ORIGINAL RESEARCH

RN-BSN students' perception of vSim for nursing® using the simulation effectiveness tool – modified (SET-M)

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ABSTRACT

Introduction: This first-time novel pilot study explored RN-BS students' perceived effectiveness of utilizing vSim for Nursing® as a clinical replacement with a second aim that explored the efficacy of their preparation.

Methods: Outcomes of this quantitative study explored the effectiveness of vSim for Nursing utilized the Simulation Effectiveness Tool – Modified (SET-M).

Results: Frequency distributions demonstrated majority (n = 14) strongly agreed on the effectiveness of vSim for learning, with all items ranging from 50% (n = 7) to 78.6% (n = 11). Debriefing had the overall highest responses, 57.1% (n = 8) to 78.6% (n = 11). Majority strongly agreed that their preparation was highly effective, 71.43% (n = 10) to 85.71% (n = 12).

Conclusions: vSim for Nursing was perceived to be an efficacious clinical practice replacement tool while feeling prepared to achieve the learning outcomes was beneficial. Debriefing continues to be a crucial and fundamental facet to any mode of simulation. Virtual simulation experiences can bridge the gap to assist students to further their knowledge and confidence.

Key Words: vSim for nursing®, RN-BSN students, Nursing education, Virtual simulation learning experience, SET-M

1. INTRODUCTION

Many hospital-based clinical experiences were directly affected by the COVID-19 pandemic. Several schools of nursing (SON) had to seek alternative clinical experiences to ensure their students continued educational progression, including Registered Nurse (RN) to Baccalaureate (BSN, BS or Bachelor of Science in Nursing, RN-BSN) programs. A virtual simulation learning experience (VSLE), such as vSim for Nursing®, was one alternative approach to ensure students continued educational progression. Though vSim for Nursing® was intended for undergraduate pre-licensure, accelerated, and licensed practical /licensed vocational (LPN/LVN) nursing programs, given the unique predicament of the RN-BSN students, permission from the investigators' states' certifying regulatory body was obtained to guarantee their educational advancement. One aim of this original novel pilot study investigated RN-BS students' self-rated use of vSim for Nursing® (vSim) as a virtual simulated hospital-based alternative utilizing the Simulation Effectiveness Tool – Modified (SET-M) with a secondary purpose that surveyed their pre-vSim preparatory process. VSLE and vSim are being used interchangeably.

2. BACKGROUND

2.1 RN to baccalaureate

RN to Baccalaureate (RN-BSN) programs provide registered nurses, who were RN-prepared in either an associate degree in Nursing (ADN) or diploma curriculum, a professional ca-

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reer option to advance their knowledge and skills by enhancing clinical reasoning and judgment.[1] In the United States, there are approximately 777 RN-BSN programs, comprising over 600 curricula (80%) that are partly tendered online as well as hundreds of individual arrangements among community colleges and four-year schools.[1] In 2010, the Institute of Medicine (IOM) addressed the need for nurses to have a higher educational degree, recommending that by 2020, 80% of the nursing workforce should hold a bachelor's degree in nursing (BSN).[2] In 2017, New York State became the first state to recognize the importance of a baccalaureate-prepared RN, which led to the "BSN in 10" law. "BSN in 10" stipulates that "newly licensed nurses already have a BSN at the time of entry into practice or achieve a BSN within 10 years after initial licensure" (p6),[3] thus affecting the RN-prepared ADN or diploma nurse. As other states look to confirm this regulation, there is a need to assist these students to achieve their educational goals. RN-BSN learners comprise a distinct group of practicing professionals with numerous responsibilities and challenging educational requirements.[4]

To provide a global perspective, as of 2020, there were around 450,000 registered nurses and midwives in Australia.[5] There were approximately 72,000 enrolled nurses, which are individuals who completed a one-year vocational educational program, and 337,000 registered nurses.[5] In the United Kingdom, as of 2021, there were approximately 669,854 registered nurses with 4,100 being nursing associates, which are individuals with two years of higher education.[6] In China, there are more than 3.2 million RNs and a 2015 survey of 51,406 participants ascertained that 94.8% received a college education (ADN-certificated prepared RN) while 53.8% had a bachelor's degree.[7] ADN-RNs in China can enroll in RN-BSN programs though many have expressed a lack of confidence to advance their careers.[7] A study in Tibet explored 663 nursing participants and their need for continuing nursing education.[8] Findings revealed 33 participants (4.98%) had technical secondary school, 336 (50.68%) had college level, 394 (44.34%) had a bachelor's degree with none having a master's degree or above.[8] The need to advance the educational level of nurses is paramount to ensure appropriate safe patient care and the advancement of the nursing profession.

2.2 Virtual simulation technology in nursing education

2.2.1 *RN-BSN virtual simulation technology integration*

A virtual simulation learning experience is a synergistic online platform whereby learners participate in client care, perform assignments, evaluations, interventions, and therapy tasks.[9] Virtual learning environments can be integrated to complement didactic content, augment real-life experiences,

promote self-confidence, active learning, and enthusiasm for learning.[7, 10, 11]

A seminal study with 19 RN-BSN students in a simulation-enhanced health assessment course explored caring behaviors with results indicating that caring improved post-intervention.[12] The caring behavior that received the highest rates were attentively listening to the patient and positive connectedness while professional knowledge and skills corresponded to the lowest rating.[12] Another early study integrated three virtual simulated activities to engage RN-BSN students in considering aspects of social justice and health policy.[13] This qualitative study yielded positive student feedback with students gaining a deeper appreciation of vulnerable populations while learning how to advocate and work collaboratively.[13]

One study explored critical thinking, confidence, and satisfaction with 27 RN-BSN students using Shadow Health Digital Clinical Experience (DCE)^{TM} compared to only written case studies in a pathophysiology-pharmacology online course.[11] Findings revealed the participants that utilized DCEs^{TM} yielded above average scores on satisfaction and confidence with learning yet no statistical significance differences amongst the groups in critical thinking, satisfaction, and self-confidence in learning.[11] A single-group post-test study explored 91 RN-BSN learners' satisfaction, self-confidence, and perceptions with a 72-year-old male simulated patient with type 2 Diabetes in a foundational nursing skills course in an eastern China university.[7] Overall, participants reported higher satisfaction and self-confidence with regards to the simulation.[7] Those participants with more work experience reported higher satisfaction and active learning.[7] Enthusiasm for learning and the opportunity to experience different emotions and impressions during the simulated role-playing were two themes that emerged.[7]

Finally, one study explored an immersive computer-generated world, Sentinel City, which represented what their RN-BSN participants may experience in an urban city in the United States.[10] This immersive simulated world was incorporated into a community health nursing course.[10] Participants qualitative feedback was positive, with such comments as "Program was very interactive and educational. It built and challenged my assessment skills . . . thoroughly enjoyed this new learning approach . . . great method to encourage and support learning." "Real life setting makes concepts easy to apply, content is driven by the student, not the teacher."(p10)[10]

2.2.2 *vSim for nursing*

An extensive scholarly literature search did not reveal any previous studies on RN-BSN student's perceptions with vSim

thus this current study is the first of its kind. Studies with the target audience of undergraduate pre-licensure and accelerated nursing students have been conducted demonstrating vSim's effectiveness as a teaching platform. vSim can provide a safe, pragmatic online experience to acquire nursing skills, therapeutic communication, clinical reasoning and judgement, and decision making.[14, 15] Confidence, self-efficacy and comfort in one's nursing abilities, and readiness to care for patients have been demonstrated with vSim integration.[16] Pre-built patient case scenarios provide a graded stepwise procedural process for nursing interventions, patient care and therapeutic treatments.[17–19] vSim also provides recommended reading materials, pre/post graded questions and patient case situations.[19] One of the earliest studies, conducted with 54 accelerated pre-licensure nursing learners, utilized vSim as a trial supplemental experience with two scenarios: a patient with pneumonia who experienced anaphylaxis and a simulated client in cardiac arrest necessitating defibrillation.[17] Results demonstrated that participants perceived vSim to be easy to use; content was directly applicable to being a nurse, and all but one participant recommended vSim for future integration.[17]

Twenty-eight second-year students in a fundamentals course in China participated in a randomized control posttest design study.[20] Results indicated that the participants who had experienced vSim had a significant knowledge enhancement compared to the participants who were provided only course material.[20] A three-group (two simulation/one control) quasi-experimental mixed-method study, with 102 undergraduate pre-licensure learners registered in an adult health course, yielded findings demonstrating that 91% perceived content comprehension improvement and the experiential learning process expanded their knowledge integration and clinical reasoning and judgment.[21] No statistically significant difference with the post-simulation quiz scores was noted, though the two simulation groups did score higher than the control group.[21] Exploration of 99 pre-licensure students' preferences and perceived learning outcomes in an advanced medical-surgical clinical course, using a mixed-methods design, focused on medication administration and respiratory interventions.[22] Findings indicated that participants felt vSim was beneficial as an augmentation for course content and for clinical replacement while improving their nursing assessment skills, interventions, and prioritization of care.[22]

A mix-methods study, with 82 senior students in a medical-surgical course, utilized vSim as preparation prior to the simulated lab experience.[23] Highest three survey items, with 99% strongly agree/agree, were: enhanced understanding of learner's areas for improvement; learning environment was conducive/respectful, and debriefing promoted learning.[23] Qualitative data yielded six themes: "improved prioritization, role modeled nursing care, individualized preparedness, engaged critical thinking, decreased level of anxiety and increased confidence in the lab." (p122)[23] A qualitative study explored 20 South Korean pre-licensure learners' experiences and perceptions of vSim had findings demonstrating its benefits for enhancing self-confidence and competency to provide client care.[24] A study with 47 Korean senior nursing students compared critical-thinking inclination and self-directed learning capability pre and post their VSLE.[25] Results noted no statistical significance between the assessment, yet significance related to participants self-directed abilities.[25]

One study on vSim for Nursing's impact on learners' self-rated clinical judgment used the Lasater Clinical Judgment Rubric with 234 students in a pediatric health course in a pre-licensure baccalaureate program.[26] Findings indicated that participants self-rated improved clinical judgment skills, demonstrated by increased clinical judgment scores, indicative of how vSim can be beneficial to the learning process.[26] One mixed-method design study explored pre-licensure baccalaureate (n = 99) and accelerated second-degree (n = 19) learner's self-rated usefulness of integrating vSim as a virtual hospital-based alternative with a secondary purpose that explored their pre-vSim preparatory process.[27] Efficacy was assessed utilizing the Simulation Effectiveness Tool – Modified (SET-M).[28] Participants strongly agreed on the learning value of vSim, and the majority felt their preparation was extremely effective.[27] Finally, a descriptive mix-method design explored 28 pre-licensure first-semester students' perceptions, in a pathophysiology pharmacotherapeutics course, and their satisfaction in learning and self-confidence of vSim for Nursing pharmacology clinical scenarios.[29] Overall, participant satisfaction in learning was evident and self-confidence enhanced.[29] However, navigational hindrance and unrealism was reported.[29]

Even with all the benefits to the educational process, limitations and hindrances do exist with vSim for Nursing, such as annoyance with technology and time spent on seeking out the necessary pre-set actions;[17, 21, 24, 29, 30] unrealistic milieu with an inability to multi-task,[17, 25] and software update required to enhance the computer-generated nurse and client avatar.[29]

3. METHODOLOGY

The aims of this novel pilot project explored RN-BS students' self-rated use of vSim for Nursing® (vSim) as a virtual simulated hospital-based alternative with a secondary purpose that explored participants' pre-vSim preparatory process.

3.1 Study design

Virtual simulated hospital-based alternative process

Currently, the RN-BSN curriculum at this SON is being revised to be fully online. Until this process is completed, these students are required to complete one face-to-face community clinical, which was their last required course, for graduation. To ensure their graduation, vSim for Nursing gerontology scenarios, as there were no community-based scenarios, were utilized as an alternative to meet this clinical requirement. The gerontology adaptive interactive vSim scenarios consisted of four simulated patients divided into three separate parts, though only three of the simulated situations were used. The Associate Dean for Undergraduate Programs at the School of Nursing (SON) chose which simulated patients and parts to assign to the RN-BSN students. The Assistant Dean for Academic Operations obtained the vSim authorizations. The investigator did not participate in the licensing purchase. All participants completed the same seven virtual scenarios between June – August 2020. Three clinical groups of RN-BSN students were assigned the same seven vSim scenarios, which consisted of a discharge to pulmonary rehabilitation (part 2); transition to an assisted living apartment (part 3); open foot wound and assessment of functional decline and family conflict (part 1 and 3) and urinary tract infection coupled with confusion, fall risk and functional evaluation, and caregiver strain and maintenance of independence (parts 1-3).

Two days preceding each assigned VSLE day scheduled meeting, students were required to review the recommended readings and all vSim tasks. A minimum satisfactory score of 70% was required in the allocated 30-minute period. Students were advised they could repeat the vSim assignments several times to achieve the required grade. All three clinical groups were scheduled for a 3-hour time slot for each VSLE clinical day. This 3-hours provided an all-inclusive facilitated discussion and debriefing, assuring a comprehensive group conference dialogue. To prepare the three adjunct clinical faculty for this experience, the 3-hour time slot was divided into different discussion aspects encompassing the scenario details. The clinical educator received material regarding integrating and facilitating the discussion and debriefing. Debriefing for Meaningful Learning© (DML) provided the debriefing framework, to promote self-reflection, self-awareness, and an openness to learning.[31]

To prepare students and faculty the researcher created an introductory informational handout, the VSLE Overview. This introductory handout offered information on scheduling; access code process; absences; required tasks to be completed; how to prepare for the VSLE and what the group discussion would be based on; the virtual simulated hospital-based alter-native clinical goals; the simulation conceptual framework and the confidentiality agreement.

The virtual clinical day began with the prebriefing, which merged a discussion on the vSim situation; virtual simulated hospital-based alternative clinical goals; nursing implications related to medications, tasks, and procedures; medical orders; suggested appropriate treatment sequence; and basic care and interventions. The clinical nurse educator would then discuss the virtual case situation in depth and student's responses and insights were encouraged to conclude the debriefing portion of the discussion. Detailed discussion of the nursing process and appropriate nursing diagnoses was explored. Enhanced clinical reasoning and judgement in the care of the virtual client was enmeshed in the discussion at the BSN level. Understanding BSN nursing knowledge and skills were explored during the debriefing process. Finally, the last hour consisted of students delving into their thoughts, feelings, and rationales on their performance on caring for the simulated patient. Additional time for inquiries that promoted analytical judgment of care and interpretation of the nursing process was provided.

3.2 Instruments

The Simulation Effectiveness Tool – Modified (SET-M), a 19-question public accessible survey, was used to appraise learner's VSLE in meeting the clinical goals and outcomes.[28] It was developed with the foundation of the American Association of Colleges of Nursing (AACN) baccalaureate essentials, International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice, and Quality and Safety Education for Nurses (QSEN) practices.[28] The SET-M is scored on a 3-point Likert scale, with no established method of scoring, and was developed with four subscales: two items on prebriefing; six on both learning and confidence and five on debriefing.[28] It has an overall Cronbach's alpha internal consistency of .936.[28] A review of the original SET survey established psychometric validity and reliability.[32] As the SET-M is a revised edition, validity and reliability may also be recognized.

Five questions explored if the VSLE Overview information prepared the participants. These survey questions explored if participants perceived the handout to be helpful; readied them for the overall virtual simulation process, readied them to partake in the group discussion and if pre-assigned tasks readied them for the overall experience.

All survey questions had a Likert Scale of 1 = Strongly Agree; 2 = Somewhat Agree; 3 = Do Not Agree. Regrettably, the investigator was unable to confirm that participants utilized

this material prior to their scheduled VSLE. Approval was obtained via the Institutional Review Board.

3.3 Research procedure

The investigators' Qualtrics© College Account, through the participants' Blackboard instructive course, provided the platform for participants to receive the SET-M link. The approved scripted email comprised a no coded-survey link, permission for participation information, SET-M/VSLE Overview surveys and demographic data. The researcher forwarded the email to correspond to the final scheduled virtual simulated clinical day, resending the same email seven days later. Data collection occurred in August 2020 with participants directed to complete the survey one time only. Data could not be considered anonymous given the student population, hence data was obtained without identifiers. Analysis of the descriptive data was computed into tables for evaluation.

3.4 Limitations

Given the small number of RN-BSN participants in a single-center nursing program partook in this study, generalization could not be obtained. As this was the first time these students participated in a VSLE, no data was obtained on how they felt about having to incorporate a remote learning experience during a pandemic. As vSim for Nursing was developed for pre-licensure students and LPN/LVN, RN-BSN students were not their target audience. There was no grade associated with the virtual simulation experience though a 70% minimum was required on all preset VSLE activities. However, if a grade was associated students may have viewed their participation differently.[17] Finally, knowledge, self-efficacy, or confidence pre/post-test scores were not obtained.

4. RESULTS

4.1 Participants

RN to Baccalaureate students, in a diverse urban SON, participated in a total of seven gerontology virtual simulation learning experiences between June – August 2020. All learners were in a hospital setting prior to integrating vSim. No participant had prior vSim experience and vSim was the only virtual alternative offered. Of the 26 students invited to participate, 14 completed the voluntary survey. Twelve females (85.71%) and two males (14.29%) ranging from 25-50 years of age (57.15% between 31-50; 28.57% between 25-30) participated. Six participants obtained their RN license between 2012-2017 (one/year), three in 2018 and 2019 and two in 2020.

4.2 SET-M outcomes

All 19 SET-M survey questions, as seen in Table 1, demonstrated that most of the participants strongly agreed that the VSLE was beneficial, with responses between 50% (n = 7) to 78.6% (n= 11). With regards to the prebriefing questions, 64.3% (n = 9) responded that vSim increased their confidence while 57.1% (n = 8) felt it was beneficial to their learning. Neither of these questions had any do not agree responses. Of the six items pertaining to learning, four items had 64.3% (n = 9) strongly agreeing that they had a better understanding of pathophysiology and medications; more confident in their nursing assessment skills and the prospect to apply decision making skills. Feeling empowered to make clinical decisions had 57.14% (n = 8) with no do not agree responses. Being equipped to act in response to changes in patient's condition had least strongly agreed with 50% (n = 7) with one do not agree response (7.14%).

Confidence in capacity to educate clients regarding their illness and interventions had the highest strongly agreed upon responses with 71.4% (n = 10) while confidence in applying evidence-based preparation to deliver nursing care had the lowest overall strongly agreeing with 42.9% (n = 6). Being more confident in delivering interventions that promoted client safety had 64.29% (n = 9) strongly agreeing. Being more confident to focus care and interventions; communicating with the patient and ability to convey patient information all had 57.14% (n = 8) strongly agreeing.

The six debriefing survey questions revealed the highest strongly agreed upon results. Four items had 78.6% (n = 11) strongly agreeing that debriefing influenced learning; was beneficial in prompting enhanced clinical judgment; offered prospects to self-reflect on nursing care during the virtual experience and was a constructive assessment of the simulation experience. Debriefing 'allowed me to verbalize my feelings before focusing on the scenario' had lowest strongly agreed responses with 57.1% (n = 8). None of the debriefing questions had any do not agree responses.

4.3 VSLE overview outcomes

The five survey questions, as seen in Table 2, established that the RN-BSN students considered themselves ready for the virtual simulation clinical day. 'I felt that I was able to fully participate in the VSLE discussion having completed the simulation scenario in advance' demonstrated 85.7% (n = 12) strongly agreed. Participants strongly agreed, with 78.6% (n = 11) responding, that the VSLE Overview material was both 'helpful' and 'prepared me to fully participate' in the virtual simulation. Finally, the VSLE Overview information 'prepared me for my vSim experience' and 'I found the pre-assignments prepared me to fully participate' both received 71.4% (n = 10) strongly agreed upon responses. All five items did not have any do not agree responses.

Table 1. Simulation Effectiveness Tool Modified (SET-M) (n = 14) (%)

SET-M Survey Question	Strongly Agreeing	Somewhat Agreeing	Do Not Agree	SD	Mean
1. Prebriefing increased my confidence	9 (64.29%)	5 (35.71%)	0	0.48	1.36
2. Prebriefing was beneficial to my learning	8 (57.14%)	6 (42.86%)	0	0.49	1.43
3. I am better prepared to respond to changes in my patient's condition	7 (50%)	6 (42.86%)	1 (7.14%)	0.62	1.57
4. I developed a better understanding of the pathophysiology	9 (64.29%)	3 (21.43%)	2 (14.29%)	0.73	1.50
5. I am more confident of my nursing assessment skills	9 (64.29%)	5 (35.71%)	0	0.48	1.36
6. I felt empowered to make clinical decisions	8 (57.14%)	6 (42.86%)	0	0.49	1.43
7. I developed a better understanding of medications	9 (64.29%)	3 (21.43%)	2 (14.29%)	0.73	1.50
8. I had the opportunity to practice my clinical decision making skills	9 (64.29%)	5 (35.71%)	0	0.48	1.36
9. I am more confident in my ability to prioritize care and interventions	8 (57.14%)	6 (42.86%)	0	0.49	1.43
10. I am more confident in communicating with my patient	8 (57.14%)	4 (28.57%)	2 (14.29%)	0.73	1.57
11. I am more confident in my ability to teach patients about their illness and interventions	10 (71.43%)	3 (21.43%)	1 (7.14%)	0.61	1.36
12. I am more confident in my ability to report information to health care team	8 (57.14%)	4 (28.57%)	2 (14.29%)	0.73	1.57
13. I am more confident in providing interventions that foster patient safety	9 (64.29%)	4 (28.57%)	1 (7.14%)	0.62	1.43
14. I am more confident in using evidence-based practice to provide nursing care	6 (42.86%)	8 (57.14%)	0	0.49	1.57
15. Debriefing contributed to my learning	11 (78.57%)	3 (21.43%)	0	0.41	1.21
16. Debriefing allowed me to verbalize my feelings before focusing on the scenario	8 (57.14%)	6 (42.86%)	0	0.49	1.43
17. Debriefing was valuable in helping me improve my clinical judgment	11 (78.57%)	3 (21.43%)	0	0.41	1.21
18. Debriefing provided opportunities to self-reflect on my performance during simulation	11 (78.57%)	3 (21.43%)	0	0.41	1.21
19. Debriefing was a constructive evaluation of the simulation	11 (78.57%)	3 (21.43%)	0	0.41	1.21

Table 2. Virtual Simulation Overview Information (n=14) (%)

Virtual Simulation Overview Information	Strongly Agreeing	Somewhat Agreeing	Do Not Agree	Mean	SD
1. The VSLE Overview information prepared me for my vSim experience	10 (71.43%)	4 (28.57%)	0	0.45	1.29
2. I found the VSLE Overview information helpful	11 (78.57%)	3 (21.43%)	0	0.41	1.21
3. The VSLE Overview information prepared me to fully participate in the vSim experience	11 (78.57%)	3 (21.43%)	0	0.41	1.21
4. I found the Pre-Assignments prepared me to fully participate in the VSLE	10 (71.43%)	4 (28.57%)	0	0.45	1.29
5. I felt that I was able to fully participate in the VSLE discussion having completed the simulation scenario in advance	12 (85.71%)	2 (14.29%)	0	0.35	1.14

5. DISCUSSION

As there are no studies of RN-BSN students' self-rated use of vSim for Nursing, this first-time novel pilot study's findings could not be corroborated. However, this study's findings could be corroborated with previous studies with pre-licensure nursing students, verifying learners' perception that the virtual simulated experience is a beneficial and worthwhile pedagogic teaching/learning tool. Findings are in ac-

cord to the initial SET-M study on the efficacy of a VSLE[28] and a recent study that explored pre-licensure and accelerated nursing students using the SET-M.[27] Overall, the RN-BSN participants perceived a positive VSLE, achieving the clinical goals and objectives that enhanced their overall learning and knowledge base.

Participants perceived the prebriefing as beneficial to their learning process with an increase in their confidence level. This is in accordance with findings from a pre-licensure and accelerated nursing students' study with the same SET-M tool[27] as well as the original SET-M survey.[28] A structured prebriefing provides the foundation for participants to achieve positive outcomes, establishing a safe learning milieu while promoting engagement and participation.[16,33] Prebriefing provides guidance for learners to be informed of the rudimentary expectations, simulation content, goals, and objectives.[34] Pre-assignment work can lead to improved learning outcomes while increasing confidence in students' ability to be engaged in the virtual conversation. As in the pre-licensure study, students considered themselves sufficiently prepared to contribute during the virtual simulation conference, having obtained the pre-vSim preparatory information and completing the vSim tasks prior to their group discussion.[27] Individualized preparedness can decrease anxiety performance levels leading to enhanced learner understanding.[23] Application of learning concepts are paramount to students' performance and understanding of content material.

Four of the six learning items (better understanding of pathophysiology; confidence in nursing assessment; improved medication knowledge and opportunity to engage in clinical decision-making skills) all had 64.29% (n = 9) strongly agreeing. Having the opportunity to perform clinical decision-making tasks yielded the highest with the pre-licensure and accelerated students (66.9% (n = 79) as well as the highest with the original SET-M survey with 83.6% (n = 1,077).[27,28] Yet, having an improved medication knowledge yielded the least strongly agreeing for both pre-licensure/accelerated participants and original participants with the SET-M.[27,28] As RN-BSN students have nursing experience, they are more likely to have a stronger understanding of medication interactions while utilizing critical thinking skills.[7,11] Prior nursing experience supplements their understanding of the nursing process and foundational skills. Providing RN-BSN students virtual experiences can enhance assessment skills while providing real life situations that offers opportunities for them to easily apply nursing concepts.[10] Being prepared to react to changes in their client's medical situation had the lowest strongly agreeing (50%; n = 7) with 42.86% (n = 6) agreeing. Incorporating virtual learning opportunities can support the learners' interpretation of patient manifestations

and implementation of interventions. Prioritization of care, critical thinking, reasoning, and judgment can be augmented with virtual simulation learning experiences.[23,25,26]

Of the six confidence subscale items, being more confident in the educating clients about their illness and interventions had the highest strongly agreed responses. Similarly, this question had the third highest strongly agreed upon with pre-licensure and accelerated nursing students[27,28] and fourth highest with the original SET-M results.[28] RN-BSN students, being and registered nurses and adult learners, utilize critical thinking, reasoning, and judgment consistently in their professional practice.[11] Therefore, it is not surprising that this item had the topmost strongly agreeing with 71.43% of the RN-BSN participants, given undergraduate nursing students do not have the same professional experience. Being more confident in delivering patient care treatments that promote safety had the second highest percentage while having the highest percentage with the pre-licensure and accelerated nursing students survey and the lowest percentage with initial SET-M findings.[27,28] RN-BSN students have prior experience and knowledge that aides in their ability to provide safe and effective patient care. Virtual simulation experiences can enhance and foster a deeper understanding of students' knowledge and critical thinking skills.[20,21,25,26]

Being more confident in one's capability to prioritize care and interventions; communicate with patients and proficiency in reporting interventions to health care team all had 57.14% strongly agreeing with the RN-BSN participants. Communicating with patients had the lowest percentage of participants strongly agreeing with the pre-licensure and accelerated students while the participants in the original SET-M study responded with the highest strongly agreeing.[27,28] Once again, RN-BSN are experienced practitioners who are confident with their skills, knowledge, and willingness to learn.[7] Being more confident integrating evidence-based practice to deliver care had the lowest strongly agreed upon responses with the highest agreeing. Additionally, this question yielded the lowest strongly agreed upon responses in the original SET-M survey.[28] Continually preparing nurses to gather, analyze and implement research results to advance client outcomes through clinical expertise is an essential part of personalized nursing care.[35]

The importance of debriefing remains a central feature to any simulation format. It provides opportunities for students to express, explore and share their thoughts and acumens. This finding is in accordance with numerous VSLE studies.[18,20,21,24,28] Synchronous debriefing is a crucial element of virtual simulation, bringing students and educator together, to support their learning needs, promote critical

self-reflection and evaluation.[36] Debriefing promotes learning while affording self-reflective possibilities[23] and continues to be a crucial and fundamental facet to any simulation genre.[27]

To conclude, VSLE can enhance learners' self-confidence, promote patient assessment and prioritization of care, improve clinical judgment and reasoning while fostering a sense of professionalism.[7, 11, 23, 26, 29, 30]   Virtual simulations are suitable and appropriate for RN-BSN students and not solely for pre-licensed students.[7] Debriefing remains a vital element to any VSLE though more evidence in virtual simulation is warranted.[30] Adult learning needs, through experiential experiences, can be met with virtual simulations. Virtual simulation experiences can bridge the gap to assist these students to further their nursing knowledge and confidence.

Implications for professional nursing development

Though vSim for Nursing is targeted for pre-licensed undergraduate and LPN/LVN students, RN-BSN students may also benefit from virtual clinical learning experiences. Consideration for this subgroup of licensed professional students necessitates further exploration. Future restrictions and unforeseen circumstances of hospital-based clinical experiences may compel further exploration into substitute instructive pedagogies and andragogy's to secure students continued ed-ucational advancement. One technological teaching/learning format that can be used as an alternative to clinical experiences, a supplement to didactic material or as a clinical makeup is virtual simulation.[21, 22]

6. CONCLUSION

Considering remote education may become more commonplace post-COVID, continued exploration into alternative educational processes is required, ensuring students edifying progression and achievement. RN-BSN students perceived vSim for Nursing to be academically beneficial whilst enhancing their self-confidence. Within simulation genres: face-to-face, virtual, and interprofessional education (IPE-Sim), debriefing continues to be a crucial and significant feature.[22, 31, 33, 37] Preparing students provides the foundation to fulfill core objectives and clinical competencies. Providing students with direction and instruction can support them as they venture towards their academic success.

CONFLICTS OF INTEREST DISCLOSURE
The author declares that there is no conflict of interest.

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