

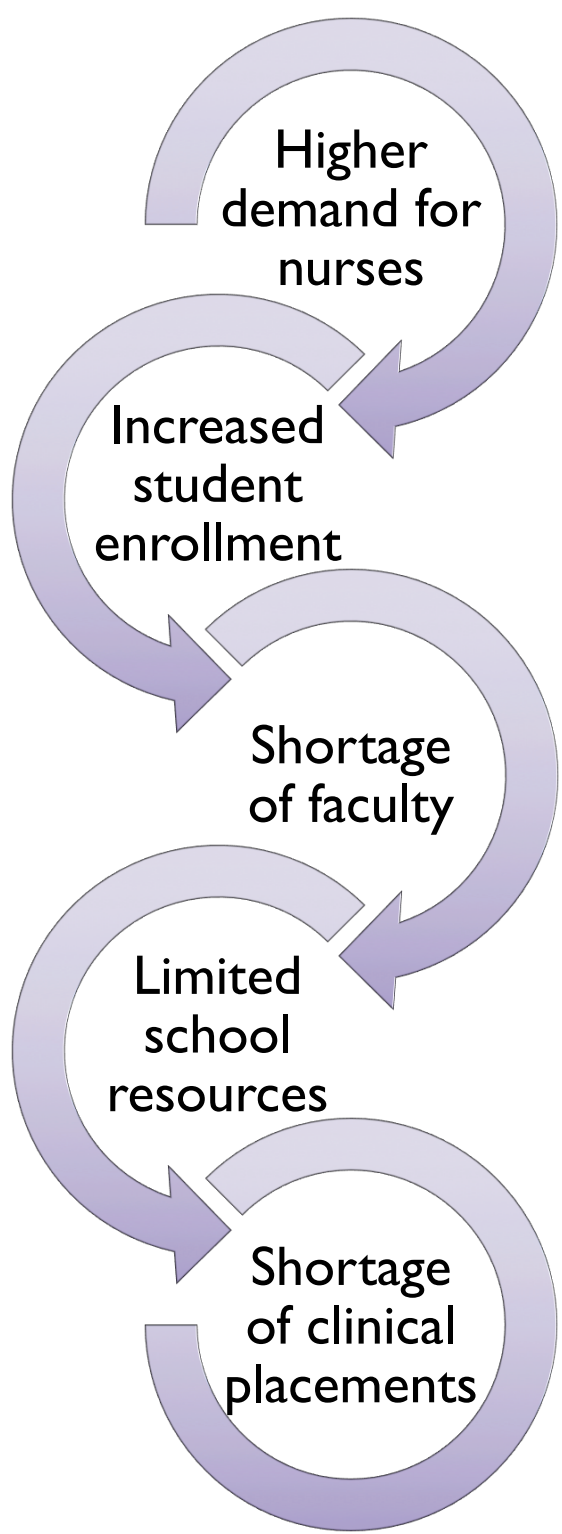


# Using virtual patient simulation in substitution of traditional clinical hours in nursing education

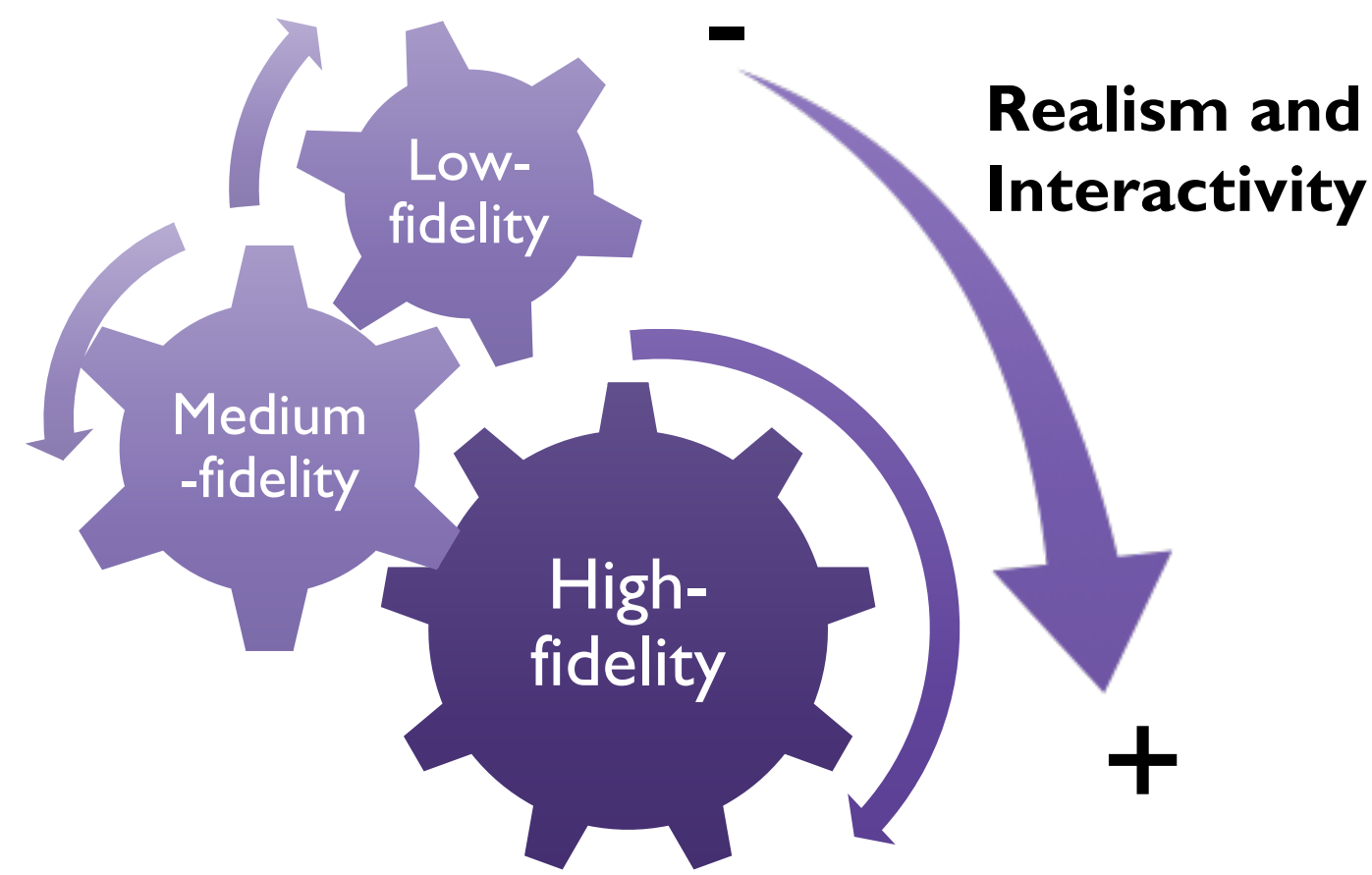
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## BACKGROUND

### Challenges in Nursing Education



### Simulations



### High-fidelity Virtual Patients



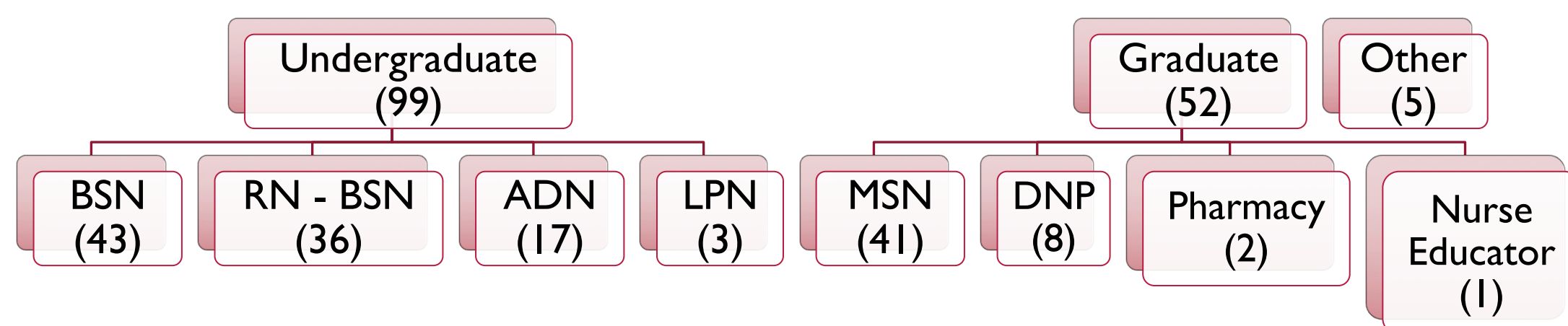
- Safe practice environment
- Immediate feedback
- Transformative learning
- Student engagement
- Clinical reasoning
- Cost-effectiveness

## METHODS

### Purpose

- Estimate how many traditional clinical hours undergraduate and graduate nursing faculty are replacing with virtual patient simulations.
- Examine the role that use case, length of use, and mode of delivery may play for undergraduate and graduate nursing faculty who are replacing traditional clinical hours with virtual patient simulations.

### Participants (n = 156)



### Materials

- The DCE is an online, asynchronous virtual patient clinical simulation that provides an immersive experience designed to improve students' assessment skills and clinical reasoning through the examination of virtual patients.
- Across different assignments, students can practice taking a detailed health history, perform physical assessments in single-system exams, and conduct focused exams to rule out causes of a virtual patient's chief complaint.
- After each assignment, students complete post-exam activities where they can apply content knowledge as well as self-reflect on their performance.
- When students submit their assignment to their instructor, they receive a score and immediate feedback on several aspects of their performance, including subjective data collection, objective data collection, and on their ability to identify opportunities to engage in therapeutic communication. These performance assessment instruments have been previously validated for nursing accuracy and learning value by several subject-matter experts.

### Measures

- 12-item end-of-course online survey.
- Explored different topics ranging from how faculty used each of the assignments in class (e.g., as part of the lecture led by instructor or as classroom group activity led by students) to how they used it to assess student performance (i.e., open practice, formative pass/fail or lab pass, summative with letter grade, or test).
- Included one closed-ended question directed to the use of the DCE as a replacement of traditional clinical hours: "How many clinical hours (if any) did the DCE replace?"

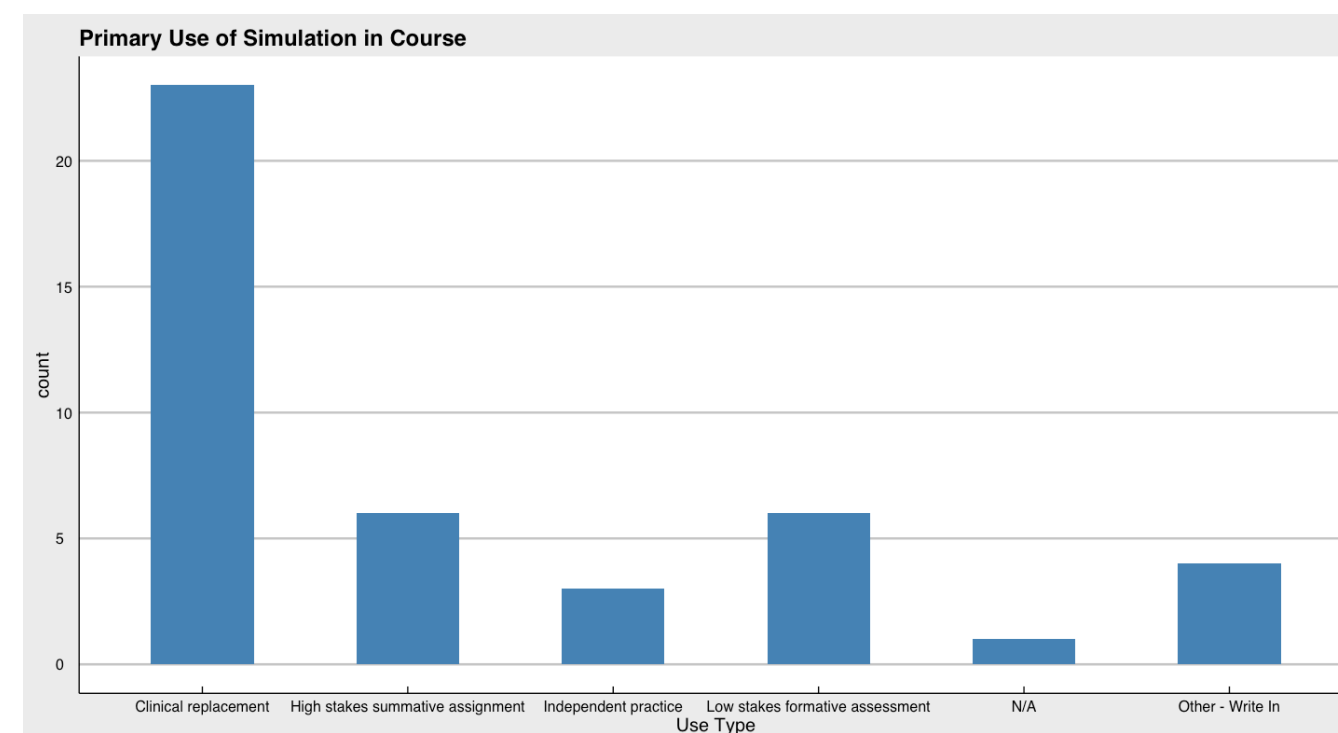
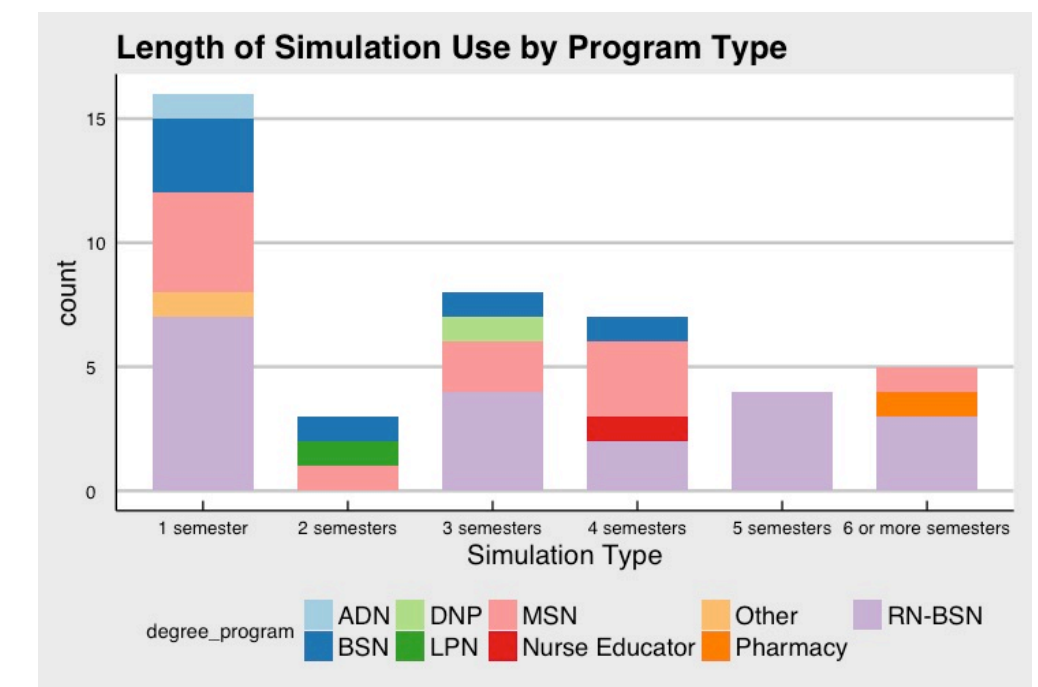
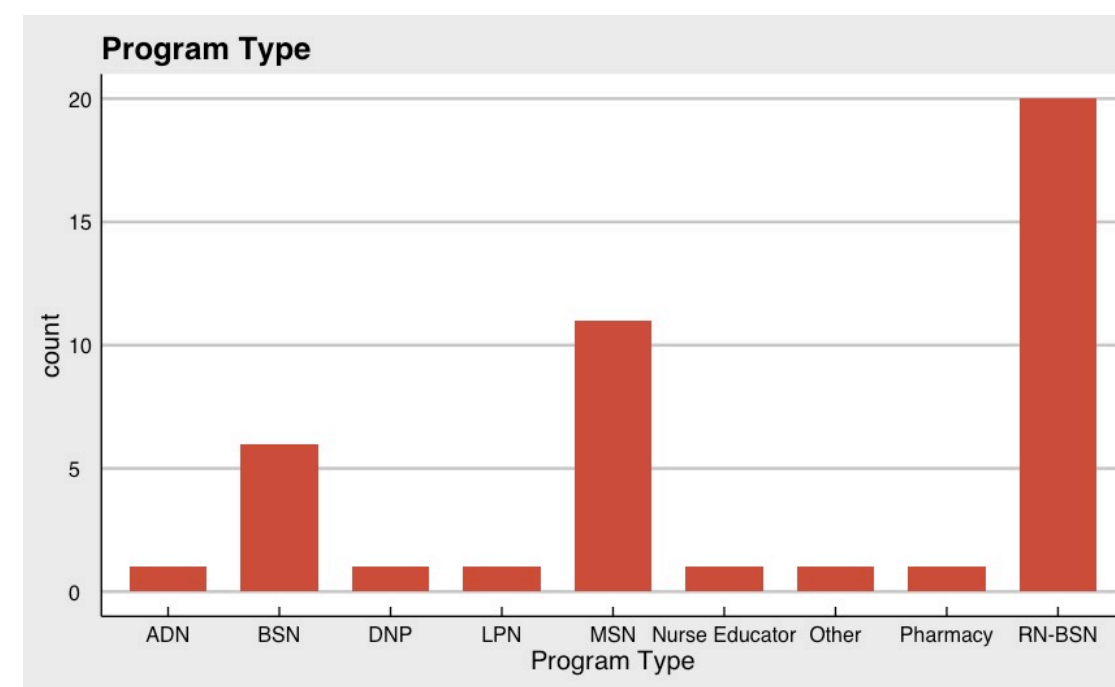
### Procedure

- Participating faculty received a link to an online survey on SurveyGizmo shortly after their course ended.
- Survey was distributed on a rolling basis between September and December of 2017.

## RESULTS

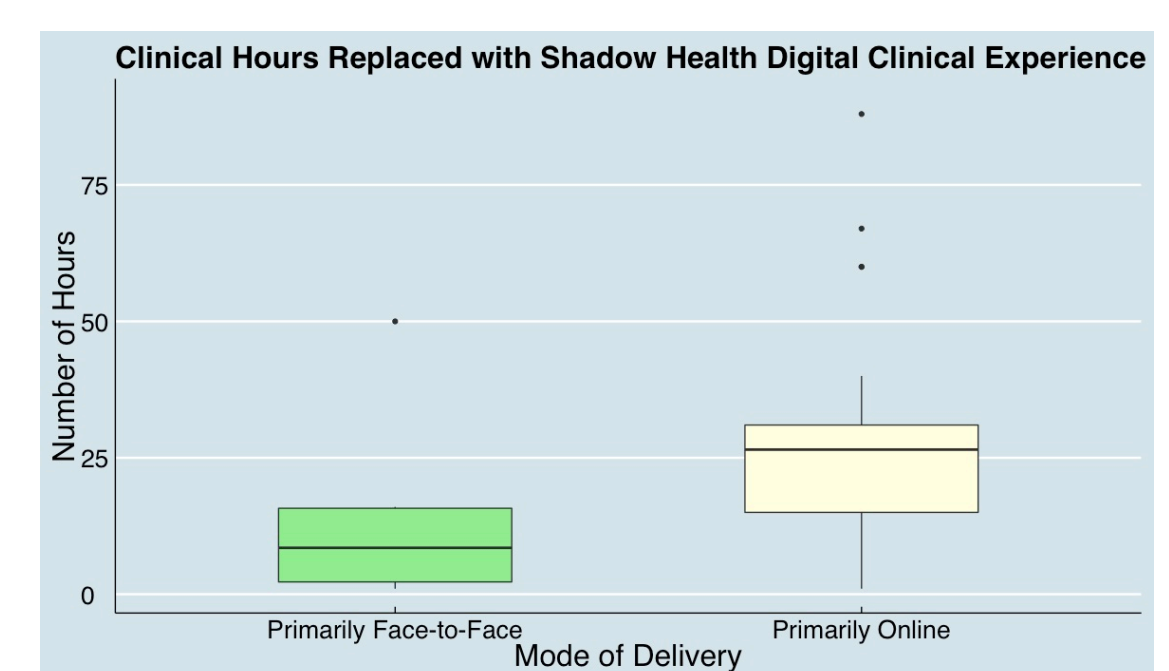
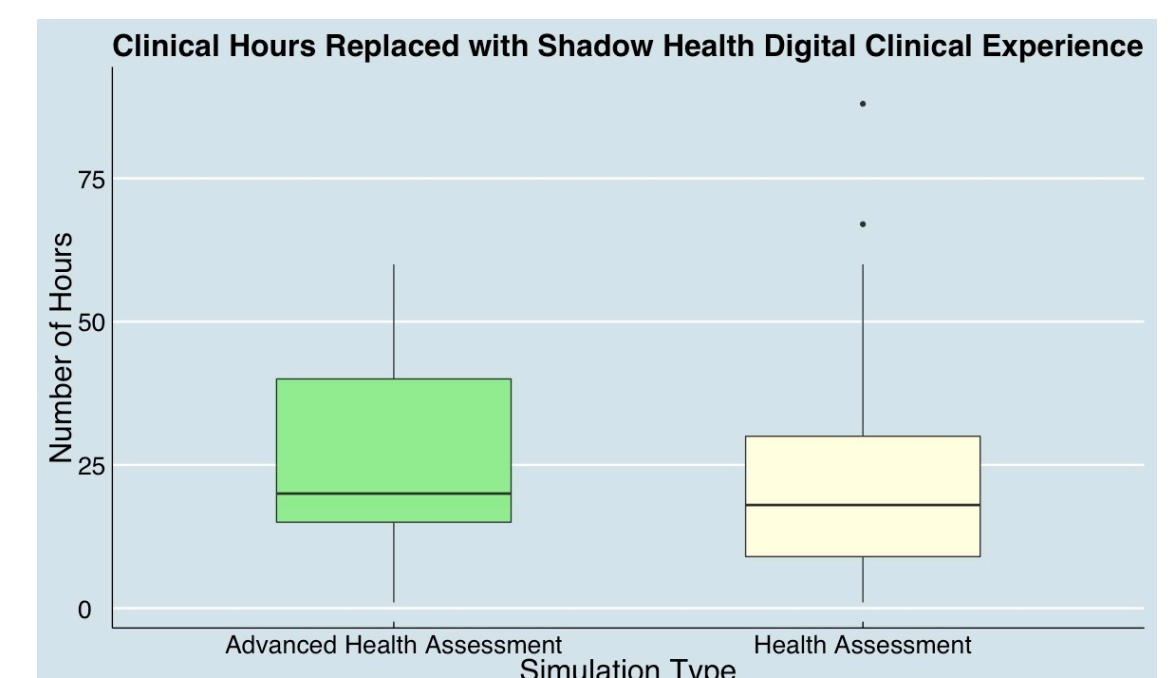
Simulation type	Yes	No
Health Assessment	14 (24%)	44 (76%)
Adv. Health Assessment	29 (33%)	58 (67%)
Undergraduate Pharmacology	2 (18%)	9 (82%)
<b>Total</b>	<b>45</b>	<b>111</b>

- 29% of the faculty (n = 45) surveyed reported that they substituted a portion of the required clinical hours with the DCE.
- Compared to undergraduate faculty (24%), a higher proportion of graduate faculty (33%) replaced traditional clinical hours with the DCE.



- More RN-BSN faculty used the DCE to account for hours of traditional clinical hours, followed by MSN and BSN faculty.
- The majority of faculty who replaced traditional clinical hours with the DCE were first-time users.
- Faculty who replaced traditional clinical hours with the DCE adopted the simulation mainly for that purpose, followed by use as low-stakes formative assessment (e.g., lab pass) and high-stakes summative assessment (e.g., test).

- The median number of traditional hours replaced by faculty using the health assessment or advanced health assessment simulation was 20 hours.
- More faculty using the advanced health assessment simulation reported replacing 20 hours or more in comparison to faculty using health assessment.
- The median number of traditional hours replaced by faculty who used the DCE primarily in an online program was 30 hours, while for faculty who used the DCE primarily in a face-to-face program was 8.5 hours.



## CONCLUSION

- The National Council for State Boards of Nursing Simulation (NCSBN) Study provided evidence that substituting high-quality simulation experiences for traditional clinical hours results in comparable educational outcomes in undergraduate nursing clinical courses (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014).
- We found that faculty teaching primarily in online RN-BSN and MSN programs were using the DCE to replace required traditional clinical hours. Most of these faculty were first-time users of the simulation.
- Due to persistent shortages of clinical placements and faculty, undergraduate nursing programs are in an increasing need of a variety of simulation modalities to achieve their learning objectives assessment outcomes.
- Virtual patient simulations presents a viable, flexible, and standardized option for faculty when it comes to replace traditional clinical hours.
- The findings of this study can be used to add additional evidence to case for using virtual patients in nursing education, but more importantly, they can be used to help faculty better frame the design, use, and value of virtual patients for different student learner populations.

