

Engaging nursing students in a COVID-19 Point-of-Care rapid screening clinic

Ranjit Dhari¹ | Kristen Haase¹  | Manon Ranger^{1,2}  | Elsie Tan¹ | Frances Affleck¹ | Elisabeth Bailey¹ | Sabrina T. Wong^{1,3} 

¹School of Nursing, University of British Columbia, Vancouver, British Columbia, Canada

²BC Children's Hospital Research Institute, Vancouver, British Columbia, Canada

³Centre for Health Services and Policy Research, Vancouver, British Columbia, Canada

Correspondence

Sabrina T. Wong, School of Nursing, University of British Columbia, Vancouver V6T 2B5, Canada.
Email: sabrina.wong@ubc.ca

Abstract

Background: The COVID-19 pandemic has globally impacted nursing education, particularly clinical learning opportunities for undergraduate nursing students.

Purpose: In this paper, we report on an educational activity wherein students participated in a COVID-19 Rapid Antigen Testing (RAT) clinic on a Canadian university campus.

Methods: Between February–April 2021, in the second term of a five-term accelerated program, nursing students ($n = 60$) participated in a nurse-led COVID-19 RAT clinic for students and staff living or working in congregate housing. Students participated in education activities which exposed nursing students to the full range of community health nursing roles in a pandemic.

Results: From clinical, research, policy, and public health, this educational activity acted as a microcosm of the critical roles that nurses employ in the health ecosystem.

Conclusion: We offer lessons learned about implementing this activity, and how these lessons can be applied to routine and exceptional nursing curriculum.

KEYWORDS

COVID-19, health promotion, innovative learning, nursing students, rapid antigen testing, research, university congregate housing

1 | AIM

The COVID-19 pandemic has globally impacted nursing education, particularly clinical learning opportunities for undergraduate nursing students. The aim of this paper is to share an innovative clinical educational activity created during the COVID-19 pandemic in an undergraduate BSN program. The broad learnings gained from this innovative educational activity could be applicable to future similar clinical programs around the globe, particularly during infectious disease outbreaks.

2 | BACKGROUND

At the start of the pandemic, in March 2020, most undergraduate nursing programs rapidly shifted away from in-person delivery to the use of simulation and virtual reality (Palancia Esposito & Sullivan, 2020) in addition to online (Wyatt et al., 2021) and case-based teaching (Allande-Cussó, 2020). At our institution, nursing students were viewed as an integral part of the health-care system and all students remained in their clinical rotations. Our school's decision regarding learning during the COVID-19

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2022 The Authors. *Nursing Open* published by John Wiley & Sons Ltd.

pandemic encouraged students and faculty to see the pandemic as a unique learning opportunity. Despite the significant changes in the overall delivery of nursing education during this time, there were also immense learning opportunities from the “living laboratory” created by the pandemic. One such opportunity was the creation of a COVID-19 rapid testing clinic on our university campus.

Nursing education programs globally met the challenge of the pandemic with curricular innovation (Dewart, et al. 2020; Nashwan, Mohamed, & Kelly, 2020). For example, (Palancia Esposito & Sullivan, 2020) describe the move to both virtual and simulation approaches. Whereas (Wyatt et al., 2021) and (Allande-Cussó, 2020) describe the reliance on online and case-based teaching. However, with the predicted growth in pandemics related to climate change (The Lancet Respiratory Medicine, 2021), there is a need to consider how nursing students can learn within pandemic circumstances rather than around them. The global recognition of the importance of nursing will also have sustained impacts on nursing education approaches going forward (Rosa et al. 2020). Reflecting on the unique circumstances created by the COVID-19 pandemic and the efforts made individually and collectively to optimize entry-to-practice learning in the face of this global health crisis are paramount moving forward.

In the Canadian context, accredited nursing education programs adjusted their delivery methods for theory and experiential learning, while ensuring that entry-to-practice competencies were met (Canadian Association of Schools of Nursing, 2020). Nursing education was deemed an essential service and educational shortcuts were to be avoided. The realities of delivering a clinical learning experience amidst a global pandemic created unprecedented circumstances.

At The University of British Columbia (UBC), a Rapid Antigen Test (RAT) clinic was initiated to serve those living or working in congregate housing due to the potential for unchecked spread on campus. The variable incubation period of COVID-19 and the possibility of asymptomatic undetected cases (Gandhi et al., 2020) were of concern particularly related for those living and working in congregate housing. This clinic had the support of the medical health officer of the local health authority and a publicly accredited laboratory located at St-Paul's Hospital (Hunter, 2021; Kotyk, 2021). At the time the UBC RAT clinic was initiated, there was no provincial approach to RAT or federal guidance. The RAT clinic targeted those living or working in student housing to keep students and staff from unknowingly transmitting COVID-19; a parallel observational study sought to determine whether individuals would undergo voluntary semi-weekly screening and understand the experiences of those receiving RAT. The RAT was also viewed as an exciting and innovative opportunity for nursing students.

In this article, we describe how we used the RAT clinic as an educational activity to provide students with a unique learning environment.

3 | THEORETICAL APPROACH

We drew on the framework of experiential learning to focus on students actively engaging in the learning process in the evolving environment of both the pandemic and the RAT clinic. Experiential learning encompasses active engagement through a variety of strategies from simulations, clinical experiences, case studies, problem or inquiry-based learning, and concept mapping in the field or classroom (Lisko & O'Dell, 2010; (McLeod, 2017).

4 | DESCRIPTION OF THE EDUCATIONAL ACTIVITY

The purpose of the educational activity was to involve students in the RAT clinic to allow them to see the full scale of nurses' public health roles during the pandemic. The activity capitalized on a unique opportunity and challenge by integrating student learning across three courses. This approach allowed for innovative pedagogical practices with nursing students enrolled in both “Critical Inquiry and Research” and the “Primary Health Care (PHC) theory and practice” courses to consolidate learning across their courses. These students, who began their studies in September 2020, were in their second term (of a five-term integrated accelerated program) in January 2021. We worked with the students to draw on principles of research and public health activities such as surveillance, planning, coordination, delivery, and activities described in the Activity Wheel (Minnesota Department of Health, 2019). Students also had the opportunity to apply research principles, practice public health and primary care nursing, and also observe how components of care delivery evolved rapidly during implementation.

Three courses formed the foundation of student learning in RAT and pandemics including PHC theory, PHC practicum, and the Critical Inquiry and Research in Nursing and Primary Health Care Practice. These theory and practice courses were led by authors RD, FA and SW, respectively; all collaborated to integrate the RAT clinic in both the PHC theory and practicum courses. Nursing students were informed of the project, the necessary commitment for site staffing, provided with orientation material, etc. Two to three students per clinical group participated in the RAT clinic every week. Nursing students were provided pandemic and RAT training during the Critical Inquiry course, which included online resources related to medical device equipment (BD Veritor system), donning and doffing of personal protective equipment, principles of infection control and completing a competency assessment quiz on the medical device testing system.

Student responsibilities were multi-faceted and encompassed three roles: (i) Subject intake, testing; (ii) testing role; and communicating results. The first role (registration) required checking participants in, asking COVID-19 screening questions and explaining RAT processes. In the testing role, nursing students invited participants into the testing area, ensured hand hygiene was completed, and

directed them to a testing station. After verifying the participants' identity, students explained the process, answered questions, and collected the nasal swab specimen. They also assisted with specimen processing and reading the test results using the BD Veritor™ devices. The third role involved providing RAT results to participants. The students also engaged in site-wide infection control and both planned and incidental health teaching and provided explicit reminders for regular testing. There were also opportunities for students to engage in health promotion activities while participants awaited results. Students were supervised by registered nurses who remained present in all areas each clinic day.

4.1 | Timeline

In January 2021, the School of Nursing leadership discussed the feasibility of the nursing program supporting a RAT clinic on the UBC campus in first-year student residences (see Table 1 for timeline). The

team recognized the unique opportunity; the Associate Director (AD) of Research was to lead the research and evaluation component of this project. The authors of this paper worked to develop and implement the clinic alongside a multisectoral team, including: UBC Vice Provost Office; Safety & Risk Services; Student Residences; Student Health Services; Vancouver Coastal Health Authority; medical health officer with public health case/contact tracing team; and laboratory services at St. Paul's Hospital. Table 1 provides a timeline of the implementation of the educational initiative from January to April 2021.

4.2 | Clinic description

The RAT clinic provided a service to those living or working in congregate housing on campus, and served as an experiential learning experience for nursing students. Nursing students observed firsthand how the nursing faculty within the clinic interacted with various partners (e.g., UBC student housing, safety and risk services,

TABLE 1 Timeline

Month	Activity	Focus
Mid to Late December 2020	UBC's Provost Office approached the SoN Director about COVID-19 testing clinic initiative The Director approached the BSN Associate Director regarding viability. Once confirmed, the Director informed SoN Executive team	Viability of SoN contributions to UBC wider health initiatives
January 2021	The Executive team continued discussions regarding COVID-19 testing clinic. Faculty lead for Research connected to the initiative. Orchard Commons Residence was determined as the site for the RAT clinic. Faculty with Primary Health Care/ Public Health experience brought on to the planning team. Discussion of SoN faculty and undergraduate students' involvement in the RAT clinic Planning for the RAT clinic, ordering of supplies Established UBC/SoN RAT Support Team. Later included a project manager SoN began planning communication regarding RAT initiative to students Faculty connected with the community to gather additional information on set up and organization of testing clinics: Airport and Health Authority School of Nursing faculty and UBC team orientated students to RAT initiative by linking to research and practice courses: drawing on these course foundational knowledge, concepts and principles	Research and practice contributions to the RAT initiative Re-sequenced Research and Primary Health Care content to better prepare students for the clinic experience Highlighted students' attention to key concepts related to this learning activity Exposed students to additional practice skills: swabbing, testing and teaching (health promotion) Reinforced infection control skills
February 2021	Planning of student engagement in the RAT clinic with AD and Clinical Course Leads. Discussed importance of RAT experience linking to the principles of PHC Orientating Clinical Instructors to learning to teaching at RAT site Piloted with a small group of students (8) for 4 h focused on orientation of students to the tasks, registration of clinic participants, set-up, timing, flow of testing, conveying of results in a confidential manner and debrief. Created a system for students to sign up on a voluntary basis Determining SoN faculty to support RAT when students not in clinical Created a system for faculty to sign up on a voluntary basis	Ongoing support of students in the RAT clinic Adapted and adjusted clinic organization (room set up) and flow of testing Continued enhancement of health promotion teaching with each passing week
March 2021	UBC/SoN RAT clinic established at Orchard Commons student housing UBC Logistic Coordinator – track cost to run RAT clinic Shifted clinic participants to nasal self-swabbing	Students learned about nasal swab self-testing Students taught clinic participants how to conduct a nasal swab self-test
April 2021	Student RAT practice learning came to an end mid-April Students continued reflecting through journals regarding RAT clinic participation and learning	Faculty helped students to consolidate Research and PHC learning and RAT clinic experiences

health authority medical health officer) to develop, implement, and operate the RAT clinic. Subsequently, both students and faculty worked together to streamline operations, implement a batch testing approach for rapid testing, and met the needs of participants.

The clinic used the BD Veritor COVID-19 RAT (BD Veritor, 2021) to screen UBC students living in 9 specific university-owned and -operated housing sites, as well as staff working in any of these residences. As the project grew, students living on campus but in privately owned housing and varsity athletes were invited to access the screening site for regular RAT. The BD Veritor™ system used a non-invasive bilateral nasal swab specimen and lateral flow assay technology (BD Veritor, 2021). The test takes 15 min to complete once the assay is activated and requires a digital reader. The entire process – including participant check-in, testing, and result sharing – took approximately 25 min. The clinic offered RAT services and served to answer questions and concerns from the individuals coming to the site and from the university as a whole.

The PHC theory course content that provided the foundations for the RAT clinic experience included: Pandemic planning and contact tracing; epidemiology and surveillance; public health nursing and the Minnesota Activity Wheel Model (Minnesota Department of Health, 2019); health equity; harm reduction; and health promotion group teaching and facilitation skills (taught in the lab). Additionally, due to the study taking place to evaluate the feasibility of the clinic, theory from the Critical Inquiry (research) course was also incorporated. Concepts such as study design and data collection; ethical considerations in research; reliability; and validity were discussed within the learning activity.

5 | RESULTS OF THE CLINIC ACTIVITIES AND OUTCOMES

From February to April 2021, 60 nursing students participated in the RAT clinic through their course work. During this period, 3,536 BD Veritor tests were deployed with a total of 1,141 unique asymptomatic UBC students and staff living or working in congregate housing being tested; 55% of participants engaged in more frequent testing (Wong et al., 2021). During this period, we identified eight false positive tests, 25 COVID-19 positive individuals (confirmed by nasopharyngeal swabs and real-time reverse transcription polymerase chain reaction tests), with the vast majority of those who tested being negative.

Through this unique learning opportunity, nursing students engaged in meeting the challenge of starting, refining, and streamlining a RAT clinic during a pandemic; this provided a once-in-a-lifetime chance to engage in multidimensional experiential learning. This innovative educational experience resulted in learning in three domains (discussed below): (i) Public health and primary care; (ii) quality improvement; and (iii) research informing practice. It also provided students with social connection and interaction with their peers and faculty during a time when most coursework occurred online. Nursing students proved to be a helpful human resource during

a crises, while working in a RAT clinic proved to be a reciprocal service-learning opportunity.

5.1 | Public health and primary care during a pandemic

Nursing students learned about the public health nursing role and the Minnesota Activity Wheel Model (Minnesota Department of Health, 2019) in the classroom. The RAT clinic proved an opportunity for students to see this come alive in practice, as a framework to identify activities and levels of practice in the clinic including individual, community and systems. Nursing students observed the evolution of clinic design, set-up, implementation and nursing practice in the midst of a pandemic. Students practiced across three areas of public health nursing: (i) Health promotion; (ii) prevention and disease surveillance; and (iii) health protection.

5.1.1 | Health promotion

Health promotion is characterized as a process of enabling and empowering people to take ownership of their health and health behaviours through multifactorial approaches (World Health Organization Regional Office for the Eastern Mediterranean, 2017). Students had multiple opportunities to engage participants in health promotion through teaching. For example, within the testing and swabbing area, students were instructed to use a 10-minute engagement framework with RAT participants which provided an opportunity to answer questions or introduce information related to broader health-related topics. Initially, health topics were assigned to students to research and be prepared to address. As time went on, the nursing students identified the need for specific resources and took the initiative to develop them. For example, students created a one-page document outlining sensitivity and specificity principles of RAT to participants. During the 15–20 min spent waiting for results there were additional opportunities for nursing students to engage in health promotion activities. Students provided individualized and group teaching on relevant health education topics, including developing resiliency for first year students, healthy snacking and COVID-19 vaccines.

5.1.2 | Prevention and infectious disease surveillance

Nursing students engaged in secondary prevention by conducting screening and nasal swabbing volunteer participants. Through these hands-on experiential activities, students practiced communication and relational practice skills, data collection, applied nursing knowledge, critical thinking and clinical reasoning skills. Being part of the RAT site meant that students could observe and participate in technical aspects of infectious disease surveillance in an asymptomatic

population. While the majority of completed screening tests were negative, students also took part in and observed the concept of surveillance especially when a positive result was identified. Students developed confidence in their engagement with clinic participants, showed leadership, and provided feedback to faculty on how to improve the testing area for increased effectiveness of both prevention and surveillance.

5.1.3 | Health protection

At the clinic, nursing students engaged in health protection using a variety of methods. Students developed knowledge of infection control measures in a community context. As they engaged in diverse activities and moved to different stations in the RAT site, they utilized heightened infection control measures to keep themselves and others safe and protected. Over time students learned the full scope of infection control in a public arena leading to increased confidence and self-reliance to ensure public safety. Students also learned the importance of maintaining confidentiality and protection of privacy of all participants. For example, nursing students shared test results with each participant in a private room to ensure confidentiality. This provided the opportunity for the nursing students to develop empathic communication skills as participants were often nervous when first ushered into a private room to receive their results. In the rare occasion of COVID-19 positive results, applying confidentiality and privacy standard practices, along with remaining open, respectful and sensitive to participants' needs were even more critical.

5.2 | Quality improvement of the RAT site during a pandemic

Students and faculty engaged in a constant feedback loop that continuously enhanced the clinic experience and led to quality improvement. We engaged in short Plan-Do-Study-Act (PDSA) cycles through weekly consultations (Laverentz & Kumm, 2017). PDSA is one of the most frequently used processes in quality improvement projects, especially in health and nursing. When engaging in PDAS cycles, users go through one or multiple four-step cycles that lead to a change, which involve: (i) *Plan* a small-scale change based preliminary evaluation; (ii) *Do* or implement the change; (iii) *Study* (or evaluate) the change (data) against your pre-determined outcome(s); and (iv) *Act* to standardize the desired change or make modifications to the Plan to go through another cycle (Varkey, Reller, Resar, 2007; Christoff, 2018). In our RAT project, for example, students' ideas for how to effectively run batch testing on multiple RATs at one time assisted in a simplified process for new students rotating through the site to learn and reduce errors. Another example was the move from nurse-collected nasal swabs to self-collection. Students' feedback on how to provide short, simple instructions made the process of self-collection accessible to participants.

Nursing students were often the point of first contact in the healthcare system for participants, most of whom lived in residence during a time when non-essential travel was restricted. They were able to complete short assessments of participants' health questions and concerns in consultation with faculty. If referrals were required to other health services or resources (e.g., Residence Life advisors) nursing students and participants worked together to complete the referrals. As some participants return to the RAT site weekly, students were able to engage in relational continuity, developing rapport, and getting to know participants.

5.3 | Research informing practice

Typically, the "Critical Inquiry and Research in Health Care Practice" is offered only as an in-person 2nd term theory course, but in 2021, the course was offered online due to the pandemic. However, students had the unique opportunity to apply research concepts into practice by being involved in the RAT clinic. In addition to having individual assignments, which drew on the RAT clinic, students attending the clinic also learned together how research concepts such as bias, validity, reliability and the difference between screening versus diagnostic testing, were applicable and relevant to practice. Students also learned ethical concepts such as informed consent and about various study designs. Finally, they engaged in using qualitative methods to examine why participants came for RAT, feedback on experience, and if they would come back for RAT.

5.4 | Opportunities for interaction in a socially distanced world

An unintended benefit was that the RAT clinic provided an opportunity for nursing students to meet peers and faculty face-to-face, promoting teacher-student and peer-to-peer social interactions that were significantly restricted during the pandemic. Students reported that having members of the school's leadership team and faculty working alongside them enriched their learning. The RAT clinic became a place of social and learning connection for nursing students, creating a sense of community and belonging. One student anonymously stated in their final reflection for the primary health care theory course: "...I was directly able to apply these concepts throughout clinical practice in NURS 362: for example, taking part in the setup and implementation of UBC Rapid Testing enabled me to observe all aspects of the Activity Wheel in action. Applying the concepts from lecture into real world practice helped to solidify my learning and enabled me to appreciate the impact of nurses' contributions in our everyday lives."

6 | DISCUSSION

In this paper, we reported on the creation of an educational activity in a rapid testing clinic during the COVID-19 pandemic. Our paper

highlights the value of leveraging the knowledge and skills of nursing students to meet the needs of the community, while simultaneously creating a curricular value proposition. Others have also reported the mutual benefit of educational and service learning initiatives to support public health in the pandemic (Gresh et al., 2021; Ferguson et al., 2021). Together, these findings suggest the potential to prepare for future pandemics, and novel ways to support nursing education going forward (Dewart et al., 2020).

There were many lessons learned related to the nature of the educational activity and its implementation. One salient outcome relates to the opportunity for integrated clinical learning across what have traditionally been siloed courses. Integration of substantive areas of nursing practice and research was purposeful. Our positive experience in creating a closer collaboration of research and clinical faculty working across courses and focusing on a common goal demonstrates the potential to create pedagogically sound clinical learning opportunities for nursing students in a living lab. Beyond the pandemic, nursing educators might consider creating these types of cross-cutting experiential learning activities to illustrate the importance of theory moving into practice and the interconnectedness of our curriculum which could serve to excite students about nursing praxis (Christopher et al., 2020).

Current research tells us that pandemics and natural disasters, unfortunately, will become more commonplace (The Lancet Respiratory Medicine, 2021). However, nursing schools can explore ways to future proof their curriculums, so that students critically explore how to prevent such crises and to assist during their inevitable occurrence (El Ghaziri & Morse, 2020). We suggest that *within* nursing programs, preparatory actions can include:

- Integrating theory and clinical curriculum to improve nursing praxis. This will enable students to understand their professional ethical responsibility and concepts ranging from those used in public health to primary care;
- Identify faculty and students within the nursing school who are champions for action during such crises and leveraging their leadership abilities;
- Support tenured and clinical faculty to collaborate across course. Models where faculty are provided teaching credit, recognition and support for integration will likely increase the number of such initiatives.

Finally, we suggest that nursing leaders can facilitate partnerships and visibility across faculties and with university administration to learn from this pandemic, and prepare for the future.

6.1 | Limitations

In this educational activity, students were allowed to sign up at their own discretions rather than being assigned to this activity. This led to some students engaging in the activities frequently, on a regular basis, while others only attended one or twice (selection bias). We did not collect data on student's experiences of participation in the

clinic. Instead, the data we have to reflect on are the course evaluations and anecdotal comments on their learning experiences, which were positive, but have limitation of selection bias (as discussed above). Despite these limitations, the strength of this paper is that this was an innovative educational activity. The importance of disseminating such activities outweighs the importance of strict methodological rigour.

7 | CONCLUSION

Herein, we described the educational processes and implications related to first-year nursing students' participation in a COVID-19 testing clinic at our university campus. This educational activity required in-the-moment innovation, flexibility, creativity and pushed the boundaries of experiential learning, adapting PDSA cycles depending on the context of the RAT clinic. As this activity evolved, student learning progressed as they developed knowledge and confidence across substantive content areas. The application of research concepts in the practical setting also suggests that applied research opportunities are an important vector to bring research concepts to life. Our work presents an example of how the challenging circumstances of the pandemic created opportunities for innovative clinical learning. Lessons learned from this study can help us to create and implement educational activities that incorporate knowledge across courses to catalyse learning within and beyond the pandemic.

AUTHOR CONTRIBUTIONS

RD, ET, and STW contributed to the conceptualization, data curation, and methodology; RD, KH, MR, ET, FA, EB, and STW contributed to data curation, supervision, and project administration; all authors provided input into the original draft and writing, review and editing of the manuscript. All authors have agreed to the final version.

ACKNOWLEDGEMENT

The University of British Columbia (UBC) rapid testing advisory group: Ms. Rae Ann Aldridge, Dr. Pamela Ratner, Dr. Marc Romney, Dr. Michael Schwandt, Dr. Elizabeth Saewyc, and Mr. Andrew Parr. We would like to acknowledge the students and staff at UBC who participated, UBC School of Nursing faculty and staff who donated their time to administer the testing. This work was made possible by the donation of rapid antigen tests by the Safe Restart Agreement Contribution Program Secretariat (testing, contact tracing and data management).

CONFLICT OF INTEREST

No conflicts of interest for any of the authors exist.

ETHICAL APPROVAL

This project did not collect data from any participants, therefore, no ethics approval was required.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analysed in this study.

ORCID

Kristen Haase  <https://orcid.org/0000-0002-4457-2110>

Manon Ranger  <https://orcid.org/0000-0001-8253-0686>

Sabrina T. Wong  <https://orcid.org/0000-0002-9619-9012>

REFERENCES

- Allande-Cussó, R. (2020). Creating learning scenarios for final-year nursing students during the COVID-19 pandemic. *The Journal of Nursing Education*, 59(12), 709–713. <https://doi.org/10.3928/01484834-20201118-10>
- Veritor, B. D. (2021). COVID-19 rapid antigen test. BD Veritor™ Plus System. <https://bdveritor.bd.com/en-us/rapid-antigen-testing/covid-19>
- Canadian Association of Schools of Nursing. (2020). *Nursing education during the COVID-19 pandemic. Position statement*. Canadian Association of Schools of Nursing (CASN). <https://www.casn.ca/wp-content/uploads/2020/03/COVID-19-POSITION-STATEMENT.pdf>
- Christoff, P. (2018). Running PDSA cycles. *Current Problems in Pediatric and Adolescent Health Care*, 48(8), 198–201. <https://doi.org/10.1016/j.cpped.2018.08.006>
- Christopher, R., de Tantillo, L., & Watson, J. (2020). Academic caring pedagogy, presence, and Communitas in nursing education during the COVID-19 pandemic. *Nursing Outlook*, 68(6), 822–829.
- Dewart, G., Corcoran, L., Thirsk, L., & Petrovic, K. (2020). Nursing education in a pandemic: Academic challenges in response to COVID-19. *Nurse Education Today*, 92, 104471. <https://doi.org/10.1016/j.nedt.2020.104471>
- El Ghaziri, M., & Morse, B. L. (2020). Climate change in nursing curriculum: The time is now. *Journal of Nursing Education*, 59(11), 660.
- Ferguson, C. C., Figy, S. C., & Manley, N. A. (2021). Nursing home education during the COVID-19 pandemic. *Journal of Medical Education and Curricular Development*, 8. <https://doi.org/10.1177/2382120521997096>
- Gandhi, M., Yokoe, D. S., & Havlir, D. V. (2020). Asymptomatic transmission, the achilles' heel of current strategies to control covid-19. *The New England Journal of Medicine*, 382(22), 2158–2160. <https://doi.org/10.1056/NEJMe2009758>
- Gresh, A., LaFave, S., Thamilselvan, V., Batchelder, A., Mermer, J., Jacques, K., Greensfelder, A., Buckley, M., Cohen, Z., Coy, A., & Warren, N. (2021). Service learning in public health nursing education: How COVID-19 accelerated community-academic partnership. *Public Health Nursing*, 38(2), 248–257.
- Hunter, J. (2021). *UBC pilot project offering rapid tests to screen students in residence for COVID-19*. The Globe and Mail. <https://www.theglobeandmail.com/canada/british-columbia/article-ubc-pilot-project-offering-rapid-tests-to-screen-students-in-residence/>
- Kotyk, A. (2021). COVID-19 rapid tests: Here's when B.C. Health authorities will seek quicker results. CTV. <https://bc.ctvnews.ca/covid-19-rapid-tests-here-s-when-b-c-health-authorities-will-look-for-quicker-results-1.5336135>
- Lisko, S. A., & O'Dell, V. (2010). Integration of theory and practice: Experiential learning theory and nursing education. *Nursing Education Perspectives*, 31(2), 106–108.
- Laverentz, D. M., & Kumm, S. (2017). Concept evaluation using the PDSA cycle for continuous quality improvement. *Nursing Education Perspectives*, 38(5), 288–290. <https://doi.org/10.1097/01.NEP.0000000000000161>
- McLeod, S. A. (2017). *Kolb - Learning styles. Simply psychology*. Simple Scholar Ltd. <https://www.simplypsychology.org/learning-kolb.html>
- Minnesota Department of Health. (2019). *Public health activities: Applications for public health nursing practice (2nd ed.)*. Minnesota Department of Health. <https://www.health.state.mn.us/communities/practice/research/phncouncil/wheel.html>
- Nashwan, A. J., Mohamed, A. S., & Kelly, D. R. (2020). Nursing education in the emergence of COVID-19. *Open Journal of Nursing*, 10(06), 595–597.
- Palancia Esposito, C., & Sullivan, K. (2020). Maintaining clinical continuity through virtual simulation during the COVID-19 pandemic. *The Journal of Nursing Education*, 59(9), 522–525. <https://doi.org/10.3928/01484834-20200817-09>
- Rosa, W. E., Binagwaho, A., Catton, H., Davis, S., Farmer, P. E., Iro, E., Karanja, V., Khanyola, J., Moreland, P. J., Welch, J. C., & Aiken, L. H. (2020). Rapid investment in nursing to strengthen the global COVID-19 response. *International Journal of Nursing Studies*, 109, 103668.
- Varkey, P., Reller, M. K., & Resar, R. K. (2007). Basics of quality improvement in health care. *Mayo Clinic Proceedings*, 82(6), 735–739. <https://doi.org/10.4065/82.6.735>
- World Health Organization Regional Office for the Eastern Mediterranean. (2017). *Health promotion and disease prevention through population-based activities, including action to address social determinants and health inequity in assessment of essential public health functions in countries of the eastern Mediterranean region: Assessment tool* (p. 41). World Health Organization/Regional Office for the Eastern Mediterranean. https://applications.emro.who.int/dsaf/EMROPub_2017_EN_19354.pdf?ua=1
- Wyatt, T., Baich, V. A., Buoni, C. A., Watson, A. E., & Yurisc, V. E. (2021). Clinical reasoning: Adapting teaching methods during the COVID-19 pandemic to meet student learning outcomes. *The Journal of Nursing Education*, 60(1), 48–51. <https://doi.org/10.3928/01484834-20201217-11>
- Wong, S. T., Romney, M. G., Haase, K., Matic, N., Ranger, M., Dhari, R., Affleck, F., Tan, E., Ndateba, I., Tobias, E., Saewyc, E., Schwandt, M., & Sin, D. D. (2021). Feasibility and utility of rapid antigen testing for COVID-19 in a university residence: A cross sectional study. *medRxiv*, 1–5. <https://doi.org/10.1101/2021.05.24.21257732>

How to cite this article: Dhari, R., Haase, K., Ranger, M., Tan, E., Affleck, F., Bailey, E., & Wong, S. T. (2022). Engaging nursing students in a COVID-19 Point-of-Care rapid screening clinic. *Nursing Open*, 9, 2518–2524. <https://doi.org/10.1002/nop2.1272>