

# The Effects of the COVID-19 Pandemic on Nursing Education Programs

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## ABSTRACT

**Background:** The U.S. Boards of Nursing (BONs) collect annual report data from their nursing programs as part of their approval process. This paper highlights the 2020 and 2021 annual report data on the effect of coronavirus disease 2019 (COVID-19) on all nursing programs in 17 BONs in 2020 and 19 in 2021. **Method:** Nursing programs answered 16 questions on the effect of COVID-19 on their programs. Because BONs require annual report data, all programs in the participating states answered the questions, which included 798 programs in 2020 and 929 in 2021. **Results:** Major disruptions in nursing education occurred during the pandemic. Clinical experiences and didactic classes were greatly affected, though alternative strategies were used. Student and faculty attrition rates were particularly high in 2021. **Conclusion:** The authors call for a national forum where nurse leaders analyze what happened and make recommendations for future crisis events. [*J Nurs Educ.* 2024;63(5):312-319.]

The National Council of State Boards of Nursing (NCSBN) has members that include Boards of Nursing (BONs) in the United States, 23 associate boards worldwide, and seven examination user boards in Canada. Examination user boards, similar to BONs in the U.S., have an exclusive mandate related to the regulation of the profession and public protection, and they use the NCLEX as their licensure examination (NCSBN, 2023). The U.S. BONs approve nursing education programs with established criteria to ensure they meet minimum requirements.

In 2020, the NCSBN released the findings of a large, mixed-methods study identifying the quality indicators of nursing programs. From this study, the NCSBN, along with an expert panel, developed evidence-based quality indicators of nursing programs, which became the foundation for our Regulatory Guidelines (Spector et al., 2020). Currently, many of the

BONs use the NCSBN evidence-based Regulatory Guidelines when they approve nursing programs.

Many BONs also request annual reports from their programs as part of their approval process. To assist the BONs with this, as well as to develop a consistent national nursing education database, the NCSBN established an Annual Report Program. The survey for the programs is based on the quality indicators identified, and any additional questions requested by BONs also are included. The surveys are sent to BONs in either September or January, and then the results are reviewed, verified, and cleaned before the final report, along with graphs, tables, matrices, and text responses are provided to the BONs. This program began in 2020, and for the first 2 years, the coronavirus disease 2019 (COVID-19) pandemic was in full swing. Therefore, in 2020 and 2021, the NCSBN included 16 questions about the effect of the pandemic on the nursing programs. This article reviews those responses.

## LITERATURE REVIEW

When the COVID-19 pandemic reached the U.S. in 2020, hospitals and other health care facilities were not experienced with making decisions about nursing students continuing their clinical experiences during a crisis. Additionally, this was a chaotic time, as not much was known about the COVID-19 virus. Consequently, many health care facilities closed their doors to nursing students, which prevented students from participating in clinical experiences with actual patients (NCSBN, 2021). At the same time, many nursing programs pivoted to online learning to avoid students being in contact with the virus. Additionally, there was a lack of personal protective equipment (PPE) in the early phases of the pandemic, and many health care facilities were unable to provide PPE to students (NCSBN, 2021). Therefore, the academic climate in nursing education changed drastically in a short time during the COVID-19 pandemic.

Because of the havoc the pandemic presented to nursing education programs, faculty needed to find creative ways to continue teaching. In a survey, the BONs reported several strategies that nursing education programs used during the pandemic to continue teaching students. Major alternative strategies for clinical experiences included increasing the percentage of simulation; following a 2:1 ratio of clinical hours to simulation; using virtual reality, virtual simulation, or augmented reality; and implementing unfolding case studies (NCSBN, 2021). Other strategies were reported as well (NCSBN, 2021) (**Table A**; available in the online version of this article).

Nursing education also was affected internationally by the pandemic. Goni-Fuste et al. (2021) conducted a systematic review in Spain related to students' experiences during global

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pandemics from 2003 to 2020. They found there was a need to adapt nursing education during pandemics, which included presenting information about the pandemic and knowledge and concern about risk and preventative behavior. The researchers reported that nursing programs provided alternative teaching strategies for educating students because of the frequent need to suspend clinical placements. The review examined the willingness of students to work or volunteer during a pandemic and explored the factors that made them more or less willing. Another theme in this review was the emotional effect of a pandemic on the students, and the authors suggested some strategies to support students. Ethical dilemmas with the care of patients during a pandemic also were identified as themes in this systematic review. For example, they explored attitudes with duty to care, resource allocation, and decisions regarding which patients should be admitted to critical care units. Many of these same themes also occurred in the U.S. during the COVID-19 pandemic (Emory et al., 2021; Feeg et al., 2021; Michel et al., 2021).

International nursing programs experienced similar challenges during the pandemic. One cross-sectional multicenter international study examined the COVID-19 nursing education experience with 30 nurse educators working in the 60 highest-ranked nursing schools in the world (based on the 2020 QS World University Ranking list) and found that 48% of faculty encountered internet-related problems, 44% reported difficulty in adapting the curriculum to distance education, and 65% had issues providing examinations to students (Kalanlar, 2022). In a Canadian qualitative study, nursing faculty described their experiences in the pandemic as being overwhelming and exhausting from working extra hours to support students and adapting to remote teaching (VanLeeuwen et al., 2021).

Similarly, nursing students reported unpreparedness related to the sudden new normality. In a cross-sectional survey study conducted in Belgium, almost half of the surveyed students ( $n = 301$ ) could not continue their clinical placement as planned, and they perceived there were little to no opportunities for practicing nursing skills (Ulenaers et al., 2021). This can be aligned with U.S. nursing students' worries about passing the NCLEX and being prepared to practice competently (Feeg et al., 2021; Michel et al., 2021). Although Ulenaers et al. (2021) reported students were satisfied with the support provided by the nursing schools, students in another study by Michel et al. (2021) criticized their nursing faculty for being ill-prepared and for their unresponsiveness to help. Some students regarded online education as inadequate and expressed their concerns about not being able to get a job as a nurse because they had such limited experiences in school during the pandemic (Michel et al., 2021).

One curricular deficit the pandemic uncovered was that many programs lacked strategies in emergency preparedness, as was seen with the chaotic movement to online education and with attempts to arrange quality alternative clinical experience activities when many health care facilities abruptly closed their doors to nursing students (Michel et al., 2021). Michel et al. (2021) suggested future planning should consider how a crisis affects faculty and students, alternative teaching strategies, collaborative agreements with practice facilities, and understand-

ing regulatory requirements. Students also should receive safety training about the pandemic and know how to safely use PPE. This lack of readiness for crisis situations also was seen globally (NCSBN, 2022).

Transition to practice in the U.S. also was difficult during the pandemic. Smith et al. (2021) conducted a descriptive study that included 295 new graduates, representing 136 programs across 38 states. These new graduates reported up to 240 hours of clinical experiences were replaced by other modalities, such as virtual simulation or other experiences. Many reported large gaps in time since they had worked with actual patients. These new graduates often feared being overwhelmed or providing unsafe care. This study suggests that practice needed to work collaboratively with education to transition these new graduates. Indeed, the pandemic illustrated to the nursing community that developing practice-academic partnerships is important for the future of nursing education (Spector et al., 2021). In this model, the practice setting will provide hands-on experiences for nursing students while being supervised by faculty. At the same time, the students also receive academic credits. In those regions where this model was in effect during the COVID-19 pandemic, the nursing students were considered essential workers and were able to care for patients in health care facilities for their clinical experiences (Spector et al., 2021).

## METHOD

### Data Source

NCSBN collects survey data for many BONs' annual reports of nursing programs. In 2020 and 2021, the annual report survey included 16 questions about the effects of the COVID-19 pandemic on the programs' education. This descriptive study evaluated the effects at the start of the pandemic in 2020 compared with the effects of the pandemic in 2021.

### Participating Nursing Programs

All prelicensure nursing education programs from BONs participating in the annual reports program were eligible to participate in this evaluation; two BONs chose not to participate in the COVID-19 survey because they had conducted their own surveys. The final sample participating in the COVID-19 survey included 17 BONs ( $n = 798$  nursing programs) in 2020 and 19 BONs ( $n = 929$  nursing programs) in 2021 (Leader to Leader, 2023).

### Procedure

NCSBN developed a universal set of nursing education questions based on the evidence (Spector et al., 2020), which provided a consistent national database for this study. In addition to the core set of questions, an additional set of 16 closed- and open-ended questions addressing the effects of COVID-19 on nursing education was included. NCSBN solicited participation of BONs throughout the U.S. and its territories. The universal set of questions along with the COVID-19 questions were sent to all prelicensure programs at participating BONs using Qualtrics® software. The BONs determined the time of distribution based on their rules or typical annual report distribution time point. Survey links were created and sent to the

**TABLE 1**  
Overall Effect of the COVID-19 Pandemic on the Nursing Program

Effect of COVID-19	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
Major disruption	382 (47.9)	208 (22.4)
Quite a bit	276 (34.6)	336 (36.2)
Somewhat	120 (15)	288 (31)
A little	12 (1.5)	80 (8.6)
Not at all	8 (1)	17 (1.8)

Note. COVID-19 = coronavirus disease 2019.

<sup>a</sup>n = 798.

<sup>b</sup>n = 929.

participating BONs for distribution to their prelicensure nursing programs. Nursing programs were provided a minimum of 30 days to complete the survey. Some BONs allowed their nursing programs an extended deadline depending on their board's rules. At the end of the survey completion deadline, NCSBN sent the BONs a list of nursing programs that submitted an annual report for the BONs to confirm that all of their prelicensure programs had completed the survey. After confirmation was received from the BONs that all prelicensure programs had submitted, NCSBN reviewed, cleaned, and verified all data. NCSBN then sent the BONs their final report, and at the end of the year, an aggregate report of all participating BONs was created and distributed to all participating BONs and posted on NCSBN's website (Spector et al., 2022).

### Data Analysis

A total of 798 nursing programs in 2020 and 929 nursing programs in 2021 participated in the survey. Nursing programs were asked how seriously their programs were affected by COVID-19. In 2020, almost half (47.9%) of the programs stated COVID-19 caused a major disruption. By 2021, only 22.4% reported COVID-19 caused a major disruption, and 36.2% of programs reported COVID-19 had affected their program "quite a bit" (Table 1 and Figure 1) (Leader to Leader, 2023). This may suggest nursing programs had observed some improvement from 2020 to 2021 or developed ways to adapt to the new environment created by COVID-19.

At the beginning of the pandemic in 2020, most of the nursing programs reported COVID-19 greatly affected didactic education (n = 740 [92.7%]) and clinical experiences with patients in clinical sites (n = 778 [97.5%]) (Leader to Leader, 2023) (Table 2 and Figure 2). COVID-19 continued to affect didactic education (n = 774 [83.3%]) and clinical experiences (n = 858 [92.4%]) in most programs into 2021. Simulation (n = 691 [86.6%]) and skills laboratories (n = 669 [83.8%]) also were greatly affected at the beginning of the pandemic. Although the effects on these parts of the program had eased by 2021, a majority of the programs reported experiencing continued effects.

The specific changes made to didactic education included moving to 100% online education, moving to partial online

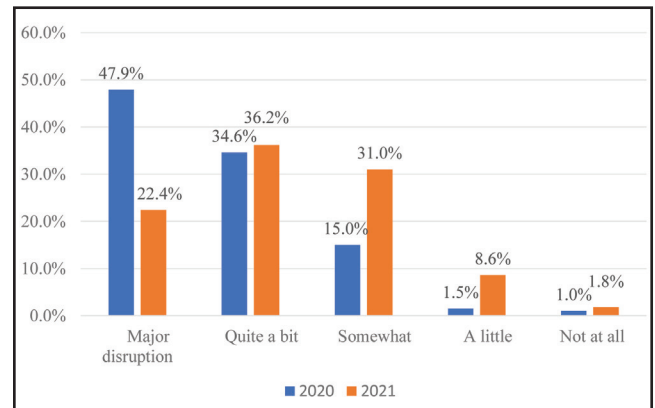


Figure 1. Overall effect of coronavirus disease 2019 on nursing program.

education, and implementing smaller class sizes. Most programs (n = 624) [78.2%] moved to 100% online education at the start of the pandemic, whereas 21.8% (n = 174) did not. By 2021, 33% of the programs (n = 307) were still using 100% online education, while 67% (n = 622) had begun to move back to pre-pandemic modalities. Approximately one-fourth (n = 183 [23%]) of the nursing programs implemented smaller class sizes in 2020, and approximately one-third (n = 338 [36.4%]) of the programs implemented smaller classes in 2021. A very small percentage of programs (n = 19 [2.4%]) reported making no changes to didactic education at the start of the pandemic in 2020. Almost one-fourth of the programs (n = 182 [22.8%]) reported making other adaptations to didactic education at the start of the pandemic, such as conducting online examinations and using remote examination proctoring. By 2021, approximately one-third (n = 302 [32.5%]) of the programs reported using other adaptations, such as masking and social distancing for in-person classes (Leader to Leader, 2023).

The decision to close and cease in-person classes primarily was made by governor proclamation (n = 589 [73.8%]) and administration at the university, college, or educational organization (n = 759 [95.1%]) (Leader to Leader, 2023). In addition to modifying delivery of didactic education to an online format, approximately one-fourth of the programs (n = 183 [22.9%]) used smaller class sizes to navigate didactic education at the start of the pandemic. By 2021, approximately one-third of the programs (n = 338 [36.4%]) reported using smaller class sizes (Table 3).

In addition to ceasing in-person didactic education at the start of the pandemic, more than half (n = 423 [54%]) of the nursing programs reported face-to-face clinical experiences with patients at all sites were canceled, and the remaining programs canceled in-person clinical experiences to some extent (Table 4). These cancellations primarily were caused by restrictions made by the clinical settings. Only a few (n = 11 [1.4%]) nursing programs had not canceled in-person clinical experiences at the start of the pandemic in 2020. In 2021, 16% (n = 149) of nursing programs reported cancellation of in-person clinical experiences at all sites. Many clinical settings had relaxed their restrictions likely due to implementation of COVID-19 vaccine requirements, decreased community transmission and risk, and decreased COVID-19 hospitalizations and mortality. However, only 10.4% (n = 97)

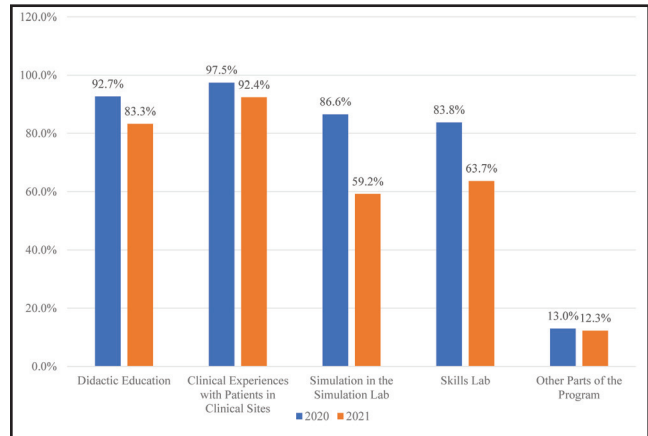
**TABLE 2**  
Effect of the COVID-19 Pandemic on Specific Aspects of the Nursing Program

Effect of COVID-19	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
Didactic education		
Yes	740 (92.7)	774 (83.3)
No	58 (7.3)	155 (16.7)
Clinical experiences with patients in clinical sites		
Yes	778 (97.5)	858 (92.4)
No	20 (2.5)	71 (7.6)
Simulation in the simulation laboratory		
Yes	691 (86.6)	550 (59.2)
No	107 (13.4)	379 (40.8)
Skills laboratory		
Yes	669 (83.8)	592 (63.7)
No	129 (16.2)	337 (36.3)
Other parts of the program		
Yes	104 (13)	114 (12.3)
No	694 (87)	815 (87.7)

Note. COVID-19 = coronavirus disease 2019.

<sup>a</sup>n = 798.

<sup>b</sup>n = 929.



**Figure 2.** Effect of coronavirus disease 2019 on specific aspects of the nursing program.

to Leader, 2023). However, compared with 2020, a larger percentage of programs reported using more in-person simulation with mandated social distancing ( $n = 234$  [57.9%]) versus without mandated social distancing ( $n = 170$  [42.1%]).

Nursing programs were asked whether grading criteria were modified during the pandemic (Table 6). In 2020, one-fifth ( $n = 152$  [19%]) of the programs reported changing their grading criteria, which included modifications such as using pass/fail grading and allowing multiple opportunities for testing. By 2021, only 9% ( $n = 84$ ) of the programs reported using modified grading criteria. Student and faculty attrition also were examined (Table 7). The reported student attrition ( $n = 255$  [32%]) and faculty attrition ( $n = 91$  [11.4%]) at the beginning of the pandemic in 2020 was lower than in 2021 ( $n = 439$  [47.3%] versus  $n = 178$  [19.2%], respectively) (Leader to Leader, 2023).

Nursing programs reported the overall quality of education at their institution was approximately the same during the pandemic compared with before the pandemic, both in 2020 ( $n = 451$  [56.5%]) and 2021 ( $n = 437$  [49.8%]). In 2020, 33.3% ( $n = 266$ ) of the programs reported lower overall quality, whereas only 6.5% ( $n = 52$ ) reported overall higher quality. (Figure 3 and Table 8).

## DISCUSSION

The results of this survey illustrate that COVID-19 had a major adverse effect on nursing education in 2020 and 2021, although that effect was less in 2021. In 2020, 82.5% of the programs reported experiencing a major or quite a bit of a disruption as a result of the pandemic; in 2021, the programs reported that same disruption to be 58.6%. The improvement in 2021 may be attributed to a variety of reasons, such as more students were able to have clinical experiences with actual patients, and more programs brought students back for didactic classes (NCSBN, 2022). Moreover, nursing programs likely became more proficient with the alternative strategies of teaching students. Interestingly, during the pandemic, didactic and clinical education were affected the most in 2020 (92.7% didactic and 97.5% clinical), although the effects were still high in 2021 (83.3% didactic and 92.4% clinical). However, in 2020, most

of the programs reported no cancellations in face-to-face clinical experiences, with modifications to in-person clinical experiences persisting through 2021.

Of the nursing programs that reported continued in-person clinical experiences at the start of the pandemic, only 10.2% ( $n = 37$ ) reported their students had direct contact with COVID-19 patients during these experiences. Most of these programs reported students had sufficient PPE, whether provided by the health care facility, the program, or the students themselves, when in contact with COVID-19 patients (Table 4).

Nursing programs reported several alternatives to canceled in-person clinical experiences (Table 5). In 2020, almost all of the programs ( $n = 441$  [96.1%]) that were required to cancel some portion of their clinical experiences reported the integration of virtual simulation. Programs also incorporated the use of simulation in the laboratory with mandated social distancing ( $n = 159$  [34.6%]), simulation in the laboratory without mandatory social distancing ( $n = 300$  [65.4%]), and other adaptations, such as simulation via Zoom ( $n = 227$  [49.5%]). By 2021, most of these programs ( $n = 297$  [73.5%]) were still using virtual simulation as an alternative to in-person clinical experiences (Leader

**TABLE 3**  
Changes to Didactic Education Due to the COVID-19 Pandemic

Change	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
Converted to 100% online education		
Yes	624 (78.2)	307 (33)
No	174 (21.8)	622 (67)
Percentage of didactic education converted to online		
76% to 90%	39 (24.4)	77 (15.9)
51% to 76%	34 (21.3)	82 (16.9)
26% to 50%	34 (21.3)	118 (24.4)
≤25%	36 (22.5)	134 (27.7)
Other comments	16 (10.0)	72 (14.9)
Not applicable	1 (0.6)	1 (0.2)
Smaller class sizes		
Yes	183 (22.9)	338 (36.4)
No	615 (77.1)	591 (63.6)
No changes		
Yes	19 (2.4)	71 (7.6)
No	779 (97.6)	858 (92.4)
Other adaptations		
Yes	182 (22.8)	302 (32.5)
No	616 (77.2)	627 (67.5)
Decision to close and cease face-to-face contact was made by:		
Governor proclamation		
Yes	589 (73.8)	555 (59.7)
No	209 (26.2)	374 (40.3)
Administration at the university, college, or educational organization		
Yes	759 (95.1)	853 (91.8)
No	39 (4.9)	76 (8.2)
Dean or director of the nursing program		
Yes	367 (46)	416 (44.8)
No	431 (54)	513 (55.2)

(86.6%) faculty reported simulation was adversely affected because of the pandemic; in 2021, this percentage dropped to 59.2% of the faculty. Similarly, in 2020, approximately three quarters (83.8%) of the faculty reported that skills laboratories were affected by the pandemic; in 2021, this

**TABLE 3 (CONTINUED)**  
Changes to Didactic Education Due to the COVID-19 Pandemic

Change	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
Faculty in the nursing program		
Yes	162 (20.3)	170 (18.3)
No	636 (79.7)	759 (81.7)
Other		
Yes	97 (12.2)	159 (17.1)
No	701 (87.8)	770 (82.9)

Note. COVID-19 = coronavirus disease 2019.

<sup>a</sup>n = 798.

<sup>b</sup>n = 929.

percentage decreased to 63.7%. Faculty likely were able to decrease contagion in the simulation and skills laboratory more easily compared with actual clinical experiences and lectures.

In 2020, three-fourths (78.2%) of the programs reported converting to 100% online; the remaining programs reported using hybrid classes. However, 100% online teaching decreased to 33% in 2021, with many more programs converting to hybrid classes. The 2021 decrease in 100% online teaching likely benefitted some students and faculty who had difficulties with online education during the pandemic (Kalanlar, 2022; Michel et al., 2021). Another alternative strategy was that some programs reported decreasing their class size because of the pandemic (22.9% in 2020 versus 36.4% in 2021). There was a greater decrease in class size in 2021, which again might be attributed to a better understanding of alternative teaching methods.

Alternative strategies for clinical experiences included programs using either simulation in person (19.2% in 2020 versus 45% in 2021) or with mandated social distancing (34.6% in 2020 versus 57.9% in 2021). Research supports replacing up to 50% of in-person clinical experiences with simulation (Hayden et al., 2014). Another strategy for providing clinical experiences was that in 2020 most programs (96.1%) used virtual simulation, although this decreased to 73.5% in 2021. To date, the research has not supported virtual simulation as a replacement for clinical experiences (Foronda et al., 2020). Some schools decreased the number of clinical hours that were required for students to graduate (22.9% in 2020 and 8.4% in 2021), whereas other schools changed their grading criteria (19% in 2020 and 9% in 2021). This lowering of requirements is concerning as it could affect the quality of the nurses who graduate; this should be explored further for future crisis situations.

In 2020, of the nursing students who cared for patients in health care facilities, 10.2% had contact with COVID-19 patients; in 2021, this increased to 37.6% of nursing students. However, only 29.7% of the health care facilities provided PPE to students in 2020 and 36.8% in 2021. Generally, the nursing program or the students themselves provided the PPE. The nursing community might want to collaborate with practice

**TABLE 4**  
Changes to Clinical Experiences During the COVID-19 Pandemic

Change	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
91% to 99%	423 (54)	149 (16)
76% to 90%	105 (13.2)	68 (7.3)
51% to 75%	53 (6.6)	60 (6.5)
26% to 50%	52 (6.5)	133 (14.3)
≤25%	41 (5.1)	286 (30.8)
None of the sites	11 (1.4)	97 (10.4)
Other	113 (14.2)	136 (14.6)
Students had direct contact with COVID-19 patients during clinical experiences		
<i>n</i>	364	684
Yes	37 (10.2)	257 (37.6)
No	327 (89.8)	427 (62.4)
Students had sufficient PPE when in contact with COVID-19 patients		
<i>n</i>	37	258
Yes, provided by health care facility	11 (29.7)	95 (36.8)
Yes, but some PPE was provided by the nursing program or the students themselves	10 (27)	73 (28.3)
Yes, but the nursing program and the students provided all PPE	5 (13.5)	37 (14.3)
No, please explain	1 (2.7)	2 (0.8)
Other	10 (27)	51 (19.8)

Note. COVID-19 = coronavirus disease 2019; PPE = personal protective equipment.  
<sup>a</sup>*N* = 798.  
<sup>b</sup>*N* = 929.

facilities and public health agencies about how to prevent this from happening in any future pandemics.

Decisions to close programs and cease face-to-face education were made most frequently in nursing schools by governor proclamation and school administration. Faculty, according to the findings of this survey, had little input in closing programs to face-to-face contact (20.3% in 2020 versus 18.3% in 2021). Particularly in nursing, when administrators make decisions about whether to close programs during a pandemic or a disaster, they should listen intently to nursing faculty because

**TABLE 5**  
Alternatives to Canceled In-Person Clinical Experiences During the COVID-19 Pandemic

Alternative	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
Simulation laboratory with manikins, faculty, and students present		
Yes	88 (19.2)	182 (45)
No	371 (80.8)	222 (55)
Simulation in the laboratory with manikins, faculty and students, although with mandated social distancing		
Yes	159 (34.6)	234 (57.9)
No	300 (65.4)	170 (42.1)
Virtual simulation		
Yes	441 (96.1)	297 (73.5)
No	18 (3.9)	107 (26.5)
Decreased number of clinical hours needed for graduation		
Yes	105 (22.9)	34 (8.4)
No	354 (77.1)	370 (91.6)
Other adaptations (e.g., simulation via Zoom)		
Yes	227 (49.5)	146 (36.1)
No	232 (50.5)	258 (63.9)

Note. COVID-19 = coronavirus disease 2019.  
<sup>a</sup>*n* = 459.  
<sup>b</sup>*n* = 404.

nursing is a health profession where clinical experiences are essential for students to apply the content learned in class and prepare to become professional nurses (Spector et al., 2020).

This survey also found attrition in both the student and faculty population during the pandemic, and this is concerning because of the ongoing nursing and faculty shortage. Student attrition was higher than faculty attrition, with 32% in 2020 and 47.3% in 2021. The 2021 figures show that nearly half of nursing students left their programs, which is difficult to understand. Some of the reasons students reported for leaving their programs included having difficulties in not adapting to the online or virtual formats, having personal responsibilities at home, and experiencing financial hardships. Faculty attrition was smaller but is still a major concern in nursing education because of the faculty shortage. In 2020, 11.4% of faculty left

**TABLE 6**  
Nursing Program Modified Grading Criteria During the COVID-19 Pandemic

Modification	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
Nursing programs changed grading criteria (e.g., using pass/fail grading and providing students with multiple opportunities to test)		
Yes	152 (19)	84 (9)
No	646 (81)	845 (91)

Note. COVID-19 = coronavirus disease 2019.

<sup>a</sup>n = 798.

<sup>b</sup>n = 929.

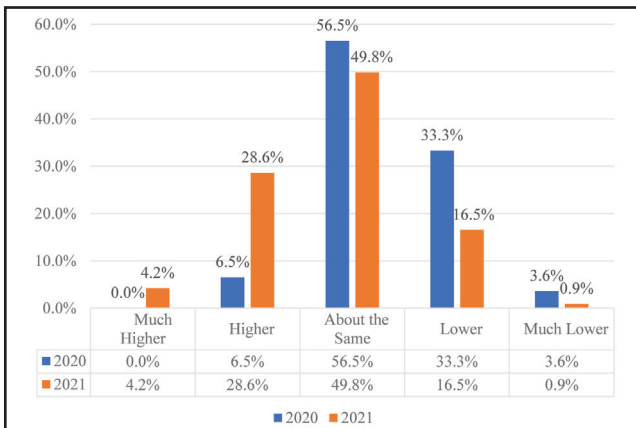
**TABLE 7**  
Student and Faculty Attrition During the COVID-19 Pandemic

Group	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
Students		
Yes	255 (32)	439 (47.3)
No	543 (68)	490 (52.7)
Faculty (e.g., faculty with health conditions retiring early)		
Yes	91 (11.4)	178 (19.2)
No	707 (88.6)	751 (80.8)

Note. COVID-19 = coronavirus disease 2019.

<sup>a</sup>n = 798.

<sup>b</sup>n = 929.



**Figure 3.** Overall quality of education during the coronavirus disease 2019 pandemic compared with prior to pandemic.

**TABLE 8**  
Overall Quality of Education During the COVID-19 Pandemic Compared With Before the Pandemic

Overall Quality	2020 <sup>a</sup>	2021 <sup>b</sup>
	n (%)	
Much higher	0 (0)	37 (4.2)
Higher	52 (6.5)	251 (28.6)
About the same	451 (56.5)	437 (49.8)
Lower	266 (33.3)	145 (16.5)
Much lower	29 (3.6)	8 (0.9)

Note. COVID-19 = coronavirus disease 2019.

<sup>a</sup>n = 798.

<sup>b</sup>n = 929.

their positions; this increased to 19.2% in 2021. Some of the reasons faculty gave for leaving their jobs were worries about their health and safety, and difficulty adapting to online education. These data support nursing faculty collaborating with leaders in practice and health care about developing strategies to prevent attrition from happening in future crises.

The final question on the survey asked faculty to give their opinions on the quality of education during 2020 and 2021. The results illustrated faculty began to feel more comfortable with their alternative teaching strategies in 2021. In 2020, only 6.5% of the faculty reported the quality of their teaching was higher or much higher than before the pandemic, whereas in 2021, almost one-third (32.8%) reported the quality of their teaching as higher or much higher. Similarly, in 2020, 36.9% of the faculty reported the quality of education was lower or much lower than before the pandemic compared with 17.4% of the faculty in 2021. These data suggest providing faculty with resources and strategies for teaching during a pandemic or crisis would be valuable.

The findings of this study, as well as other nursing education studies on the pandemic, indicated most nursing students were not able to have clinical experiences with actual patients during the pandemic. Clinical experiences are important for students to apply the content they have learned and practiced such as assessment, clinical judgment, management, and documentation. Additionally, some faculty and students had difficulty using online platforms during didactic education. Therefore, a national nursing education forum on what happened during the COVID-19 pandemic to nursing education and how to plan for future crisis events would be an exceptional outcome of this pandemic. The nursing education community then could hold regional meetings to distribute the information so that faculty at all levels would be involved. A document containing information on emergency preparedness could be developed and added to the curriculum. Additionally, suggestions regarding alternative teaching strategies could be provided, along with data and evidence to support the strategies.

A major challenge for nursing education during the pandemic was that many health care facilities closed their doors to students. This not only prevented students from caring for actual patients and decreased their confidence and experience, it also prevented health care facilities from obtaining care that nursing students provide to patients, thus relieving their overwhelmed staff. This lack of clinical experiences is one possible reason that nursing students' licensure pass rates declined during the pandemic (NCSBN, 2022).

Besides developing alternative strategies for students' clinical experiences, a national nursing education forum could call for practice and education to collaborate much more closely than they do now. Some programs did collaborate with practice during the pandemic (Spector et al., 2021); in such cases, nursing students were able to access health care facilities and provide care to patients. The COVID-19 pandemic has indicated the need for the nursing profession to take steps to prevent the chaos that ensued during the pandemic from ever happening again during any future crisis or pandemic.

### LIMITATIONS

Although much of the data collected were quantitative, such as the percentage of clinical experiences that were cancelled, some data represent participants' opinions (e.g., "What is the quality of education now compared with before the pandemic?"). Data from opinions are subjective and therefore may not be reliable. Additionally, the participants had to recall previous situations and may not have accurately remembered what occurred during the pandemic.

### CONCLUSION

This survey found nursing education suffered immensely during the pandemic. Oftentimes, students were not able to care for patients directly, and their didactic classes were 100% remote. When students were able to have clinical experiences in health care settings, the students or their nursing program often had to provide PPE. Faculty and students reported difficulties in adjusting so quickly to alternative teaching strategies. There was increased student and faculty attrition during the pandemic, particularly during 2021. Students' NCLEX pass rates fell significantly, and nursing students who were educated during the pandemic reported feeling incompetent and scared. One valuable outcome of the COVID-19 pandemic might be for nursing to have a national forum where nurse leaders can discuss what happened during the pandemic and deliberate on how they can move forward more successfully in the future during similar crisis situations.

### REFERENCES

Emory, J., Kippenbrock, T., & Buron, B. (2021). A national survey of the impact of COVID-19 on personal, academic, and work environments of nursing students. *Nursing Outlook*, 69(6), 1116–1125. <https://doi.org/10.1016/j.outlook.2021.06.014> PMID:34627617

Feeg, V., Mancino, D. J., Mooney, C., Catanese, S., & Buonaguro, R. (2021). The COVID-19 nursing student self-reported education and

personal experiences during the early months of the pandemic. *Dean's Notes*, 42(4), 1–8. <https://www2.ajj.com/sites/default/files/services/publishing/deansnotes/spring2021.pdf>

Foronda, C. L., Fernandez-Burgos, M., Nadeau, C., Kelley, C. N., & Henry, M. N. (2020). Virtual simulation in nursing education: A systematic review spanning 1996 to 2018. *Simulation in Health-care*, 15(1), 46–54. <https://doi.org/10.1097/SIH.0000000000000411> PMID:32028447

Goni-Fuste, B., Wennberg, L., Martin-Delgado, L., Alfonso-Arias, C., Martin-Ferreres, M. L., & Monforte-Royo, C. (2021). Experiences and needs of nursing students during pandemic outbreaks: A systematic overview of the literature. *Journal of Professional Nursing*, 37(1), 53–64. <https://doi.org/10.1016/j.profnurs.2020.12.004> PMID:33674110

Hayden, J. K., Smiley, R. A., Alexander, M., Kardong-Edgren, S., & Jeffries, P. R. (2014). The NCSBN national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education. *Journal of Nursing Regulation*, 5(2, Suppl.), S3–S64. [https://doi.org/10.1016/S2155-8256\(15\)30062-4](https://doi.org/10.1016/S2155-8256(15)30062-4)

Kalanlar, B. (2022). Nursing education in the pandemic: A cross-sectional international study. *Nurse Education Today*, 108, 105213. <https://doi.org/10.1016/j.nedt.2021.105213> PMID:34798476

Leader to Leader (2023). The impact of COVID on nursing education. National Council of State Boards of Nursing *Leader to Leader* newsletter. [https://www.ncsbn.org/public-files/LTL\\_Summer2023.pdf](https://www.ncsbn.org/public-files/LTL_Summer2023.pdf)

Michel, A., Ryan, N., Mattheus, D., Knopf, A., Abuelezam, N. N., Stamp, K., Branson, S., Hekel, B., & Fontenot, H. B. (2021). Undergraduate nursing students' perceptions on nursing education during the 2020 COVID-19 pandemic: A national sample. *Nursing Outlook*, 69(5), 903–912. <https://doi.org/10.1016/j.outlook.2021.05.004> PMID:34183191

National Council of State Boards of Nursing. (2021). NCSBN's environmental scan: COVID-19 and its impact on nursing and regulation. *Journal of Nursing Regulation*, 11(Suppl.), S1–S36. [https://doi.org/10.1016/S2155-8256\(21\)00002-8](https://doi.org/10.1016/S2155-8256(21)00002-8) PMID:33473323

National Council of State Boards of Nursing. (2022). The NCSBN 2022 environmental scan: Resiliency, achievement, and public protection. *Journal of Nursing Regulation*, 12(4), S1–S56. [https://doi.org/10.1016/S2155-8256\(22\)00015-1](https://doi.org/10.1016/S2155-8256(22)00015-1) PMID:35070487

National Council of State Boards of Nursing. (2023). *Membership*. <https://www.ncsbn.org/membership.page>

Smith, S. M., Buckner, M., Jessee, M. A., Robbins, V., Horst, T., & Ivory, C. H. (2021). Impact of COVID-19 on new graduate nurses' transition to practice: Loss or gain? *Nurse Educator*, 46(4), 209–214. <https://doi.org/10.1097/NNE.0000000000001042> PMID:33988534

Spector, N., Silvestre, J., Alexander, M., Martin, B., Hooper, J., Squires, A., & Ojemeni, M. (2020). NCSBN regulatory guidelines and evidence-based quality indicators for nursing education programs. *Journal of Nursing Regulation*, 11(2), S1–S64. [https://doi.org/10.1016/S2155-8256\(20\)30075-2](https://doi.org/10.1016/S2155-8256(20)30075-2)

Spector, N., Silvestre, J., McIntosh, Q., & Kaminski-Ozturk, N. (2022). *National nursing education annual report: 2020-2021 aggregate data*. National Council of State Boards of Nursing. <https://www.ncsbn.org/public-files/AnnualProgramReport-AggregateData-2022.pdf>

Spector, N. M., Buck, M., & Phipps, S. (2021). A new framework for practice-academic partnerships during the pandemic—and into the future. *The American Journal of Nursing*, 121(12), 39–44. <https://doi.org/10.1097/01.NAJ.0000803192.68710.8f> PMID:34792503

Ulenaers, D., Grosemans, J., Schrooten, W., & Bergs, J. (2021). Clinical placement experience of nursing students during the COVID-19 pandemic: A cross-sectional study. *Nurse Education Today*, 99, 104746. <https://doi.org/10.1016/j.nedt.2021.104746> PMID:33545565

VanLeeuwen, C. A., Veletsianos, G., Johnson, N., & Belikov, O. (2021). Never-ending repetitiveness, sadness, loss, and "juggling with a blindfold on:" Lived experiences of Canadian college and university faculty members during the COVID-19 pandemic. *British Journal of Educational Technology*, 52(4), e13065. <https://doi.org/10.1111/bjet.13065> PMID:34230673



TABLE A

Alternative Teaching Methods During the COVID-19 Pandemic

- Working across disciplines to obtain funding for PPE and required testing in long-term care sites
- Conducting reverse case studies; students were given patient information, and they devised the clinical presentation and care involved, which then was discussed in class
- Front-loading clinical experiences or didactic content depending on the positivity rates
- Using alternative clinical sites, such as calls to older adults in isolation who might be suffering from depression or lack of support
- Participating in telehealth experiences with faculty or APRNs
- Taking fewer students to clinical experiences with shorter hours
- Rotating students through several types of clinical rotations
- Participating in reflective journaling
- Holding skills tests by video
- Developing a skills boot camp

Note. COVID = coronavirus disease 2019; PPE = personal protective equipment; APRN = advanced practice nurse.