Introduction
A major shift for nursing programs was needed during the academic year of 2019-2020, when on March 13, 2020, a national emergency was declared in the United States concerning the SARS-COVID-19 outbreak.

Nurse educators had to implement virtual simulation in undergraduate and graduate programs to replace clinical education. Understanding the current state of nurse educator’s use, perceptions, and barriers to implementing virtual simulation during the pandemic is lacking. Optimizing computer-based virtual simulation as pedagogy and improving student learning outcomes may be linked to how nursing faculty perceive the effectiveness of simulation as a teaching method.

The primary purpose of this study was to explore the types and amount of virtual simulation used by nurse educators before and during the COVID-19 pandemic. Secondary purposes of the study were to explore nurse educator’s perceptions of the effectiveness of virtual simulation, barriers/challenges faced when implementing virtual simulation, and perceived improvement of student learning outcomes during the COVID-19 pandemic when utilizing virtual simulation to replace clinical education.

Research Questions
• How do faculty describe their use of virtual simulation before and during the COVID-19 pandemic?
• How do faculty describe the barriers/challenges they faced in implementing virtual simulation during the COVID-19 pandemic?
• How do faculty describe the effectiveness of virtual simulation in substituting for clinical education during the COVID-19 pandemic?
• What are faculty perceptions about the usefulness of virtual simulation in improving student learning outcomes during the COVID-19 pandemic?

Methods
A quantitative descriptive methodology with open-ended questions guided this study. The research design included a survey that discovered nurse educators’ decisions related to virtual simulation utilization. Open-ended questions at the end of the survey were designed to provide information about nurse educator’s best practice and perceptions related to virtual simulation pre and during COVID-19 and student learning outcomes.

The sample included 126 full-time nurse educators employed in a public or private accredited nursing program in the northeast region of the United States. The region includes Maine, New York, New Jersey, Vermont, Massachusetts, Rhode Island, Connecticut, New Hampshire, and Pennsylvania.

Results
Results suggest virtual simulation was used more during the COVID-19 pandemic and had positive effects on student learning outcomes. During COVID-19, virtual simulation use increased to 98.29%. Most participants reported virtual simulation improved student’s affective learning, cognitive learning, and psychomotor skills (79.2%). 20.8% did not know or could not evaluate if learning within the three domains had taken place.

Significant statistical associations between virtual simulation and emotional connection of students were found compared to other areas of affective learning. Associations were discovered between virtual simulation and cognitive learning in the areas of discovery learning and experiential learning when substituting for clinical education. When comparing psychomotor skills, a statistical association exists between virtual simulation effectiveness and clinical/team performance and communication when replacing clinical education with virtual simulation.

Conclusions
This study lent itself to discovering adequate ways to evaluate student learning through virtual simulation, and how to best implement virtual simulation into nursing curricula that will promote critical thinking and add to the body of knowledge that a graduate nursing student must have. More research is needed to explore the effectiveness of using virtual simulation. Nursing researchers and nurse educators need to understand the usefulness and limitations of virtual simulation research, as this effort may make a unique contribution to nursing education, policy, funding decisions, and enable productivity of evaluation of the nurses of the future.

The pandemic threatened to upend nursing education. However, nurse educators and universities are incredibly resilient and worked together to navigate disruptions and ensure students still achieved learning objectives and moved forward in their educational and professional endeavors. When nurse educators look back and ask “what did we do? What did our efforts provide for our students?”, they will find that many of the implemented changes helped overcome obstacles during the pandemic and are likely to be improved upon and become part of nursing education indefinitely.

Bibliography
Dr. Karen Braccialarghe, Ed.D., RN, is the BSN Program Director and Assistant Clinical Professor at the University of Hartford. Dr. Braccialarghe’s areas of interest within nursing education research include improving learning outcomes through simulation and improving nursing student’s transition to practice. For the past twenty-one years, Dr. Braccialarghe’s bedside nursing career has been in pediatric critical care. She is a member of the Association of Critical Care Nurses.