

ORIGINAL RESEARCH

A qualitative analysis of undergraduate nursing students in a breast-feeding simulation that utilized standardized patients

Valerie A. Esposito Kubanick*, Vivian Carrasquilla-Lopez, Allen Reji

York College, City University of New York, Jamaica, NY, United States

Received: April 18, 2026

Accepted: July 31, 2026

Online Published: August 24, 2026

DOI: 10.63564/jnep.v16n9p15

URL: <https://doi.org/10.63564/jnep.v16n9p15>

ABSTRACT

Background and objective: Breastfeeding is an essential aspect of infant and maternal health, offering a multitude of short-term and long-term benefits. It provides infants with essential nutrients, antibodies, and immune protection, contributing to reduced rates of infectious diseases and promoting healthy growth and development. According to a policy statement from the American Academy of Pediatrics (Younger-Meek & Noble, 2022) some of the benefits of breastfeeding for infants are improved neurological developmental outcomes and many other benefits. Nursing students often do not have the opportunity to practice hands-on lactation management. Using Standardized Patients (SPs) during simulation as an educational strategy provides realistic clinical situations and allows the opportunity to practice and learn in a safe environment (Madriz et al., 2023). This study recognized the pivotal role that healthcare professionals play in promoting and supporting breastfeeding among new mothers. By equipping healthcare students with the knowledge and skills necessary to engage in effective breastfeeding teaching and support, this study addressed the lived experiences of baccalaureate nursing students in a breast-feeding simulation experience using SPs. Including SPs in breastfeeding nursing student/patient experience in the curriculum for pre licensure nursing students increased knowledge of the benefits of breast feeding and help to prioritize teaching new mothers. The purpose of this study was to enhance student understanding of breastfeeding by employing SPs. Benefits of this research included improvement of the students' competence in breastfeeding, providing effective breastfeeding teaching to new mothers through empathizing and providing support in challenging breastfeeding issues. The results may also contribute to the advancement of healthcare education and the promotion of breastfeeding as a fundamental component of maternal and infant well-being via SPs. The knowledge gained by the researchers will be disseminated in peer reviewed journals and presented at professional conferences.

Methods: This research employed a descriptive phenomenological approach and qualitative design. Recruitment was through convenience and snowball sampling of pre licensure undergraduate nursing students at a New York City college nursing department, nine participants in junior year. Qualitative data collection was done one-on-one with an interview lasting approximately 30 minutes via Zoom until saturation. The interviews were done post interaction of the participant (student) with an SP prepared as a new breastfeeding mother. Data analysis was done using NVivo software and inter-rater reliability to search for codes and themes. A hermeneutic approach and bracketing were used.

Results: The participants all revealed that education in breastfeeding during coursework was adequate, however the SP experience was beneficial to student knowledge development, patient education and decreasing anxiety in the students. Being able to educate an SP in a safe environment was favorable to the participants. The SP experience improved student/patient teaching outcomes. NVivo data analysis and researcher coding revealed four main themes: preparedness, confidence, lower anxiety and knowledge increase.

*Correspondence: Valerie A. Esposito Kubanick; Email: vespositokubanick@gmail.com; Address: York College, City University of New York, Jamaica, NY, United States.

Conclusions: Pre licensure nursing students verbalized feeling more prepared, knowledgeable, confident and less anxious interacting with new mothers regarding breastfeeding education after participating in a simulation using SPs. The new mothers need more lactation education, and the students were able to provide it. One concept that some of the participants revealed and is worth noting was cultural preferences. Although not an emerged theme, some of the participants mentioned cultural humility was important to be aware of during the breastfeeding patient education process. The implications for these results include need for nursing curriculum to include using SPs in simulation, need for hospitals to employ more lactation education with new mothers and more research with practicing nurses in postpartum to explore their confidence in teaching breastfeeding to new mothers.

Key Words: Breastfeeding, Nursing education, Pre-licensure students, Standardized patients, Undergraduate nursing

1. INTRODUCTION

Maternal-child health focuses on the well-being of women during pregnancy, childbirth, and the postpartum period. Breastfeeding is an essential aspect of infant and maternal health, offering a multitude of short-term and long-term benefits. It provides infants with essential nutrients, antibodies, and immune protection, contributing to reduced rates of infectious diseases and promoting healthy growth and development. According to a policy statement from the American Academy of Pediatrics^[1] some of the benefits of breastfeeding for infants are improved neurodevelopmental outcomes and many other benefits. This includes a decreased risk of developing asthma, sudden infant death syndrome (SIDS), leukemia, childhood obesity, and type 1 and type 2 diabetes among many other disorders. For mothers, breastfeeding is associated with a decreased risk of postpartum depression, breast cancer, and type 2 diabetes, among other health advantages.^[2] Despite this well-documented evidence, global breastfeeding rates fall short of optimal levels, resulting in missed opportunities to improve public health outcomes. Nurses are the most significant group of health care professionals capable of providing valuable support to new parents during this period. However, the literature suggests that healthcare professionals may not have the knowledge to effectively support women and breast feeding.^[3]

1.1 Benefits of breastfeeding: Infant and mother

Mulro-Valdez et al. (2023)^[4] examined how breastfeeding impacts health outcomes in both infants and mothers, with a particular focus on the development and functionality of vital organs. Findings included how breast milk provides essential nutrients and bioactive components that are associated with reduced risks of infectious diseases, obesity, asthma, and respiratory infections in infants, and lower risks of ovarian and breast cancer, type 2 diabetes, and high blood pressure in mothers. Also explained were factors such as maternal diet and delivery mode influence breast milk composition and how these components affect the brain, lungs, liver, kidneys, heart, and gut microbiota in children. The researchers provided a comprehensive overview of the physiological health benefits of breastfeeding that healthcare profession-

als could use when educating and supporting new mothers. O'Sullivan and Scott (2023)^[5] looked at benefits of breastfeeding for both infants and mothers, including improved immune protection, reduced risk of chronic diseases, and enhanced maternal-infant bonding. The researchers outlined the role of nurses in supporting breastfeeding through education, encouragement, and addressing common challenges such as latching difficulties and maternal concerns. The importance of early support and effective communication to promote successful breastfeeding practices was emphasized. The practical role of nurses in breastfeeding education and support, which aligns with the need to prepare healthcare students to effectively assist and educate new mothers was highlighted. Miolski (2023)^[6] looked at the multiple short term and long term health benefits of breastfeeding for both infants and mothers. For infants, it highlights how breast milk's unique composition, including human oligosaccharides, immunoglobulins, and fatty acids – supports optimal growth, shapes the gut microbiome, and reduces the incidence of respiratory and digestive infections, food allergies, and autoimmune diseases. Also outlined were maternal benefits such as enhanced uterine involution, reduced postpartum bleeding, faster return to pre pregnancy weight, and lowered risks of reproductive cancers, osteoporosis, and metabolic syndrome. The research on breastfeeding is important to education because it provides broad evidence base on the physiological advantages for mother and child that can enhance healthcare students' knowledge when teaching and counseling new mothers.

According to a review by Golob (2022)^[7] the multiple health benefits that mother's milk provides to infants include optimal growth, appropriate weight gain, enhanced neurological development, and protection against both acute and chronic illnesses. The unique components of breast milk, such as anti infective and anti inflammatory factors, along with skin to skin contact during breastfeeding, support immune development. The process of breastfeeding also reduces the risk of diseases like otitis media, diarrheal illness, respiratory infections, sudden infant death syndrome, inflammatory bowel disease, leukemia, diabetes, obesity, hypertension, asthma,

and atopic dermatitis. Prentice (2022)^[8] stated global trends and evidence on the benefits of breastfeeding for both infants and mothers, noting how 20th century social changes reduced breastfeeding rates in many countries and prompted research into its protective effects. A synthesis of recent meta analyses showed substantial benefits for infants, including reduced diarrhea and respiratory infections, lower mortality in low income settings, protection against otitis media, likely reduced type 2 diabetes and obesity, and potential IQ improvements; for mothers, breastfeeding is associated with lowered risks of breast and ovarian cancer. The review underscores international advocacy efforts such as the WHO International Code of Marketing of Breast milk Substitutes and the Innocenti Declaration, which have helped to support breastfeeding practices.

1.2 Longterm benefits

Lewandowska et al. (2024)^[9] synthesized findings from approximately 30 studies on the relationship between breastfeeding and later health outcomes, focusing on obesity risk, metabolic health, and cardiovascular disease prevention. The authors found evidence that longer durations of exclusive breastfeeding were associated with healthier weight trajectories, improved metabolic outcomes such as lower body mass index, and reduced risk for type 2 diabetes and cardiovascular diseases later in life. Bioactive elements in breast milk and breastfeeding behaviors that influence early metabolism, appetite regulation, and energy balance were proposed as potential mechanisms for these health benefits. A broad overview of long term protective health effects of breastfeeding can inform breastfeeding education and emphasize not only immediate infant health but also prevention of chronic health conditions across the lifespan.

1.3 Cognitive/Emotional advantages

Breastfeeding offers long term protective health effects compared with formula feeding. Breastfeeding education provides evidence of the physiological and developmental benefits of breastfeeding that healthcare professionals should understand when teaching and supporting new mothers.^[9] Using a cross sectional design Malhi et al. (2023)^[10] examined how the duration of breastfeeding, early home cognitive stimulation, and maternal demographic factors relate to cognitive development in toddlers aged 12–30 months. Using maternal questionnaires and the Developmental Assessment Scales for Indian Infants (DASII), the researchers found that longer total duration of breastfeeding was significantly associated with higher mental development scores, and toddlers with higher home stimulation scores had better cognitive outcomes. Multivariate analysis indicated that breastfeeding duration, the total home stimulation score, and child age to-

gether explained a substantial portion of variance in toddlers' cognitive functioning. The results emphasized the combined influence of breastfeeding and parental stimulation on early cognitive development, underscoring the importance of both nutritional and environmental factors in infant brain development. Synthesized research published between 2012 and 2022 on associations between breastfeeding and neurodevelopmental outcomes, including cognition, behavior, and executive function in children were explored by Mc Gowan and Bland (2023).^[11] Twenty three studies were examined, with most showing a modest dose dependent positive association between longer durations of breastfeeding and higher cognitive scores; a subset of studies also reported better behavioral outcomes, while evidence for executive function benefits was more limited. The authors noted that many studies controlled for confounders like maternal IQ and home environment, though methodological variation and recall bias remain limitations. This showed relevance to research on breastfeeding education because it highlighted recent evidence suggesting breastfeeding may be linked with improved cognitive and behavioral outcomes in children, reinforcing why breastfeeding support and education are key components of maternal child health practice.^[11] Modak et al. (2023)^[12] reviewed the psychological advantages of breastfeeding for both mothers and infants, beyond its nutritional role and highlighted how hormonal factors such as oxytocin and prolactin enhance maternal–infant bonding and attachment, reduce risk of postpartum depression and anxiety, and increase maternal confidence and emotional well being. In infants, interaction during breastfeeding supports cognitive and emotional development, immune system function, and stress regulation. The authors emphasized the need for increased advocacy, education, and support to normalize breastfeeding and promote its psychological benefits. The information is relevant because it underscores the emotional and mental health dimensions of breastfeeding that healthcare professionals should address in comprehensive breastfeeding education and support. According to Prentice (2022),^[8] global trends and evidence on the benefits of breastfeeding for both infants and mothers, noting how 20th century social changes reduced breastfeeding rates in many countries and prompted research into its protective effects. A synthesis of recent meta analyses showed substantial benefits for infants, including reduced diarrhea and respiratory infections, lower mortality in low income settings, protection against otitis media, likely reduced type 2 diabetes and obesity, and potential IQ improvements; for mothers, breastfeeding is associated with lowered risks of breast and ovarian cancer. The review underscores international advocacy efforts such as the WHO International Code of Marketing of Breast milk Substitutes

and the Innocenti Declaration, which have helped to support breastfeeding practices. Tucker and O'Malley (2022)^[13] researched links to breastfeeding with maternal mental health outcomes, including effects on postpartum depression, anxiety, and maternal–infant bonding. The evidence suggested that breastfeeding may be associated with lower rates of postpartum depressive symptoms and improved emotional well being, potentially through hormonal pathways (e.g., oxytocin release) and enhanced maternal confidence and bonding experiences. The authors also highlighted that difficulties with breastfeeding can be linked to increased stress and negative psychological outcomes, emphasizing the need for adequate support. Breastfeeding not only benefits physical health but also may support maternal mental health — a key consideration for healthcare professionals in breastfeeding education and support interventions.

1.4 Importance of patient education

Sylla et al. (2021)^[14] explored factors associated with breastfeeding practice among mother–newborn pairs in a neonatal intensive care unit (NICU) in Casablanca, Morocco. Data from 107 mother–newborn pairs showed that about 77% of mothers practiced breastfeeding; factors significantly associated with breastfeeding included urban residence, marital status, prior information received about breastfeeding, and higher breastfeeding knowledge scores, as well as newborn characteristics such as reason for hospitalization and gender. Findings showed that mothers with less knowledge and limited prenatal breastfeeding information were less likely to breastfeed in the NICU setting. Inadequate breastfeeding support and education for healthcare professionals have been identified as key contributors to the persistence of suboptimal breastfeeding rates. Symington (2024)^[15] indicates that healthcare providers who lack the necessary knowledge and skills in breastfeeding support may inadvertently undermine maternal confidence and contribute to early breastfeeding cessation. There is an urgent need to enhance the training and education of healthcare students in breastfeeding management and education to better prepare them for their roles as advocates and educators for breastfeeding mothers.

1.5 Simulation and standardized patients

Rhodes and Burgess (2018)^[16] revealed a deficiency in nurses' knowledge of breastfeeding, with many nursing programs lacking comprehensive coverage of this essential skill in their curriculum. Recognizing a lack of opportunities for nursing students to practice breastfeeding in a clinical setting, a breastfeeding Standardized Patient (SP) can be used to support students' education. Standardized Patients as an education method has been shown to improve communication skills, allowing students to practice and learn in a

non-threatening environment.^[17] The use of SPs in nursing education as a pedagogical model has gained widespread acceptance, with various simulators proving realistic patient care experiences.^[18] However, the specific domain of breastfeeding education often receives limited focus. To bridge this gap, it is crucial for nursing faculty to devise innovative approaches to cultivate effective learning in both clinical practice and classrooms. Nursing students often do not have the opportunity to practice hands-on lactation management. This may leave students feeling uncomfortable in assisting a new mother to breast feed her newborn. Using SPs as an educational strategy provides realistic clinical situations and allows the opportunity to practice and learn in a safe environment.^[19]

Donovan et al. (2026)^[20] reviewed mechanisms through which simulated patients influence the transfer of learning from healthcare education into clinical practice. Forty three studies were analyzed to identify how contextual elements (such as learner preparation and prior experience) and mechanisms (including realism, authenticity, and safety) affect outcomes like increased self efficacy, confidence, knowledge, and skills that are transferable to real world clinical settings. The review found that simulated patients can create highly realistic and safe environments, promoting engagement and feedback that may help learners apply skills in practice, though more research is needed to understand these effects fully. The research provided theoretical and empirical insight into how simulation, especially with simulated patients, supports learning that extends beyond classroom settings into clinical practice, which can inform the use of SPs in specialized education areas like breastfeeding support and communication skills. Johnson et al. (2020)^[21] examined how using a SPs in a simulated clinical case affected first semester undergraduate nursing students' self confidence, satisfaction, and communication compared to a high fidelity manikin simulation. One hundred students were randomly assigned to either the SP or manikin group and completed post simulation surveys measuring confidence, satisfaction, and communication skills. Results showed that students who worked with an SP reported significantly greater satisfaction and improved communication, while self confidence did not differ statistically between groups. Students' reflective comments also tended to be more positive in the SP group, suggesting enhanced perceptions of the learning experience. The results provided evidence that SP simulations can improve nursing students' communication and satisfaction outcomes in early clinical education. Lyedon et al. (2025)^[22] explored how nursing students can act as SPs in simulation-based learning. Students enrolled in an elective SP course were trained to enact clinical scenarios while their peers partici-

pated as nurses. The study found that both SP students and participants demonstrated improved knowledge, reinforced learning, and enhanced critical thinking. This article is relevant to the research because it demonstrates how SPs can be used in nursing education to provide realistic, hands-on learning experiences, which can be applied to maternal-child and breastfeeding training scenarios. Nawathe and Herrington (2024)^[23] reviewed the design, implementation, and benefits of standardized patient (SP) programs for teaching healthcare communication skills. It outlines key phases of SP programs such as recruitment, onboarding, training, continuous quality improvement, and engagement strategies to keep SPs effective in simulation. The authors showed how SP-led sessions provide a flexible and controlled experiential environment where learners can practice both technical and non technical skills and receive structured feedback. Challenges like resource allocation and curriculum integration and offers best practice strategies for sustaining a high quality SP program were also in the findings. This source is relevant because it provides a comprehensive overview of how SP programs are structured and optimized to enhance communication education in healthcare training, informing simulation methods in nursing curricula. Reza and Algamdi (2025)^[24] examined community health nursing students' perceptions of standardized patient simulations in relation to self confidence, satisfaction, and perceived learning effectiveness. A quasi experimental design without a control group was conducted with 76 fourth year nursing students participating in three weeks of simulation sessions using standardized patients. Results indicated generally high levels of student satisfaction, self confidence, and perceived learning effectiveness across active learning, collaboration, diverse learning methods, and fidelity to real life scenarios; correlations showed positive associations among satisfaction, self confidence, and fidelity. Students also provided open ended feedback emphasizing the realism of scenarios, increased confidence, and enhanced communication and teamwork skills. The research demonstrated the use of standardized patient simulations positively influenced key educational outcomes, which can inform the use of SPs in broader nursing education settings.

1.6 Purpose

The researchers recognized the pivotal role that healthcare professionals play in promoting and supporting breastfeeding among new mothers. By equipping healthcare students with the knowledge and skills necessary to engage in effective breastfeeding teaching and support, this research addressed the lived experiences of baccalaureate nursing students in a breast-feeding simulation experience using SPs. Including SPs in breastfeeding nursing student/patient experience in the curriculum for prelicensure nursing students may increase

knowledge of the benefits of breast feeding and help to prioritize teaching new mothers. The purpose of this study was to enhance student understanding of breastfeeding by employing SPs. Benefits of this study include possible improvement of the students' competence in breastfeeding, providing effective breastfeeding teaching to new mothers through empathizing and providing support in challenging breastfeeding issues. Findings may also contribute to the advancement of healthcare education and the promotion of breastfeeding as a fundamental component of maternal and infant well-being via SPs. The knowledge gained in this study will be disseminated by the researchers in peer reviewed journals and presented at professional conferences.

2. METHODS

This research employed a descriptive phenomenological approach and qualitative design. Recruitment of eleven students' participants was through convenience sampling of prelicensure undergraduate nursing students at a public New York city university nursing department and included snowballing. Nine student participants were included to receive data saturation. Qualitative data collection was done one-on-one with a semi-structured interviews lasting approximately 30 minutes via Zoom. Each interview was audio recorded and transcribed. The interviews were done post interaction of the participant (student) with an SP prepared as a new breastfeeding mother. Open-ended, and probing questions were used, this promoted participants' narrative and allowed time for the researchers to ask for clarification of topics. The description of each student nurses' experience of the interactive simulation using SPs was explored.^[25] Participants were asked to describe their thoughts and feelings before, during, and after the simulation experience. Data analysis was done using NVivo software and inter-rater reliability to search for codes and themes. A hermeneutic approach and bracketing were used.

2.1 Methodological rigor

The researchers used the criteria from Lincoln and Guba (1985)^[26] for trustworthiness in qualitative research: dependability, confirmability, credibility and transferability. Each line was reviewed on each transcript according to the 7 steps of the Interpretative Phenomenological Analysis (IPA) method outlined by Smith et al. (2022)^[27] to ensure dependability. One way to possibly enable transferability is through dense description of the data. Protracted involvement with the data, many transcript reviews along with listening to the interviews, and triangulation, helped to promote credibility.

2.2 Protection of human subjects

Approval was obtained from the Institutional Review Board (IRB) of the City University of New York (number 2024-0680) before beginning the research. Verbal and written informed consent were obtained from the participants and permission to audio-record the interviews. Confidentiality, freedom to withdraw, risks, and benefits were discussed before data collection. Audio recordings and transcripts were coded with Student Nurse (SN) A, B, etc. and secured for privacy and confidentiality. Participants were informed of the possibility that the study may be published, however, no identifying information would be used. The participants' emotional state was observed during the interview and researchers were alert to any signs of stress. The researchers confirmed confidentiality with the participants and emphasized that the participants were free to stop at any time. Participants were made aware that their anonymity would be maintained for any publication or presentation of the research.

3. RESULTS/DATA ANALYSIS

Demographic data were obtained from each participant in the study (see Table 1). Data was analyzed using audio recordings and verbatim transcripts. Smith et al. (2022)^[27] method was used; Interpretative Phenomenological Analysis (IPA) for data analysis. This method aligns the philosophical underpinnings of hermeneutic phenomenology. A self-reflection process was initiated prior to data collection and continued throughout the research. Developing an awareness of personal perspectives and dwelling on pre-understandings was employed. IPA analysis starts with thorough review of the original interview transcript and audio to gain familiarity with the subject. Keywords are underlined and exploratory notes are made in the margins, which are then synthesized into experiential statements. These statements are mapped to show how they form clusters, labeled as Personal Experiential Themes (PETs). Researchers organize PETs into sub-themes under Group Experiential Themes (GETs), dynamically refining and connecting material to highlight meaningful patterns.

The participants all revealed that education in breastfeeding during coursework was adequate, however the SP experience was beneficial to student knowledge development, patient education and decreasing anxiety in the students. Being able to educate an SP in a safe environment was favorable to the participants. The SP experience improved student/patient teaching outcomes. One concept that some of the participants revealed and is worth noting was cultural preferences. Although not an emerged theme, some of the participants mentioned cultural humility was important to be aware of

during the breastfeeding patient education process.

NVivo data analysis and researcher coding revealed four main themes: preparedness, confidence, lower anxiety and knowledge increase.

Table 1. Demographic data of student nurse participants

Categories	Levels	Totals
Age	19-21	1
	22-24	4
	25-older	6
Gender	Male	
	Female	11
Ethnicity/Race	Indian/Guyanese	1
	Pakistan	1
	Caucasian	
	Black	2
	South Asian	1
	Hispanic	1
	Asian	2
	Chinese	1
	Jamaica	2
	Race not identified	1
Other degrees held	Associate's degree	1
	Bachelor's degree	2
	MS or higher	1
	N/A	7
Years as a student	1-2	3
	3-5	8
	6-10	0

3.1 Theme 1: Preparedness

Preparedness was a common finding among the participants. Each participant expressed how learning about breastfeeding in an undergraduate class was emphasized by the SP experience after the class was completed. The participants felt prepared to educate first time mothers on importance and the process of breast feeding. Student Nurse (SN) A remarked: SN B:

"...it tested my knowledge of my education, what I've learned, and especially what I've seen firsthand on clinical rotations."

SN C:

"... able to connect it to a prior experience... Yes, because I was more prepared."

"I felt like I was more ready, prepared after the experience."

SN A:

"...the simulation helped me with being more prepared... I was able to think of more ways to educate the patient."

According to Johnson et al. (2020)^[21] students who worked with an SP reported significantly greater satisfaction and improved communication. SP was linked to improved preparedness and experiential learning. In other research conducted by Rezq and Algamdi (2025)^[24] students reported improved readiness for community health practice through realistic, structured SP simulations that emphasized active learning and high expectations.

3.2 Theme 2: Confidence

Confidence was evident as the participants shared their feelings of the SP educational experience. The participants felt more able to educate a new mother on the benefits and process of breastfeeding.

SN D:

"I was able to, like, let her know basic things that I've learned as a student nurse that I believe that I could have told her."

SN B:

"...that's because I felt like it was an actual, human-to-human interaction."

SN A:

"I felt confident in the room."

Donovan et al. (2026)^[20] identified confidence as an important outcome in standardized patient-based learning. SPs activated learning by the student experience of simulated patient encounters. Elevated confidence, assurance and proficiency were reported by the learners. The experience of scenarios that closely resembled real patient encounters enabled the students to trust that in their own performance to reflect real-world capability. This improved confidence may allow for more certainty with patient interactions.

3.3 Theme 3: Lower anxiety, comfort

Lowered anxiety and comfortableness were verbalized by each participant. The participants were able to express feeling less anxious and more able to communicate with the SP. This led to a better teaching outcome as per the participants.

SN E:

"... made me feel really good, honestly, and I say this because as I was, interviewing the mother, it actually made me...connect."

SN B:

"... It made me feel a connection." "... very positive emotions and helpful simulation."

SN C:

"During the simulation I did feel more comfortable." "It felt really good and comfortable to teach."

Nawathe and Herrington (2024)^[23] used SPs to provide conditions to promote comfort and reduce anxiety in learners. By utilizing a controlled environment, students were able to learn from mistakes in a safe setting. The authors described the SP based sessions as supportive, flexible and learner centered which lowered their anxiety.

3.4 Theme 4: Knowledge increase, deeper understanding

Knowledge increase and deeper understanding of breastfeeding and the patient education aspect of breastfeeding was explained by the participants. The participants felt a higher level of perception of breastfeeding facts and expression of information to the SPs.

SN D:

"Yeah, it definitely reinforced my knowledge, like, I was able to bring back what I learned... ", I... I feel like everything that we read in the textbook is kind of just words, and this kind of puts it more into perspective of how the patient actually feels."

SN B:

"...made me feel good, I knew I could educate her..." "...having the simulation definitely helped my knowledge."

SN A:

"It was a... it was refreshing to have a live patient for stimulation. I was really pleased by that experience. this gave me more education." "...helped review and reinforce my knowledge."

In qualitative research using SPs by Rezq and Algamdi (2025)^[24] students self-reported enhanced learning effectiveness, skill development and understanding. The findings also highlighted realism, proactive learning, teamwork, and communication; indicating a deeper grasp of the underlying principles and situational background.

4. CONCLUSIONS AND IMPLICATIONS

Prelicensure nursing students verbalized feeling more prepared, knowledgeable, confident and less anxious interacting with new mothers regarding breastfeeding education after participating in a simulation using SPs. The new mothers need more lactation education, and the students were able to provide it. The implications for these results include need for nursing curriculum to include using SPs in simulation, need for hospitals to employ more lactation education with new mothers and more research with practicing nurses in postpartum to explore their confidence in teaching breastfeeding to new mothers.

Limitations

This study took place in one nursing program for undergraduate nurses.

ACKNOWLEDGEMENTS

We greatly appreciate the valuable contributions of Nancy Spear Owen, Education Consultant who assisted in the preparation and scripting of the Standardized Patients.

AUTHORS CONTRIBUTIONS

Dr. Esposito Kubanick and Dr. Lopez-Carrasquilla were responsible for study design, data collection, data analysis, drafting and revising the manuscript. All authors read and approved the final manuscript. Allen Reji, RN contributed to literature review, used AI for summarizing annotated bibliography, and data collection.

FUNDING

This research was supported by Dean Becker, Health and Human Services, Office of Academic Affairs, City University of New York by funding of \$1200.00 that was provided for the cost of the standardized patient.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

INFORMED CONSENT

Obtained.

ETHICS APPROVAL

Approval was obtained from the Institutional Review Board (IRB) of the City University of New York (number 2024-0680) before beginning the research.

The Publication Ethics Committee of the Association for Health Sciences and Education. The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

PROVENANCE AND PEER REVIEW

Not commissioned; externally double-blind peer reviewed.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

DATA SHARING STATEMENT

No additional data are available.

OPEN ACCESS

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

COPYRIGHTS

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

REFERENCES

- [1] Younger-Meek J, Noble L. Policy statement: Breastfeeding and the use of human milk. *Pediatrics*. 2022; 150(1): e2022057988. PMID:35921640 <https://doi.org/10.1542/peds.2022-057988>
- [2] Chiu HC, Wang HY, Hsiao JC, et al. Early breastfeeding is associated with low risk of postpartum depression in Taiwanese women. *Journal of Obstetrics and Gynaecology*. 2020; 40(2): 160-166. PMID:31215282 <https://doi.org/10.1080/01443615.2019.1603216>
- [3] Folker-Maglaya C, Pylman ME, Couch KA, et al. Implementing a breastfeeding toolkit for nursing education. *The Journal of Perinatal & Neonatal Nursing*. 2018; 32(2): 153-163. PMID:29689016 <https://doi.org/10.1097/JPN.0000000000000330>
- [4] Muro-Valdez JC, Meza-Rios A, Aguilar-Uscanga BR, et al. Breastfeeding related health benefits in children and mothers: Vital organs perspective. *Medicina (Kaunas, Lithuania)*. 2023; 59(9): 1535. PMID:37763654 <https://doi.org/10.3390/medicina59091535>
- [5] O'Sullivan J, Scott LJ. The benefits of breastfeeding and how nurses can support new parents. *Nursing Made Incredibly Easy!* 2023; 21(6): 29-33. <https://doi.org/10.1097/nme.000000000000016>
- [6] Miolski J. Benefits of breastfeeding for mother and child. *Sanamed*. 2023; 18(1): 59-63. <https://doi.org/10.5937/sanamed0-41390>
- [7] Golob AT. Benefits of breastfeeding and feeding with mother's milk for the child. *Slovenska Pedriatrija*. 2022; 29(4): 180-184. <https://doi.org/10.38031/slovpediatr-2022-4-01en>
- [8] Prentice AM. Breastfeeding in the Modern World. *Annals of Nutrition and Metabolism*. 2022; 78(Suppl 2): 29-38. PMID:35679837 <https://doi.org/10.1159/000524354>
- [9] Lewandowska D, Rosińska-Lewandoska D, Ufnal J, et al. The long-term health benefits of breastfeeding: Obesity prevention, metabolic health, and cardiovascular protection. *Journal of Education, Health and Sport*. 2024; 75: 56476. <https://doi.org/10.12775/JEHS.2024.75.56474>
- [10] Malhi P, Bharti B, Sidhu M. Benefits of breastfeeding, early home stimulation, and maternal demographic factors on cognitive functioning of toddlers. *Psychological Studies*. 2023; 68(4): 563-570. <https://doi.org/10.1007/s12646-023-00759-x>
- [11] McGowan C, Bland R. The benefits of breastfeeding on child intelligence, behavior, and executive function: A review of recent evidence.

- Breastfeeding Medicine. 2023; 18(3): 172–187. PMID:36749962 <https://doi.org/10.1089/bfm.2022.0192>
- [12] Modak A, Ronghe V, Gomase KP. The psychological benefits of breastfeeding: fostering maternal well-being and child development. *Cureus* (Palo Alto, CA). 2023; 15(10): e46730. <https://doi.org/10.7759/cureus.46730>
- [13] Tucker Z, O'Malley C. Mental health benefits of breastfeeding: A literature review. *Cureus* (Palo Alto, CA). 2022; 14(9): e29199. <https://doi.org/10.7759/cureus.29199>
- [14] Sylla A, Soukaina L, Nani S, et al. Associated factors to breast feeding practice in neonatal intensive care unit. *European Journal of Public Health*. 2021; 31(Supplement_3). <https://doi.org/10.1093/eurpub/ckab165.284>
- [15] Symington EA. Healthcare providers and breastfeeding support skills: The need for education and training. *The South African Journal of Clinical Nutrition*. 2024; 37(4): 1-2. <https://doi.org/10.1080/16070658.2024.2435697>
- [16] Rhodes B, Burgess A. An innovative educational intervention to improve nursing students' knowledge, attitudes, and skills surrounding breastfeeding. *Teaching and Learning in Nursing*. 2018; 13(4): 197-201. <https://doi.org/10.1016/j.teln.2018.05.003>
- [17] Webber C, Blissett J, Addessi E, et al. An infant-led approach to complementary feeding is positively associated with language development. *Maternal & Child Nutrition*. 2021; 17(4): e13206. PMID:34031998 <https://doi.org/10.1111/mcn.13206>
- [18] Miller A. The use of simulation-based learning as an educational tool in nursing. *Nursing in Critical Care*. 2023; 28(3): 333-467. PMID:37104491 <https://doi.org/10.1111/nicc.12904>
- [19] Madriz S, Afulani P, Spindler H, et al. Training new simulation educators at scale to improve maternal and newborn health: A case study from Bihar, India. *BMC Medical Education*. 2023; 22(1): 1-10.
- [20] Donovan KO, Connolly M, Browne F. Within healthcare education how do simulated patients enable (or not) the transfer of learning into clinical practice: A realist review. *Nurse Education Today*. 2026; 158: Article 106927. PMID:41317425 <https://doi.org/10.1016/j.nedt.2025.106927>
- [21] Johnson KV, Scott AL, Franks L. Impact of standardized patients on first semester nursing students' self-confidence, satisfaction, and communication in a simulated clinical case. *SAGE Open Nursing*. 2020; 6: 2377960820930153. PMID:33415284 <https://doi.org/10.1177/2377960820930153>
- [22] Leyden K, Simpson KD. Maximizing nursing education by utilizing nursing students as standardized patients. *Journal of Perianesthesia Nursing*. 2025. PMID:41447367 <https://doi.org/10.1016/j.jopan.2025.08.023>
- [23] Nawathe PA, Herrington A. Enhancing healthcare communication education: Standardised patient programmes. *Indian Journal of Anaesthesia*. 2024; 68(1): 65–70. PMID:38406333 https://doi.org/10.4103/ija.ija_1201_23
- [24] Rezq KA, Algamdi MM. Community health nursing students' perceptions of self-confidence, satisfaction, and learning through standardized patient simulations. *SAGE Open*. 2025; 15(4). <https://doi.org/10.1177/21582440251387237>
- [25] Streubert HJ, Carpenter DR. *Qualitative research in nursing: Advancing the humanistic imperative*. 5th ed. Wolters Kluwer/Lippincott Williams & Wilkins. 2011.
- [26] Lincoln YS, Guba EG. *Naturalistic Inquiry*. SAGE; 1985.
- [27] Smith JA, Flowers P, Larkin M. *Interpretative Phenomenological Analysis: Theory, Method and Research*. 2nd ed. SAGE; 2022.