I actually, I was just looking for some studies. I didn't read the whole thing, but I saw a couple of instances where that worked really well. It gives the students a whole other perspective then.

- So thank you for the presentation. I found it very beneficial because we're looking at doing kind of an interprofessional telehealth standardized patient between our BSN program and our FNP students, where the BSN will be that nurse that's in there.

But my question, I guess, is more related to the standardized patient. So I would assume that you train the standardized patient based upon their case. But did you also train them in terms of what to expect with telehealth? Or how did you… - Yes.

- …do that?

- Yeah.

- Yeah.

- I don't know if I should… - Yeah, read part of that, maybe.

- I don't know if I should. Oh, it's on. Yes. I mean, they got training, not only in the cases but also how to do the telehealth encounters as well. And I just also wanted to backtrack to using the students as standardized patients, which, you know, that was what we did when we didn't have standardized patients. And you definitely can use them for practice in that because, you know, who has the money to do this?

Since we were doing a research study, we wanted to use the real thing. But one of the things that we did experience way back when and why we like using standardized patients is that the students would cue each other. You know? So it became like less difficult for them to do the exam because they were kind of helpful. You know, they wouldn't have to do the same kind of instructions to someone who didn't really understand what that test was.

- [Woman 5] My question relates directly to what you were just discussing. So it doesn't seem that you actually evaluated their physical assessment skills as part of this, it was just the diagnostic reasoning?

- Right.

- Is that correct?

- Right. Because these students had already passed the health assessment portion of their program. And so what we're really wanting to do is look more at how well they could arrive at a diagnosis, and also their treatment plan. We did also assess their treatment plan as well, you know, just anecdotally.

So it was more looking at those higher-level skills that nurse practitioners need to achieve. Not necessarily the more basic skills about, you know, putting a stethoscope on and listening, and so on, because they've already kind of completed that part of the program.

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- So the reason I'm asking is because every program has a different standard by which you are evaluated...

- Exactly. Right.

- ...for passing your assessment course. And so, you know, I always feel like I'm a little old-fashioned and old when I say, "We used to make them do a head-to-toe, and completely integrated." And now, where I teach, they don't have to do that as part of their final exam. So my concern as we bring them through the rest of the program is, one, did they just learn it by rote to pass the exam or did they really integrate the learning, and can they carry it forward and select the appropriate exam?

So that's why I was curious.

- Well, they did have to select the appropriate exam.

- So in the telehealth setting, what they did is they had to tell the nursing student, you know, "I want you to listen to the lungs," and, you know, which areas, which quadrants. I mean, they had to be very specific about where they had to place the stethoscope. If they wanted special maneuvers, they had to ask for that.

And if they didn't give that instruction, they didn't get that result. So the nursing student was told, "If they don't ask for a specific test, then don't give them the result of the test." And so, especially for the pneumonia case, there were very clear physical findings that indicated pneumonia.

If they didn't ask for those extra physical exam maneuvers, then they wouldn't probably get the diagnosis correct.

- So we did, you know, sort of embed that piece of it into the case so that we were sort of testing their ability to interpret those types of findings, and then also know what type of physical exam to do.

- You can correct me if I'm wrong. But in addition, after health assessment, our students have to come in and do a head-to-toe, don't they, with the standardized patients...

- Yeah.

- …for what they call the "test-outs" that they're so afraid of.

- Yeah.

- Why they would [crosstalk].

- But if they just…- It's still the difference between preparing intensely for that test-out, and then…- No, but applying it. Yeah.

- …how integrated it is with when you bring it forward into the primary care courses.

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- Right.

- And knowing what to do, and do they remember how to do it when you get actually into the clinical setting?

- Exactly. And that was embedded in that. And that's like one of the items for the diagnostic reasoning assessment is doing the appropriate physical exam is part of that.

- Thank you.

- Oh, so we have to stop. Thank you.

- Thank you.

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