

Satisfaction of nursing undergraduates with hybrid surgical nursing teaching during the COVID-19 pandemic

Satisfação de graduandos de enfermagem com o ensino híbrido da enfermagem cirúrgica durante a pandemia da COVID-19

Satisfacción de los egresados de enfermería con la enseñanza híbrida de enfermería quirúrgica durante la pandemia de COVID-19

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ABSTRACT: Objective: To evaluate the satisfaction of undergraduate nursing students who attended the surgical nursing curricular unit in relation to remote theoretical teaching, simulation, and practical activities during the COVID-19 pandemic. **Methods:** A cross-sectional, quantitative study, conducted on a population of undergraduate nursing students. An electronic Google forms questionnaire was distributed, which included an informed consent form and three instruments: one addressing sociodemographic variables; one to evaluate remote theoretical, simulation, and practical activities; and another to evaluate satisfaction with simulation activities. **Results:** Among the 40 undergraduates, 100% had internet access, 90% were female, average age was 23.72 years old, the majority evaluated the contents of the remote theoretical classes as excellent and very good; 42.5% preferred both types of synchronous and asynchronous classes; the majority strongly agreed that the realistic simulations and the content selected for the simulations contributed to their learning, and the majority considered the practical activities to be good or excellent. **Conclusion:** Nursing students were satisfied with the simulation activities, remote theoretical classes, and practical classes at the hospital.

Keywords: Nursing. Teaching. Pandemics. Personal satisfaction.

RESUMO: Objetivo: Avaliar a satisfação dos graduandos do curso de bacharelado em enfermagem que cursaram a unidade curricular de enfermagem cirúrgica em relação ao ensino teórico remoto, à simulação e às atividades práticas na vigência da pandemia por COVID-19. **Métodos:** Estudo transversal, quantitativo, com a população de graduandos do curso de enfermagem. Foi enviado eletronicamente um formulário *Google forms*, com termo de consentimento livre e esclarecido, e três instrumentos, um com variáveis sociodemográficas; um para avaliar as atividades teóricas remotas, de simulação e práticas e outro para avaliação da satisfação das atividades de simulação. **Resultados:** Dos 40 graduandos, 100% possuíam acesso à internet, 90% eram do sexo feminino, com idade média de 23,72 anos. A maioria avaliou os conteúdos das aulas teóricas remotas como excelentes e muito bons; 42,5% tiveram preferência por ambos os tipos de aulas síncronas e assíncronas; a maioria concordou fortemente que as simulações realísticas e os conteúdos selecionados para as simulações contribuíram para a sua aprendizagem, a maioria considerou as atividades práticas como boa ou excelente. **Conclusão:** Os graduandos de enfermagem apresentaram satisfação nas atividades de simulação, nas aulas teóricas remotas e práticas no hospital.

Descritores: Enfermagem. Ensino. Pandemia. Satisfação.

RESUMEN: Objetivo: Evaluar la satisfacción de los estudiantes de pregrado en enfermería que asistieron a la unidad curricular de enfermería quirúrgica en relación con la enseñanza teórica remota, la simulación y las actividades prácticas durante la pandemia de COVID-19. **Métodos:** Estudio transversal,

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cuantitativo, realizado con estudiantes de la licenciatura en enfermería. Se utilizó un formulario electrónico de *Google Forms*, que incluía un término de consentimiento libre e informado y tres instrumentos: uno con variables sociodemográficas; otro para evaluar las actividades teóricas remotas, de simulación y prácticas, y un otro para evaluar la satisfacción con las actividades de simulación. **Resultados:** De los 40 estudiantes universitarios, el 100% contaba con acceso a internet, el 90% eran del sexo femenino, la edad promedio fue 23,72 años, la mayoría evaluó los contenidos de las clases teóricas remotas como excelentes o muy buenos; el 42,5% prefirió ambos tipos de clases sincrónicas y asincrónicas; la mayoría estuvo totalmente de acuerdo en que las simulaciones realistas y el contenido seleccionado para las simulaciones contribuyeron a su aprendizaje, la mayoría consideró que las actividades prácticas fueron buenas o excelentes. **Conclusión:** los estudiantes de enfermería expresaron satisfacción con las actividades de simulación, las clases teóricas remotas y las clases prácticas en el hospital.

Palabras clave: Enfermería. Enseñanza. Pandemias. Satisfacción personal.

INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) pandemic, caused by the novel coronavirus SARS-COV-2, necessitated the adoption of alternative strategies to ensure the continuity of education. The sudden disruption of previously planned activities, including in-person classes that integrate theoretical and practical components, has had short-, medium-, and potentially long-term effects on education¹.

Higher education institutions suspended in-person activities in compliance with Ordinance 343/2020, which allowed for the use of specific means and technologies to continue educational activities^{2,3}. Consequently, it became necessary to propose new educational approaches, including the adaptation of traditional methodologies and pedagogical practices to emergency remote teaching⁴. This shift encouraged the development of alternative strategies for non-face-to-face teaching, incorporating various technological tools. The integration of remote technologies during the COVID-19 pandemic presented significant challenges for all stakeholders: students and teachers^{5,6}.

During the pandemic, hybrid learning emerged as an educational strategy for health courses, necessitated by mandatory social isolation measures. Theoretical content was delivered through synchronous and asynchronous classes, while practical activities were conducted in healthcare settings across all levels of care, supported by rigorous training in the use of personal protective equipment⁷.

This scenario was observed globally, including at a university in the United States, where faculty implemented remote learning activities for clinical nursing courses. These activities incorporated virtual clinical scenarios, case studies, and exercises designed to enhance critical thinking. Similarly, the Association of PeriOperative Registered Nurses (AORN) provided remote education during the same period⁸.

The teaching and practice of perioperative nursing are highly specialized, encompassing patient assessment and safety; technical skills; proficiency with complex equipment and instrumentation; and an understanding of concepts and procedures related to sterilization processes and patient positioning. These aspects aim to optimize outcomes for both surgical patients and the perioperative team⁹.

Nurses involved in perioperative care, encompassing the preoperative, intraoperative, and postoperative phases, focus on ensuring both the physical and psychological safety of patients¹⁰⁻¹².

The pandemic has led to significant changes in surgical practice, presenting unique challenges as surgical procedures were greatly reduced or even suspended. Consequently, surgical education has been affected, and perioperative practices have integrated interventions to manage the risk of viral transmission^{13,14}.

Emergency remote teaching for the “surgical nursing” curricular unit of the undergraduate nursing course at Universidade Federal de São Paulo commenced in July 2020. During this period, the schedule for remote theoretical classes was established via the Moodle platform, with synchronous classes conducted through Google Meet and asynchronous classes recorded and made available on Moodle. In this curricular unit, students develop scientific knowledge and nursing techniques across the preoperative, intraoperative, and postoperative phases, within the surgical center, anesthesia recovery, and sterilization areas. A key objective of the course was to provide professional experiences that enable the application of perioperative nursing systematization for surgical patients¹⁵.

In January 2021, practical activities resumed, focusing on clinical simulation at the skills center, as well as hands-on experiences in hospital units and the surgical center, all conducted in accordance with established safety protocols.

Individual satisfaction and self-confidence in learning are critical factors within the teaching environment. As such, measuring these constructs can serve as a valuable indicator for the implementation and evaluation of new teaching strategies¹⁶.

OBJECTIVE

The aim was to assess the satisfaction of undergraduate nursing students who completed the surgical nursing course regarding remote theoretical teaching, practical teaching, and clinical simulation during the COVID-19 pandemic.

METHOD

This is a cross-sectional, quantitative study conducted at a federal higher education institution, involving undergraduate nursing students who completed the surgical nursing course in 2020 and 2021, this being the only inclusion criterion.

The study was approved by the Research Ethics Committee under CAAE: 47839621.60000.5505. Data collection was conducted after the completion of the curricular unit, via an invitation and an Informed Consent, both sent electronically.

Three instruments were used in the research. One included questions about personal and sociodemographic variables (such as gender, age, skin color, and family income), while the second was a questionnaire assessing access to the internet and other related factors.

The second instrument, developed by the authors, consisted of 29 questions to evaluate remote theoretical activities. The survey included nine questions with responses ranging from poor/low; average; very good/high; to excellent/very good; along with four open-ended descriptive questions: “What grade, from zero to ten, do you give to the theoretical classes?”; “What is your preference for remote classes, with the options: synchronous, asynchronous, or both?”; and “Describe your choice.” To evaluate the simulation activities (theoretical-practical) carried out at the Skills Center: five questions with answers: I strongly disagree; I disagree; I neither agree nor disagree; I agree; I strongly agree; three questions with alternatives (yes or no): whether the Simulation should be used more often, whether you would recommend the Simulation to other students and whether you would like to carry out the simulation on other topics; and one open-ended descriptive

question, asking students to describe other topics of interest. To evaluate the practical activities, six questions were asked, ranging from excellent, good, average, poor, and very poor; and one to assign a grade from zero to ten. This data collection instrument was adapted from the evaluation instrument already used by the surgical nursing curricular unit, developed by the professors of the discipline in previous years and based on the teaching plan and pedagogical project of the course.

The theoretical classes were conducted in a synchronous, dialogic, and remote format, while the asynchronous classes provided a space for review via the institutional platform. All materials were made available, including class recordings, supplementary materials, scientific articles, and activities, such as the submission of a structured summary. The topics covered included patient safety with an emphasis on safe surgery; nursing interventions and actions in the immediate preoperative period and surgical risk assessment; laboratory tests; specific procedures in the surgical center; processing of hospital medical supplies; nursing interventions and actions in the postoperative period; care with drains and catheters; postoperative pain management; postanesthetic recovery; and types of anesthesia.

The simulation activities were conducted in person and addressed the following topics: care for patients with drains, interpretation of laboratory tests, dressings, surgical attire, and the experience of the safe surgery checklist. All strategies were designed to promote a culture of patient and healthcare professional safety, encourage appropriate decision-making based on clinical conditions, build confidence in reading and interpreting laboratory tests, prevent infection, and enhance the recognition of potential complications in the immediate postoperative period.

Scenarios were developed in the simulation laboratory to replicate real-life situations, incorporating content previously covered in theoretical classes. After the scenarios were set up, the undergraduates entered the environment with the facilitator, who explained the scenario, presented the case, and shared the objectives with the participants. This phase is referred to as “briefing.” Following this, undergraduates and facilitators worked with the objects, mannequins, and other components of the scenario.

After the activities were completed, the facilitator, trained in this strategy, conducted the “debriefing.” The objectives of this stage were to discuss the skills and attitudes acquired, as well as to align the case content with the best scientific evidence, connecting practice to theory.

To assess satisfaction and self-confidence gained from the simulation, the Satisfaction and Self-Confidence in Learning Scale⁽¹⁶⁾ was used. This scale consists of 13 items, divided into two dimensions (satisfaction: five items; and self-confidence in learning: eight items). The scale follows a Likert-type format, with five response options:

- 1 =I strongly disagree with the statement;
- 2 =I disagree with the statement;
- 3 =undecided –I neither agree nor disagree with the statement;
- 4 =I agree with the statement; and
- 5 =I strongly agree with the statement.

Practical activities were conducted in person in groups of five or six students, in the surgical inpatient units: cardiology, transplantation, and urology, as well as in the surgical center and post-anesthesia recovery, following the precautions recommended at the time.

After these steps, a descriptive statistical analysis was performed.

RESULTS

Of the 64 enrolled students, 40 undergraduate nursing students accepted the invitation; 36 (90%) were female, mean age and standard deviation 23.7 (4.1); 32 (80%) self-identified as white; 37 (92.5%) were single, 30 (75%) lived with their parents or family members, 40 (100%) had no employment relationship; 23 (57.5%) reported a family income of 2 to 4 minimum wages; 36 (90%) had a computer for exclusive use; and all had internet access at home.

The responses regarding the evaluation of theoretical classes are in Table 1.

Table 1. Evaluation of synchronous and asynchronous theoretical classes by nursing undergraduates in the Surgical Nursing Course during the Pandemic (São Paulo, SP, n=40), Brazil, 2020–2021.

Questions	Excellent/very high (%)	Very good/high (%)	Average (%)	Poor/low (%)
1. Importance of the content covered in remote theoretical classes for professional training	30 (75)	10 (25)	0	0
2. Extent of the content covered in remote theoretical classes	25 (62.5)	12 (30)	3 (7.5)	0
3. Ability of the remote teaching situations to enhance learning	7 (17.5)	18 (45)	6 (15)	7 (17.5)
4. Depth of content covered in synchronous (live) theoretical classes	14 (35)	21 (52.5)	4 (10)	1 (2.5)
5. Depth of content covered in asynchronous (recorded) theoretical classes	10 (25)	21 (52.5)	9 (22.5)	0
6. Quality of the explanations provided by the professors during synchronous remote classes	26 (65)	11 (27.5)	2 (5)	1 (2.5)
7. Appropriateness of the videos posted on Moodle to complement the classes and enhance learning	17 (42.5)	14 (35)	9 (22.5)	0
8. Appropriateness of the scientific articles posted on Moodle to complement the classes and enhance learning	17 (42.5)	20 (50)	3 (7.5)	0
9. Ease of access to the references used in the classes	11 (27.5)	23 (57.5)	5 (12.5)	1 (2.5)
10. Quantity and range of recommended references for expanding understanding of the content (supplementary readings)	21 (52.5)	16 (40)	3 (7.5)	0
11. Quality of the clarifications regarding the preparation of activities to be considered as completed or not completed	22 (55)	13 (32.5)	4 (10)	1 (2.5)
12. How do you assess your commitment to studying the suggested readings or completing the exercises?	5 (12.5)	31 (77.5)	3 (7.5)	1 (2.5)
13. Choose the alternative that best represents your active participation in the classes?	3 (7.5)	21 (52.5)	16 (40)	0

In an open-ended question, not included in Table 1, regarding the evaluation of remote theoretical classes, where undergraduates could assign a grade from zero to ten, the average score was 8.45.

Regarding the evaluation of theoretical classes, 17 (42.5%) students stated that they preferred both remote theoretical class modalities, synchronous and asynchronous, for their learning; 13 (32.5%) preferred asynchronous classes, while 10 (25%) preferred synchronous classes.

Regarding the preference for the theoretical class format, undergraduates cited the following advantages of synchronous classes: the opportunity to clarify doubts during the session; increased focus and attention; enhanced learning; the dynamic nature of the classes fostering a stronger bond between the teacher and students; the direct interaction between teacher and student; and the possibility of recording the class for later viewing. One disadvantage mentioned was the lack of availability to watch the class live.

Regarding asynchronous theoretical classes, students mentioned the following advantages: the ability to review the material, pause the classes, and take notes; better access, as they faced difficulties accessing or having a computer available during synchronous classes; increased autonomy and commitment to studying; and the flexibility to choose the best time to attend. A disadvantage cited was the potential loss of focus, leading to more frequent breaks and a decrease in the quality of the study.

They also mentioned that both methods have positive and negative aspects. For example, asynchronous classes allow for better time management, while synchronous

classes offer greater interaction between teachers and students. Some students noted that these two modalities could complement each other. Additionally, some students did not express a preference.

When asked about their suggestions for improving remote classes, 13 (32.5%) undergraduates suggested: more dynamic classes with less reliance on reading slides and greater connection to practice, as well as incorporating activities during class to maintain engagement; the creation of quizzes during remote sessions using platforms like Menti, Socrative, and/or others, to aid in content learning; providing a list of exercises; offering slides in addition to recorded classes to assist in summarizing and revisiting topics as needed; providing more complementary readings; more synchronous sessions; and the recording of classes.

When asked about their opinion on whether the theoretical component of the surgical nursing curricular unit should remain in remote mode after the COVID-19 pandemic, 21 (52.5%) undergraduates disagreed, while 13 (32.5%) agreed.

The responses regarding the evaluation of theoretical-practical simulation activities, conducted in person at the university's simulation center in accordance with biosafety protocols, are presented in Table 2.

Regarding the number of clinical cases (n=5) addressed in the realistic simulations, 18 (45%) undergraduates rated it as good, and 16 (40%) rated it as excellent.

When asked if they would have liked to conduct realistic simulations on other topics within the Surgical Nursing Discipline, 16 (40%) of the undergraduates were unsure; 15 (37.5%) expressed that they would not have

Table 2. Evaluation of simulation activities by nursing undergraduates in the Surgical Nursing course during the Pandemic period (São Paulo, SP, n=40), Brazil, 2020–2021.

Questions	Strongly agree (%)	Agree (%)	Neither agree nor disagree (%)	Disagree (%)	Strongly disagree (%)
1. Did the realistic simulations enhance your learning?	20 (50)	13 (32.5)	5 (12.5)	1 (2.5)	1 (2.5%)
2. Do you think the content selected for the realistic simulations contributed to your learning?	20 (50)	15 (37.5)	4 (10)	1 (2.5)	0
3. Did you find the duration of each simulation adequate?	16 (40)	13 (32.5)	4 (10)	7 (17.5)	0
4. Were the scenarios organized in a way that allowed you to perform according to what you intended to resolve the case?	17 (42.5)	17 (42.5)	2 (5)	4 (10)	0
5. Did the simulations allow you to apply the content taught in the theoretical remote classes?	19 (47.5)	16 (40)	3 (7.5)	1 (2.5)	1 (2.5)

liked to, and only 9 (22.5%) indicated that they would have liked to.

The results of the Satisfaction and Self-Confidence in Learning Scale, which evaluates two dimensions (satisfaction: five items; and self-confidence in learning: eight items), as well as a Likert-type scale, with 5 items:

- 1 =I strongly disagree with the statement;
- 2 =I disagree with the statement;
- 3 =undecided – I neither agree nor disagree with the statement;
- 4 =I agree with the statement; and
- 5 =I strongly agree with the statement, are presented in Table 3.

Table 3 shows that the median was 4 for all questions, indicating agreement between the undergraduates and the items.

The evaluation of practical activities, concerning internships in the Surgical Inpatient Units, Surgicenters, and

Post-Anesthesia Recovery of a university hospital, is presented in Table 4.

The undergraduates assigned an average grade of 8.6 for the overall practical activities.

DISCUSSION

The study population consisted of undergraduate students: who had access to the internet, were predominantly female, single, and of white skin color, with an average age of 23.72 years. These findings align with those of a study conducted during the pandemic among 200 nursing students, which assessed satisfaction with online education and academic performance. In that study, the average age of the students was 21.7 years, and the majority (86.5%) were female¹⁷.

A study¹⁸ conducted during the COVID-19 pandemic, which focused on emergency and remote teaching, identified

Table 3. Results of the Satisfaction and Self-Confidence in Learning Scale by nursing undergraduates in the Surgical Nursing Course, during the Pandemic period (São Paulo, SP, n=40), Brazil, 2020–2021.

Satisfaction with current learning	Mean	SD	Median (min-max)
1. The teaching methods used in this simulation were useful and effective.	4.12	0.99	4 (1–5)
2. The simulation provided me with a variety of teaching materials and activities to promote my learning of the medical-surgical curriculum.	4.15	0.80	4 (1–5)
3. I liked the way my instructor taught through the simulation.	4.05	0.81	4 (2–5)
4. The teaching materials used in this simulation were motivating and helped me learn.	4.72	0.63	4 (2–5)
5. The way my instructor taught through the simulation was appropriate for how I learn.	4.05	0.98	4 (1–5)
Self-Confidence in learning	Mean	SD	Median (min-max)
6. I am confident that I have mastered the content of the simulation activity presented by my instructor.	3.85	0.80	4 (1–5)
7. I am confident that this simulation included the necessary content to master the medical-surgical curriculum.	4.00	0.93	4 (1–5)
8. I am confident that I am developing the necessary skills and acquiring the knowledge from this simulation to perform necessary procedures in a clinical setting.	4.15	0.76	4 (2–5)
9. My instructor used helpful resources to teach the simulation.	4.25	0.80	4 (2–5)
10. It is my responsibility as a student to learn what I need to know through the simulation activity.	3.95	1.06	4 (1–5)
11. I know how to seek help when I do not understand the concepts covered in the simulation.	4.22	0.89	4 (2–5)
12. I know how to use simulation activities to learn skills.	4.20	0.64	4 (2–5)
13. It is the instructor's responsibility to tell me what I need to learn in the topic developed during the simulation in class.	3.90	1.12	4 (1–5)

SD: standard deviation; min.: minimum; max.: maximum.

Table 4. Evaluation of practical activities by nursing undergraduates in the Surgical Nursing Course Unit during the pandemic (São Paulo, SP, n=40).

Questions	Excellent (%)	Good (%)	Average (%)	Poor (%)	Terrible (%)
1. Importance of the content addressed in the Inpatient Units for professional training	27 (67.5)	10 (25)	1 (2.5)	2 (5.0)	0
2. Importance of the content addressed in the Surgical Center and Post-Anesthesia Recovery for professional training	26 (65)	9 (22.5)	5 (12.5)	0	0
3. Scope of the activities provided by the practice settings	20 (50.0)	15 (37.5)	4 (10)	1 (2.5)	0
4. Ability of the experiences in the practice settings to contribute to the development of professional skills	22 (55)	14 (35)	3 (7.5)	0	1 (2.5)
5. Quality of the explanations provided by professors during practical activities	33 (82.5)	5 (12.5)	2 (5)	0	0
6. Quality of the guidance regarding activity preparation and assessments conducted in the practice settings	24 (60)	13 (32.5)	2 (5)	1 (2.5)	0

impacts on the psychological dimension that challenged the teaching-learning model and highlighted the use of technologies as a new possibility for education. The students who participated in this study reported several negative aspects, including difficulties in attending classes due to lack of access to computers and/or the internet, decreased interaction and socialization, and challenges in establishing a daily study routine.

Most participants rated remote theoretical classes as excellent or very good. Additionally, 42.5% of the undergraduates preferred a combination of both synchronous and asynchronous classes.

Online education can also offer nursing students the opportunity to become more independent, motivated, and self-directed learners, while enhancing their critical thinking and problem-solving skills, ultimately contributing to academic progress and achievement¹⁹⁻²¹.

A qualitative study conducted with 17 nursing students identified five categories related to the use of inadequate e-learning for practical components: challenges in assessing learning, connection issues, studying alone, lack of computer literacy, and limited skills in using e-learning²².

In another qualitative study with 11 nursing students during the COVID-19 pandemic, the following challenges were identified: difficulty in virtual communication, as students were unsure when to ask questions or how to approach their professors during remote classes; internet connectivity issues and distractions in their work environment; and students noted that professors were unfamiliar with online teaching pedagogy and the teaching platform. Positive aspects

mentioned included the ability to rewatch recorded classes and the classes being more direct and shorter in content²¹.

A quasi-experimental study conducted with 164 nursing students during the pandemic examined the effects of online learning on knowledge, the ability to assume responsibility, commitment to learning activities, autonomy, and the flow of learning. The pre- and post-test scores showed a significant increase in knowledge ($t=14.85$, $p<0.001$) and learning flow ($t=-2.15$, $p=0.033$). The post-test results emphasized the need to assess students' readiness for online learning and to prepare the learning environment through systematic educational planning, design, development, and evaluation to enhance the effectiveness of online learning outcomes²³.

Regarding the evaluation of simulation activities, most undergraduates agreed that the realistic simulations and the selected content significantly contributed to their learning.

A multicenter qualitative study conducted in Southeast Asia with 52 nursing students reported that online teaching during the COVID-19 pandemic could not simulate, replicate, or replace clinical experience. One student specifically highlighted the impact on a discipline requiring psychomotor and cognitive skills, noting that she was personally affected²⁴.

A study conducted at the University of Pennsylvania employed remote simulations with scenarios adapted from their in-house simulations, delivered synchronously over the internet — utilizing photos, video and audio clips, and PowerPoint presentations to replace interaction with mannequins. Students independently interpreted patient data and made clinical judgments. Independent sample *t*-tests were used to compare groups participating in high-fidelity

and remote simulations. The results showed no significant differences across items, except for the item “developed a better understanding of pathophysiology,” which was rated higher by the group using mannequins²⁵.

Simulation is one of the teaching methods currently recommended for preparing students to enhance their cognitive performance and self-efficacy through controlled and structured scenarios. This approach employs strategies that enable students to develop skills and attitudes while demonstrating knowledge in a safe environment. However, this method does not substitute clinical practice in healthcare settings or the nurse-patient relationship during surgical procedures²⁶.

Students satisfied with simulated practice tend to be more motivated to learn and engage with diverse scenarios in a controlled and protected environment. This experience fosters proactivity and provides meaningful learning. Additionally, it enhances their confidence by allowing them to reflect on practices, contexts, scenarios, and attitudes, thereby addressing gaps from both theoretical and clinical perspectives²⁷.

In a controlled and randomized clinical trial involving 34 nursing undergraduates from the fourth to the ninth semester at a Federal Public University, the Self-Confidence Scale was used to assess outcomes. The average satisfaction with learning was 4.65, while the average self-confidence in learning was 4.37²⁷.

During the COVID-19 pandemic, most clinical practice activities, mandatory for nursing students, were replaced with skills labs, simulation labs, virtual simulations, or clinical case studies^{28,29}. These alternatives provided new learning opportunities, reducing students’ fear of the clinical field and increasing their confidence as future nurses by enabling them to perform the nursing process on real patients³⁰. However, there is a lack of studies evaluating student satisfaction with these teaching strategies during this period. In the present study, most undergraduates (67.5%) rated the practical activities and internships as excellent.

Skills and knowledge in nursing are traditionally taught through face-to-face classes, laboratories, and internships. However, during the COVID-19 pandemic, alternative strategies were necessary to sustain high-quality nursing education^{31,32}.

Educational adaptations during the pandemic were crucial for maintaining the continuity of academic training. However, undergraduate nursing programs must ensure the availability of resources that facilitate interpersonal interaction³³.

The nursing profession inherently involves a practical nature, as it addresses the health-disease process and requires the development and/or refinement of specific skills for patient care³⁴.

Among the limitations of the study, the following are noteworthy: the cross-sectional design, which did not allow for comparisons between participants, and the insufficient sample size for performing correlational analysis.

As contributions to practice, the study provided evidence of the importance of bringing together diverse teaching strategies, including educational technology, to deliver theoretical content synchronously and asynchronously, associated with realistic simulation and practices in conventional surgical nursing scenarios.

CONCLUSION

During the COVID-19 pandemic, undergraduate nursing students evaluated the surgical nursing course taught in a hybrid format positively. A slight preference was observed for simulation activities and in-person practices.

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None.

CONFLICT OF INTERESTS

The authors declare there is no conflict of interests.

AUTHORS' CONTRIBUTION

ECT: Project administration, Formal analysis, Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing, Visualization. GMMC: Formal analysis, Conceptualization, Investigation, Methodology, Writing – original draft, Visualization. EBLD: Project administration, Formal analysis, Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing, Supervision, Visualization. BAR: Project administration, Formal analysis, Conceptualization, Data curation, Investigation, Methodology, Writing – review & editing, Visualization. RSLM: Project administration, Formal analysis, Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing, Supervision, Validation, Visualization.

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