

# Nursing Educators' Experiences of Clinical Internships during Coronavirus Pandemic (COVID-19): A Qualitative Study

## Abstract

**Background:** The COVID-19 pandemic has challenged the clinical training of nursing students. Because the quality improvement of nursing clinical training, in which nursing educators play a major role, requires the continuous monitoring of the status quo, this study aimed to explore the nursing educators' experiences of clinical internships during the COVID-19 pandemic. **Materials and Methods:** This descriptive qualitative study was conducted in 2021 in Tehran, Iran. Participants ( $n = 10$ ) were faculty members of Tehran University of Medical Sciences and were training nursing students in medical-surgical wards in educational hospitals. Data were collected from November 2021 to January 2022 through deep, semi-structured, and face-to-face interviews until data saturation by nurse researchers and were analyzed by the Graneheim and Lundman (2004) method. **Results:** Analysis revealed five main categories including "fear of coronavirus disease," "increased attention to health protocols," "educational challenges," "shortage of personal protective equipment" and "adaptation to pandemic conditions." **Conclusions:** These findings showed nursing educators face many problems in teaching clinical skills to students during the COVID-19 pandemic; so, health policymakers should put policies that can manage this crisis in future occurrences. In educational curricula, critical conditions affecting the quality of student's education should be taken into consideration to reduce obstacles.

**Keywords:** COVID-19, internship, nursing, students

## Introduction

One of the missions of nursing faculties is to prepare and empower students to play their professional roles.<sup>[1]</sup> Nursing training is a combination of both theoretical and clinical learning experiences that it provides to nursing students in eight educational semesters. Clinical education for nursing students in hospitals starts from the second semester and continues until the eighth semester. Clinical training is considered a major part of nursing education that can greatly influence students' professional identity.<sup>[2]</sup> Clinical settings allow nursing students to learn and improve professional practices. In this regard, clinical educators play an important role not only in teaching clinical skills to nursing students but also in guiding and supporting them to develop their skills.<sup>[3]</sup>

Although clinical training aims to develop the clinical skills of students in complex clinical settings, the rapid and unpredictable changes in clinical settings have turned

into a challenge for the clinical training of nursing students.<sup>[4]</sup> Clinical settings can be a challenging part of training, even without the additional challenges of a pandemic.<sup>[5]</sup> However, the COVID-19 pandemic has also affected nursing education.<sup>[2]</sup> Due to the outbreak of the pandemic, to preserve and protect the health of students and faculty, in-person classes, clinical proficiency exams, and student clinical placements were suspended around the world, especially in countries severely affected by the pandemic, and many universities switched from traditional face-to-face teaching and learning to virtual modes. This approach was also adopted by Iranian nursing schools. For practical training, virtual experiences were used as alternatives to simulation, which suggested it may be flexible when it comes to replacing it. This modality, which complements clinical education, is currently being presented as a possible solution to replace clinical time.<sup>[6]</sup> However, most schools, including

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our school in Iran, may have never used high-fidelity stimuli to teach clinical skills, so training took place in clinical settings. During the COVID pandemic period, the theoretical courses were continued virtually; however, during the peak of COVID-19, when the probability of transmission of the disease was high, clinical education was forced to be postponed and was carried out during the time between the peaks.

The COVID-19 pandemic has become a source of many concerns for nursing students because they should attend different hospital wards during their clinical internship course,<sup>[7]</sup> and most nursing faculties are not willing to postpone the clinical training and practical learning courses of students.<sup>[8]</sup> Some documents indicate that practical learning in clinical settings of some nursing faculties faces many limitations and challenges that have not been thoroughly studied.<sup>[9]</sup> The exposure of students to dangerous and contagious diseases in clinical settings can be a source of stress for students and, thereby, negatively affect the quality of education.<sup>[10]</sup> Considering the importance of clinical training, educational planners should provide favorable conditions for better learning and preserving efficiency in clinical settings during crises.<sup>[11]</sup> A study by Ulenaers *et al.* (2021)<sup>[5]</sup> was conducted to describe the experiences of nursing students during clinical training during the COVID-19 pandemic and the importance of concepts that influence student experiences and outcomes under normal circumstances. It is shown that uncertainties and anxiety play an important role in this. So, support from supervisors and lecturers is extremely important and there is a renewed emphasis on building an open and collaborative culture in which students can fully develop.

Because during the COVID-19 pandemic, clinical educators needed both to attend clinical settings and engage with students, it is necessary to understand clinical educators' experiences to identify the difficulties faced in clinical internships during the COVID-19 pandemic. Such understandings can be used to optimize current coaching strategies but can also be used during future similar events. This study aimed to explore the nursing educators' experiences of clinical internships during the COVID-19 pandemic.

## Materials and Methods

This was a descriptive qualitative study conducted in 2021. Data were collected from November 2021 to January 2022 through deep, semi-structured, and face-to-face interviews. Nursing educators who were usually members of the School of Nursing and Midwifery were selected through purposive sampling. Data collection continued until data saturation by a nurse researcher. The researcher was a female, with training in qualitative methodology, and had experience in qualitative research. The researcher had no relationship with participants before the study.

Participants included nursing educators with experience in clinical education during the COVID-19 pandemic who were members of the School of Nursing and Midwifery. Participants were excluded from the study if they did not want to participate or continue the interview. Following 12 interviews with 10 participants (the researcher interviewed two participants twice and other participants once), researchers formed a theoretical understanding of the nursing educators' experiences of clinical internships during the COVID-19 pandemic. We reached data saturation in the 10<sup>th</sup> interview. However, two more interviews were conducted to ensure that no new data emerged.

This study was conducted in clinical training departments of teaching hospitals affiliated with the Tehran University of Medical Sciences (TUMS). TUMS has 14 teaching hospitals, and its different departments are used for clinical training of nursing students. An interview guide was developed before the interview. Interviews were conducted in a quiet, independent space in the faculty for approximately 40–60 min. The interview questions were developed based on the research objectives. At the beginning of each interview, the participants were asked to explain their experiences of clinical internships during the COVID-19 pandemic. As the interview progressed, the participants were asked more detailed questions about the subjects; for example, "How is a working day of clinical internship during the COVID-19 pandemic?" and "What problems did you face during clinical internships in this period?" The content of the interviews was recorded through voice recording and note-taking. At the end of each interview, the recorded content was reviewed a couple of times before transcribing them, and also the quality of notes was evaluated.

Data were analyzed by all researchers using the inductive content analysis method from the qualitative content analysis methods of Graneheim and Lundman (2004)<sup>[12]</sup>: Reading the text of each interview and interviews as a whole multiple times to understand the data, condensing and interpreting the meaning units, and sorting the codes that had a commonality into subcategories that shared certain aspects into conceptual and semantic categories and adding to the themes based on a comparison of similarities. After coding the text transcribed by the first author, the emerging codes were discussed among the first and other authors. All authors individually grouped these codes into categories. The first author's categories were compared, contrasted, and interpreted with other authors' categories. These categories were re-discussed, reviewed, and refined by the authors several times. Data were analyzed manually.

To secure the rigor of the study, the criteria of Lincoln and Guba (1985) were considered to establish credibility, dependability, conformability, and transferability of the study.<sup>[13]</sup> The data credibility was checked through member checking, peer checking, and participants'

feedback. Researchers followed to secure the credibility by repeatedly analyzing and reconfirming the collected data. To ensure dependability, results were described in as much detail as possible, and the statements of participants were appropriately reported. To add to the conformability of the data, the authors attempted to present all the information provided by the participants thoroughly without any change or modification. Also, the result was confirmed by one researcher with extensive experience in qualitative research to check whether neutrality was maintained. Finally, the data and contextual conditions were described comprehensively to make the data more transferrable. Results were presented to two nursing educators who did not participate in this study and confirmed whether they agreed with it.

### Ethical considerations

This research project was approved by the Ethics Committee of Tehran University of Medical Sciences (IR.TUMS.MEDICINE.REC.1400.996). After obtaining written informed consent, the participants were briefed on the study's aim and that the interview would be recorded. The recorded data were transcribed; then the audio file was deleted. They were also assured that their information would be kept confidential and they could leave the study at any stage they desired.

### Results

In this study, 10 clinical nursing educators took part in this study who were aged 25 to 44 years and had a work experience of 1 to 13 years. Two participants were males and the rest were females. In terms of educational attainment, only one participant had a master's degree and the rest had a Ph.D. in nursing education [Table 1].

A total of 211 codes were extracted from individual interviews. Then, the initial codes with thematic similarities were placed under seven subcategories. Finally, the participants' experiences of clinical internship during the COVID-19 pandemic were summarized into five categories [Table 2] as follows: fear of coronavirus disease, increased attention to health protocols, educational challenges, shortage of personal protective equipment, and adaptation to pandemic conditions.

#### Fear of coronavirus disease

Clinical educators were worried about developing this disease or transmitting it to their family members and students. This category consisted of two subcategories as follows: educators' fear of developing coronavirus disease, and educators' fear of students developing coronavirus disease.

##### *Educators' fear of developing coronavirus disease*

The presence in hospitals and communication with patients, staff, or students, and also commute from home to hospitals

**Table 1: Characteristics of participants**

Participants	Number
Age	
25-30	1 (10%)
30-35	4 (40%)
35-40	3 (30%)
40-45	2 (20%)
Gender	
Female	8 (80%)
Male	2 (20%)
Educational attainment	
Master	1 (10%)
Ph.D	9 (90%)
Work experiences (year)	
1-5	6 (60%)
5-10	3 (30%)
10-15	1 (10%)

**Table 2: Categories and sub-categories of data**

Categories	Sub-categories
Fear of coronavirus disease	Educators' fear of developing coronavirus disease Educators' fear of students developing coronavirus disease
Increased attention to health protocols	-
Educational challenges	Inconsistencies between learning opportunities offered by clinical environments and pedagogical objectives proposed for the internship Allocation of hospital beds to COVID-19 patients Increased responsibility of clinical educators
Shortage of personal protective equipment	-
Adaptation to pandemic conditions	Psychological exhaustion Compatibility with multiple roles

or dormitories by public transport vehicles were among the main sources of fear for nursing educators. Some participants were living with their elderly parents or some family members with immunosuppressive diseases or under chemotherapy, and some participants had a young kid and were worried about the possible transmission of coronavirus disease to them. A participant stated: *"I was afraid of developing coronavirus disease on my way to the hospital; I was also worried about my parents because they are old and have underlying diseases (P. 7)."*

##### *Educators' fear of students developing coronavirus disease*

Educators stated that commuting by public transport vehicles, accommodation in a dormitory, and communication with students, medical staff, and patients, especially asymptomatic carriers, in the hospital environment, were the main sources of their concerns about developing coronavirus disease. They also pointed out that it was not possible to observe all health protocols during some medical procedures. A participant said: *"It is not possible to keep physical distancing between educators and students and also between students and patients during*



*clinical training. For example, it is not possible to do so when students are practicing intravenous therapy, and this increases the risk of transmission (P. 10)."*

Another experience of nursing educators was their observations about students' fear of developing coronavirus disease, especially students from other cities who were living in dormitories. The main sources of students' fear were living in a dormitory, commuting by public transport vehicles, communicating with suspected patients or carriers in the hospital, and transmitting the disease to their family members. A participant stated: *"Since commuting to the hospital by public transport vehicles was a major source of concern for students, some of them requested the internship hours to be extended so that they needed to commute from home or dormitory to the hospital less frequently (P. 3)."*

### Increased attention to health protocols

The main strategy to prevent the transmission of this disease was to follow health protocols, such as hand washing and disinfection, wearing a face mask, physical distancing, and vaccination. The participants believed that students in the clinical internship paid more attention to health protocols during the COVID-19 pandemic because they were worried about developing this disease and missed one or more days of internship due to COVID-19 disease. A participant stated: *"Before the COVID-19 pandemic, students might have been negligent in observing hygiene rules, such as not wearing a mask or not washing their hands regularly. But during the period of COVID-19, I noticed that students constantly washed their hands or used N95 masks to prevent getting sick and being absent from internships (P. 8)."*

### Educational challenges

This category of educators' experiences included three subcategories as follows: inconsistencies between learning opportunities offered by clinical environments and pedagogical objectives proposed for the internship; non-compliance of the internship procedure with the pandemic conditions; and increased responsibility of clinical educators.

#### *Inconsistencies between learning opportunities offered by clinical environments and pedagogical objectives proposed for the internship*

Nursing students need to first learn theoretical courses and then enter clinical settings to improve their practical skills. The mandatory postponement of internship courses due to the COVID-19 pandemic created a gap between theoretical and practical training and, as a result, declined the initial clinical skills of nursing students. Also, nursing students usually visit different wards of educational hospitals to acquire clinical skills. Because the increased number of individuals makes it difficult to observe physical distancing, head nurses and matrons sometimes

do not accept the presence of student groups to prevent the increased risk of disease transmission and protect the health of individuals. A participant said: *"The repeated postponement of internship courses during the COVID-19 pandemic considerably reduced the clinical skills of students because they were away from clinical settings for a long time; even students of the fifth semester who had a rich theoretical background had a poor performance in simple nursing procedures such as intravenous therapy or blood sampling (P. 7)."*

Because of the increased admissions to hospitals during the COVID-19 pandemic, there was a need to dedicate more beds to patients with coronavirus disease. A participant stated: *"Patients of different diagnoses were admitted to the same ward because of pandemic conditions; for example, there were also patients with cardiovascular or urologic diseases in gastroenterology wards. Since students, for example, had not yet studied the theories and basics of cardiovascular diseases or principles of care for patients undergoing a prostatectomy, it was not possible to train them in the relevant procedures and clinical skills (P. 4)."*

#### *Allocation of hospital beds to COVID-19 patients*

To acquire clinical skills in each of the specialized nursing courses, students must complete their internship in the departments related to the same course so that, while achieving the goals of the internship, the students get to know the disease related to the same courses and nursing care methods. During the coronavirus pandemic, due to the increase in the number of people visiting hospitals, the need for hospital beds increased, and some wards were assigned to patients with coronavirus, and patients with different diseases were admitted to one ward. For this reason, a department was not assigned to patients related to the same department. Integration of patients with different diagnoses caused problems in the educational process of students. A participant stated: *"For the internship of each internal surgery course, the special objectives of the same course must be covered, but due to the decrease in the number of patients in the Corona situation or the admission of only emergency cases, the students only did the routine work of the department, and the objectives of the internship were not covered. Because the conditions were such that it was not possible to teach the skills of taking care of specific patients in the internal surgery course, such as performing procedures, communicating, etc. (P. 5)."*

#### *Increased responsibility of clinical educators*

To reduce the resistance of hospital wards to accept students for internships and prevent the crowding of students in clinical settings during the COVID-19 pandemic, students were sent to different wards in groups of 2 or 3. However, because only one clinical educator was responsible for training and supervising a large number of students, clinical educators had to take more responsibilities to

provide the same quality of training to all students. In other words, compared to the normal conditions before the COVID-19 pandemic, the responsibilities of educators increased and they felt more tired. A participant stated: *“In the past, all students used to spend their internship in a single hospital ward, but during the COVID-19 pandemic, we had to divide students into smaller groups and send them to different wards to prevent crowds. For example, every two or three students were in a single ward under the supervision of the educator, and I had to visit all wards to explain the necessary points to students and monitor their performance (P. 10).”*

### Shortage of personal protective equipment

There was a need for equipment such as surgical masks (or N95 masks), gloves, and disinfectants to observe health protocols and adhere to personal protection principles during the COVID-19 pandemic. Although the faculties limitedly provided students with personal protective equipment, students themselves were responsible for arranging such equipment. A participant stated: *“Hospital wards did not provide educators and students with personal protective equipment, and students themselves had to provide such equipment (P. 7).”*

### Adaptation to pandemic conditions

The continuation of the COVID-19 pandemic has forced people to take adaptive measures to deal with this crisis. Such measures may lead to either success or failure of people in adaptation to critical conditions. This category of educators' experiences included two subcategories: psychological exhaustion and compatibility with multiple roles.

#### Psychological exhaustion

Due to the prolongation of the COVID-19 pandemic conditions, people had to adopt various methods to deal with the stress caused by this health crisis to gradually diminish their excessive fears and concerns. A participant stated: *“I am experiencing less fear and stress compared to the beginning of my internship course. During the first days, I was greatly worried about developing the disease or having the symptoms. However, my fears and concerns gradually reduced after a couple of weeks and I experienced less stress. Although we strictly observed all health protocols through the end of the internship course, we were mentally calmer after a few weeks (P. 1).”*

#### Compatibility with multiple roles

The COVID-19 pandemic has affected different aspects of human life, and it is not easy for all people to adapt themselves to such stressful conditions. This crisis may cause problems in other life responsibilities such as household chores, more monitoring of children's education at home due to the virtualization of schools, or caring for children, especially little ones. A major challenge

for educators with a child was the curtailed activity of kindergartens. A participant stated: *“Since kindergartens were sometimes closed during the COVID-19 pandemic and my parents were living in another city, I had to leave my little child alone at home and I was worried about my child's health while being at work (P. 4).”*

## Discussion

This study aimed to find the nursing educators' experiences of clinical internships during the COVID-19 pandemic. The COVID-19 pandemic has challenged the clinical training of nursing students in clinical settings. The literature review shows that a few studies have focused on clinical educators' experiences of clinical training during the pandemic. Based on the findings of this study, these experiences were presented in five categories.

One of the categories was fear of coronavirus disease. Because health professionals and health science students (who are the mainstay of care in teaching hospitals) are always exposed to infectious diseases, they experience multiple fears and worries). Fear of COVID-19 is an expected emotional reaction that can be caused by fear of infection, fear of not providing adequate care for patients, fear of bringing the virus home, infecting family and friends, and fear of stigmatization.<sup>[14]</sup> Thornton *et al.*<sup>[15]</sup> also emphasized that nursing students experience negative emotions, confusion, fear, and concern about their health and family during their clinical courses during the epidemic period, and they suffer from the possibility of transmitting the disease to their elderly family members.<sup>[16]</sup> The reasons for this fear and concern seem to be factors such as easy transmission, increasing the number of daily cases, high mortality rate, and non-availability of personal protective equipment.<sup>[17]</sup> Also, the unavailability of institutional support and the lack of clear policies and methods can be a reason for this fear and concern.<sup>[18]</sup> It seems that it is possible to increase the self-confidence of healthcare providers by providing clear information, making available personal protective equipment and effective training, and providing counseling and treatment services to them and their families so, their fear and stress can be reduced.<sup>[19]</sup> However, fear as an unavoidable phenomenon has not yet been fully considered and the countries of the world must pay attention to the fears and psychological effects caused by it as much as they try to reduce the rate of transmission of COVID-19.<sup>[20]</sup> It seems that the fear of the unknown conditions of the COVID-19 disease was one of the most important reasons. In other words, when people are faced with a critical health situation that they have not experienced before, they fear obsessively.

The other category was increased attention to health protocols. Educators emphasized that with the outbreak of the epidemic, students paid more attention to health precautions. Albaqawi *et al.*<sup>[21]</sup> reported that during the COVID-19 pandemic, the majority of nursing students at

seven universities in Saudi Arabia performed most of the specified preventive behaviors. In another study in Libya, the observance of preventive behaviors among students was considered very encouraging.<sup>[22]</sup> Taghrir *et al.*<sup>[23]</sup> also reported that a high percentage of students observed preventive behaviors against COVID-19. In Turkey, the rate of compliance with preventive behaviors by students during the epidemic was reported to be 99%.<sup>[24]</sup> It can be said that the increased attention of students to follow preventive measures is influenced by their attitude and perceived vulnerability to the disease of COVID-19.<sup>[25]</sup> Because when people's health is threatened, their preventive health behaviors are promoted.<sup>[26]</sup> Because students are more susceptible to infection and disease transmission during clinical education in hospitals, it seems that improving their knowledge and awareness has played an important role in following preventive standards as much as possible.

Educational challenges were other findings. Educators considered the outbreak of the epidemic to increase the gap between theory and practice, which led to a decrease in students' clinical skills. They stated that due to the frequent closure of internships and the gap between theoretical and practical training, there has been a severe weakness in the clinical skills of students.

The research results showed that due to the pandemic, many students have not only lost a meaningful chance for clinical learning but also cannot recover their previously acquired skills.<sup>[27]</sup> This can cause problems in the process of acquiring competencies and the professional identity of students, which is formed only in the real environment. Hall *et al.*<sup>[28]</sup> also reported that institutional policies to prevent COVID-19 have resulted in the suspension of clinical activities for students, which affects their skills, whereas staff shortages have led to interns often being considered primary staff and tasked with providing care to patients. Take patients on the front line. Therefore, the existing educational challenge not only reduces the competence of the new workforce but also makes the provided care unsafe and dangerous. In confirmation of these findings, other studies stated that the efforts of planners to reduce the exposure of students to disease not only caused some units to be compressed and stopped or slowed down some clinical training opportunities.<sup>[29]</sup> Rather, it has added to the pressure caused by the previous challenges in clinical education (including the large number of students in the departments, the insufficient number of nursing professors, and the lack of space and educational facilities in hospitals), and it has caused students to not be able to upgrade their information as it should be and apply it in the clinical field. Therefore, it is necessary to adopt ways so that the skill level of students reaches an acceptable level in times of crisis. Paying attention to these challenges and prospects can lead nursing education to innovation so that they can form new approaches to implement contents and competencies through the evolution of social needs.<sup>[27]</sup>

Among the other educational challenges was the shortening of the internship period and the decrease in the quality of education. Faculty members of the University of St. John Fisher College in the United States stated that with the outbreak of Corona disease, professors and students were faced with uncertainty related to the completion of the educational program and clinical hours for educational purposes, and the time of their presence in different departments was unpredictable.<sup>[30]</sup> In a study by Menon *et al.*,<sup>[31]</sup> one of the challenges faced by medical students during the COVID-19 pandemic period was the reduction of their presence in the clinical environment. In another study, it was reported that during the epidemic period, most students did not complete their clinical course according to the established program, and most units were changed at the place of clinical training, or the student was forced to change the place of internship, which was not related to the original program and caused the discrepancy between goals and learning opportunities.<sup>[5]</sup> Therefore, it is suggested to create a content management system and an evaluation system for each educational field to identify any gaps in students' knowledge, skills, or performance and to ensure that sufficient clinical knowledge and skills have been acquired by the student and that the student can use the acquired skills.

The findings showed that the educators expressed concern and regret about the inappropriate interaction of supervisors and considered it an obstacle to the implementation of the education process. Studies show that students are indirectly affected by unresolved conflicts and disagreements with other health workers when attending wards, in addition to clinical education,<sup>[32]</sup> and the conflicts and misbehavior of staff with students disrupt the process of clinical education.<sup>[33]</sup> The research results showed that the students were worried about the feedback of the hospital managers, including their disapproval of attending the wards, because they believed that the students, being beginners, could not actively and effectively participate in the real care of patients, causing overcrowding and the failure of social distance.<sup>[34]</sup> The inappropriate interaction of department officials and their bad communication with students causes frustration and negative views about the profession and reduces their motivation to learn because professional interactions are an integral part of the clinical setting, which plays an essential role in increasing students' self-confidence and motivation to learn.<sup>[35]</sup> Therefore, it is necessary to justify the staff and department officials, based on their vital role in the formation of clinical qualifications of students as future nurses.

Based on the findings, the trainers were concerned about the non-compliance of the internship procedure with pandemic conditions. The findings showed that during the epidemic period, due to the increase in hospitalizations of patients with COVID-19, students' exposure to various clinical cases was minimized, which prevented the full realization of



internship goals. Research results showed that the outbreak of COVID-19 caused some clinical departments to be closed or assigned to COVID-19 patients, and the rotation of students for clinical training in various departments and exposure to different clinical cases has decreased.<sup>[36]</sup> Also, in research, the increase in the hospitalization of patients with COVID-19 and the decrease in the visits of other patients to hospitals due to the fear of contracting the coronavirus, and even the decrease in the number of accidents due to the decrease in travel, were cited as the reasons for the decrease in the variety of clinical cases and experiences of students in the hospital, and it reduced the quality of clinical education of students.<sup>[34]</sup> Therefore, it is suggested that by adopting innovative virtual measures, such as virtual rounds, students can participate in the clinical care of different patients from a distance, in this way, students can enter virtual departments and use the spaces provided in this platform to ask questions about cases also follow-up of inpatients prepared to benefit. In addition to preserving the education opportunity based on educational goals, this approach reduces the risk of exposure and transmission of hospital infections and saves on personal protective equipment.

Based on the findings, the trainers emphasized that despite the existing difficult conditions due to the outbreak of the epidemic, they did not change their educational procedure and their educational responsibility increased. In line with the results of the present study, the studies show that in the crisis caused by the epidemic, effective clinical education has become a challenge, and educators are obliged to keep students safe for a long time, they are required to pay attention to both the safety and health of students and maintain the quality of education at an appropriate level.<sup>[37]</sup> The research results showed that faculty members described the number of hours required for teaching and supporting students as two or three times compared to previous semesters.<sup>[30]</sup> In another study, it was stated that, in addition to the usual challenges of clinical education, nursing educators in the epidemic period should design an approach so that students can learn material that is necessary to use in a wide and diverse clinical environment. Nursing educators must spend a lot of time creating and curating educational content such as podcasts, videos, and educational discussions. Compiling meetings based on practical skills and simulating some skills such as online communication and interactive skills is quite difficult.<sup>[38]</sup> The research results showed that during the COVID-19 pandemic, educators should keep their knowledge up-to-date and adjust it according to emerging priorities and new technologies to respond to the educational needs of students, besides focusing on their own and students' health.<sup>[39]</sup> Therefore, educators should always strive to develop their educational programs to maximize learning, maintain effective care, and ensure competent graduates.

Regarding the shortage of personal protective equipment, in many countries of the world, healthcare workers, in

addition to the responsibility of dealing with COVID-19, faced a lack of protective equipment.<sup>[40]</sup> In fact, due to the increase in the use of health products and the lack of preparation of countries for such conditions, access to these materials created problems. In other studies, limited protective facilities have been identified as one of the realities governing the clinical environment during the epidemic period, and its deterrent role in the professional performance of students has been confirmed.<sup>[5]</sup> Another study also showed that the lack of some facilities and equipment was one of the challenges faced by students and teachers when visiting hospitals, which is more important in some units such as intensive care and infectious disease units.<sup>[34]</sup> In a study on the views and experiences of nursing students in Saudi Arabia, it was found that in some units there are a few masks, gloves, and other personal protective equipment, and nurses do not use them either.<sup>[41]</sup> Also, medical students report a sense of uncertainty and concern about personal safety and the continuation of learning at the bedside.<sup>[42]</sup> A study in Israel also showed that nursing students during the epidemic faced challenges such as fear of infection and lack of personal protective equipment at work.<sup>[37]</sup> Individualization and defocusing of clinical education require that institutions evaluate where education should continue, determine the clinical environments needed, and how they can safely engage students in care during the pandemic.<sup>[43]</sup> Focusing on students' health during the pandemic through regular communication, clinical reporting, and increased social support, appears to help promote their safety while also improving patient outcomes.

Regarding the adaptation to pandemic conditions, trying to stay stable in unpredictable conditions leads health workers to adapt to existing conditions, find solutions, and compromise.<sup>[44]</sup> The lack of adaptation to the existing conditions may add to their stress and create more consequences for their well-being.<sup>[45]</sup> Experiences related to previous epidemics and early outbreaks in China show that the psychological and emotional traumas caused by direct care of patients with COVID-19, social isolation caused by quarantine, and fear of transmitting the disease to others have had profound consequences on the mental health of health workers.<sup>[46]</sup> Therefore, psychological interventions are important to create basic support systems and facilitate the adaptation process for health workers. The results of a study showed that in the early stages of the crisis, nurses experienced negative emotions such as fatigue, discomfort, and helplessness caused by hard work, fear, anxiety, and worry. However, the use of individual adaptation styles, including psychological adaptation, altruistic methods, team support, and logical recognition, gradually causes them to adapt to the existing conditions.<sup>[47]</sup> So, strengthening adaptation and coping methods through training can shorten the adaptation time, and reduce negative consequences effectively.<sup>[48]</sup> Policymakers and nursing managers should consider the need to care for health workers in crisis and

provide the necessary training to adapt to sudden and severe events such as COVID-19. In China, these strategies include providing personal protective equipment, providing adequate time for self-care, providing separate housing for people who are concerned about the infection of family members, and providing 24-h telephone or virtual access to counselors.<sup>[49]</sup> Chinese experiences showed that in times of crisis, health workers should use psychological resources, especially when these resources are used flexibly and respectfully to the wishes of health workers.<sup>[46]</sup>

## Conclusion

The study findings showed that nursing clinical educators perceived great concerns about developing coronavirus disease and faced problems. Nursing educators can convert these challenges into opportunities to develop clinical training through proper planning, scientific management, and the application of new technologies. Moreover, policymakers should come up with material and spiritual support policies and programs to reduce the concerns and fears of nursing educators and students about the presence in clinical settings during the COVID-19 pandemic and help them better adapt to critical situations as soon as possible. Exploring and comparing the educational policies and laws during critical situations such as COVID-19 and in different academic centers is suggested for future study. In contrast, health policymakers must replace optimal decisions with foresight approaches and provide strategic options for preparing health systems in crises and using opportunities. Also, they should be prepared to actively deal with possible risks and challenges. A research limitation was the scarcity of studies on the COVID-19 pandemic and clinical educators' experiences during this period. Another limitation is the results cannot be easily generalized to other populations because conditions and backgrounds can greatly influence the results.

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## Conflicts of interest

Nothing to declare.

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