

The Impact of Internships on Nursing Students During the Epidemic and the Response of Clinical Preceptors

Yu-Chen Ku¹, Ying-Ya Chien¹, Meng-Chin Peng², Shin-Jean Lin³, Mei-Shu Huang², Wan-Ling Yang¹, I-Chun Chen², Yun-Chun Lin¹, Mei-Ling Lin⁴, Li-Hwa Lin^{5,6*} & Hsiao-Hui Chiu^{4,7*}

¹ Assistant Head Nurse, Department of Nursing, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

² Head Nurse, Department of Nursing, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

³ Nurse, Department of Nursing, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

⁴ Nurse Supervisor, Department of Nursing, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

⁵ Deputy Director, Department of Nursing, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

⁶ Assistant professor, College of Nursing, National Yang Ming Chiao Tung University, Taipei, Taiwan, ROC

⁷ Assistant professor, School of Nursing, National Defense Medical Center, Taipei, Taiwan, ROC

Correspondence: Li-Hwa Lin, No.201, Sec. 2, Shipai Rd., Beitou District, Taipei City, 11217, Taiwan, R.O.C.
E-mail: lhlin@vghtpe.gov.tw; Hsiao-hui Chiu, No.201, Sec. 2, Shipai Rd., Beitou District, Taipei City, 11217, Taiwan, R.O.C. Tel: 886-2-2871-2121-2398. E-mail: shchiu2@vghtpe.gov.tw

Received: April 1, 2024

Accepted: April 22, 2024

Online Published: April 30, 2024

doi:10.20849/ijns.v9i1.1417

URL: <https://doi.org/10.20849/ijns.v9i1.1417>

Abstract

Background: For nursing students' inadequate experience in clinical internships due to the COVID-19 epidemic, most schools responded with adjustment involving various modes of teaching. Nevertheless, the impact on nursing students has been an important issue.

Aim: From the perspective of clinical preceptors, to investigate the learning impact on nursing students during the epidemic and the response of clinical preceptors.

Subject and methods: A total of 9 clinical preceptors were interviewed following focus group methodology based on an outline for self-developed structured interview. The results of interviews were further analyzed using qualitative research.

Results: The follows were found from the perspective of clinical preceptors: The impacts on students during the epidemic include "lack of real-life communication", "lack of clinical scenario", "less mature skills", and "worry". The responses from clinical preceptors during the epidemic include: "comfort or care", "providing protective equipment", and "teaching students in accordance with their aptitude". The epidemic affects the capability of nursing students in clinical care, for which clinical preceptors expect the hospital end to "provide adequate manpower", "prolong the adaptation period for students" to assist nursing students in adapting to the workplace.

Conclusion: Nursing students' internships at hospitals were affected during the epidemic, which further leads to the inadequate capability in clinical care from nursing students. Therefore, providing individual guidance by workplaces is an essential measure.

Keywords: COVID-19, internships of nursing student, clinical preceptor, focus group

1. Introduction

In 2020, the extensively pandemic COVID-19 appeared worldwide. With the reduced patient load from hospitals, nursing students' internships at hospitals were affected, which further resulted in nursing students' inadequate experience in clinical internships. Even though the schools responded with online teaching, skills practice, and scenario exercise, the impact of lacking of internship experience in clinical patient care among new graduates from school of nursing is a notable issue. This study aims to investigate the impacts of internships on nursing students during the epidemic and the responses from the perspective of clinical preceptors, understanding students' learning dilemma and needs, and providing specific recommendations for clinical teaching.

The interface between school and clinical practice for nursing students

The “last mile career program for clinical practice” refers to the nursing student’s internship during their last semester at school, selecting internship hospital branch and department of a specific hospital which they intend to choose for future career. The one-to-one guidance approach applied by senior clinical preceptors aims to help nursing students early familiar with various care activities and operating procedures in such hospitals, gradually adapting to clinical works, reducing reality shock, and further enhancing the retention rate of newcomer nurses. Research indicated that compared to the students who did not participate in the last-mile program, the students participated in the career program were able to rapidly adapt to work, with necessary care knowledge and skills (Wu et al., 2012). Among nursing students in either 4-year college or 2-year college, progress in nursing capability was found in both areas, the biggest progress included “basic biological science” (the latter was 0.5 points higher than the former on progress, $p < 0.001$), “critical thinking ability” (the latter was 0.5 points higher than the former on progress, $p < 0.001$), followed by “general clinical nursing skills” (the latter was 0.38 points higher than the former, $p < 0.001$) (Ko & Chen, 2020), which showed that learning mode in the last mile program enhanced nursing capability. Sundler et al. (2014) found that nursing students expected to have a dedicated mentor from clinical end for more continuous observation about their learning. But mentors faced the dilemma of insufficient time and too much workload. Lamont (2015) investigated nursing students’ satisfaction with clinical internships and found that nursing students have higher internship satisfaction from “feeling of being accepted”, “attitude of ward staff”, “clinical support acquired”, “participation in patient nursing care”. “Reality shock” is defined as a dissonance experienced by nursing students when their expectations are not congruent with the actual nursing practice in workplace (Kodama & Fukahori, 2017), reality impacts made the newcomer nurses doubt about their career choice which even led to quitting (Labrague et al., 2020). Liu et al. found the top five stress sources of nursing students in order as: “unable to answer the question from physicians, teachers or patients”, “inadequate ability and experience to judge and manage the illness”, “worry about being not accepted or trusted by patients or their family”, “difficulty in role transformation from a nursing student”, “difference between clinical performance and self-expectation”, all these are issues necessary to be assisted for nursing students. In hospital policies, the established and provided standardized clinical care guidelines or skills for reference may reduce quitting intention after entering the workplace (Chang & Lin, 2021; Takase et al., 2017; Ke et al., 2014).

Impacts of nursing internships during epidemic

The COVID-19 occurred in 2019, the epidemic spread worldwide in February 2020 with increased patient severity and mortality rate, leading to reduced patient load in hospitals. Moreover, the Ministry of Education announced on February 10, 2020 that except school of medicine, 27%-75% of internship hours in various occupational categories could be replaced by virtual teaching courses. During May to July the same year, nursing students ceased to participate the internships in medical institutions. All the abovementioned facts influenced the opportunity for nursing students’ clinical learning. Tsai et al. (2021) suggested that even though extensive online courses were utilized by various schools during the epidemic, expecting to reduce the impacts on students’ learning, nevertheless, technology such as digital distance learning seems relatively difficult to replace clinical internships and clinical skills. Several scholars (Morin, 2020; Chen, 2020; Hsieh et al., 2020) demonstrated that under COVID-19, the increased courses utilizing simulation, telemedicine and virtual reality in nursing education minimize the impact on nursing students’ learning during the epidemic, but emphasized the necessity to enhance the contents related to the lessons of infectious disease such as topics including testing, isolation, quarantine, and epidemic prevention. Liu et al.(2020) suggested the needs to adjust the internship mode for fundamentals of nursing, including digital materials teaching, group discussion, case analysis, skill practice, simulated situation exercise for clinical case applied in the clinical skills center, both considering students’ safety and achieving goals for nursing internships.

2. Aim of the Study

The study aims to investigate:

- (1) Post-pandemic impacts on internship students from school of nursing
- (2) Post-pandemic responses from clinical preceptors

Operation definitions

The last-mile career program for clinical practice : refers to the nursing student’s internship during their last semester at school, selecting internship hospital branch and department of a specific hospital which they intend to choose for future career, applying one-to-one guidance approach by senior clinical preceptors.

3. Methods and Subject

3.1 Research Design

The study involves analyses of qualitative research, with interviews using focus group approach.

3.2 Setting

Data collection was a medical center hospital in northern Taiwan.

3.3 Participants

Among 9 schools with nursing students participating in the last-mile career program for clinical practice in a medical center, using recruiting posters, 1 clinical preceptor guiding nursing students from the sectors of nursing students' internship was solicited respectively.

(1) Inclusion subjects: Those who work as clinical preceptors in a medical center for the last-stage internship for school of nursing.

(2) Exclusion criteria: Those who are out of the abovementioned conditions, unable to communicate using Mandarin and Taiwanese, unwilling to participate.

3.4 Methods and Phase of Data Collection

3.4.1 Study Tools

Content in the self-developed interview outline for focus group:

- (1) Would you please talk about under COVID-19 epidemic, what were the influences on your teaching?
- (2) Would you please talk about under COVID-19 epidemic, what was your experience about deficiency in your teaching?
- (3) Would you please talk about under COVID-19 epidemic, what were the changes about modes of your teaching?
- (4) Would you please talk about under COVID-19 epidemic, besides the current approaches to respond, what would be the areas to be enhanced in the future?
- (5) Would you please talk about under COVID-19 epidemic, in your opinion, what kind of help can be provided by medical institutions for your teaching?
- (6) Would you please talk about under COVID-19 epidemic, from your point of view, what are your needs and response approaches to face such an impact?
- (7) Is there anything you want to talk about?

3.4.2 Administrative Approach

The research was conducted in August 2022, an associate professor with psychiatry background and prosperous interview experience served as the principal investigator for the focus group, a consensus discussion was first performed between the research team and principal investigator before interview. Study objectives and content of the plan were explained by the research team to the respondents who were included for interview after signing the informed consent. A focus group interview for 2 hours was conducted for each clinical preceptor in the space of an independent quiet conference room. The seats were arranged using a face-to-face approach, allowing all participants to interact and discuss for acquiring abundance of information.

3.4.3 Ethical Considerations

The study complies with research ethics and acquired Institutional Review Board's approval (IRB No.: 202205012ACF) before subject inclusion, with grant for the hospital-based research programs from Taipei Veterans General Hospital (No. V112EA010).

3.4.4 Statistics and Data Analysis

Recording and filming will be conducted during focus group interviews, data analysis and summary will be performed using content analysis after the interview completed. For each meeting, the audio file will be transcribed to a transcript by researcher, transforming to text file word for word. Based on the revised content of reply from respondents, the transcript data for meeting will be carefully reviewed by 2 researchers to determine categorial topics according to the discussion subjects, further developing categorial structures based on categorial topics. After completion of data classification, brief and concise sentences will be selected for encoding to perform content analysis, concluding the concepts from interview with respondents. The

determination for rigor of the study was conducted based on the four criteria including truth value, applicability, consistency, and neutrality proposed by Lincoln & Guba (1985).

4. Results

Those 9 clinical preceptors interviewed including 2 nurses, 2 assistant head nurses, and 5 head nurses were all teachers guiding nursing students in the last-mile learning. Reasons for nursing students ceased to participate in clinical internships in 2022 include “national policy in deciding cease of internships”, “confirmed infection of nursing students”, “ward closure or changed to a dedicated ward”. The impacts on students due to cease of internships during the epidemic include “lack of real-life communication”, “lack of clinical scenario”, “less mature skills”, and “worry”. The responses from clinical nursing preceptors during the epidemic include: “comfort or care”, “providing protective equipment”, and “teaching students in accordance with their aptitude”. It is expected from the hospital end to “provide adequate manpower”, “prolong the adaptation period” which are respectively described as follows:

4.1 The impacts on students during the epidemic include “lack of real-life communication”, “lack of clinical scenario”, “less mature skills”, and “worry”.

(1) Lack of real-life communication

Students ceased to participate in internships due to the influence of the epidemic, which resulted in being unable to communicate with real-life patients. Communication exercises were conducted using simulated clinical scenario by team members. Fixed scenario scripts were used in the exercises, nevertheless, clinical reality changes based on patients’ illness and different characteristics. Real-life communication is always changeable, which is not applicable to all different situations with fixed approach. With inadequate clinical experience, students would be afraid to face or anxious about how to communicate with patients, for example, clinical preceptors indicated:

“Students are familiar with computers/communications/consumer technology domain, they can react much quickly. But in facing a certain person, involving personal communication, relevant training seems not that adequate. (C5)”

“Upon contact with patients, the expression in their (the students’) eyes, seemed afraid, worrying and much anxious. That is because the internship classes they attended during last semester were online courses, lacking of actual practices. (C6)”

“I feel that students are afraid of contact with patients. (C7)”

“Only with actual contact with patients and real actions, the students may know how to communicate and if they will be afraid of. (C1)”

(2) Lack of clinical scenario

Patients’ clinical issues are dynamic, even for an identical diagnosis, different clinical manifestations may exhibit depending on progression of illness. Work exercise or simulated scenario exercise are related to learning of fixed modes, when students found the difference between clinical practice and the scenario they exercised, it would be difficult for them to master the actual clinical scenario. Students may behave as afraid and not proactive. For example, clinical preceptors indicated:

“Exercises using even the same approach as doing homework, students still cannot make up for the experience from those clinical practice. (C9)”

“After the half-year observation during the epidemic, I found that students are not familiar with clinical scenario, feeling strange and afraid of. (C7)”

“The students have been learning for a long time online or using other measures, that is why I feel when they enter clinical scenario, they probably lack of actual learning experience, relatively less proactive. (C6)”

(3) Less mature skills

When students exercise their skills in the class, standardized settings, equipment and process are applied. Nevertheless, the skills are actually used for patients, and patients’ physiological structure, mental status are changeable. Common clinical skills such as turn-over, displacement, nasogastric tube nursing, and urinary catheter, etc. shall be repeatedly performed to achieve proficiency. For example, clinical preceptors indicated:

“Some students did not participate in the internship for internal medicine and surgery, exhibiting some gap in skills, unfamiliar. (C7)”

“With absence of internships, one year later, students may become unfamiliar with some skills learned from school previously. (C5)”

“Let them learn again, let them exercise again about how to perform IV, how to do something like drainage tube dressing change, this is the only way to be able to apply clinical practice on patients. (C6)”

(4) Worry

Clinical preceptors perceived that students' practice experience would be affected due to being unable to participate in internships at hospital during the epidemic, but if the students attend the internships at hospital during the epidemic, on the contrary, they may worry about whether they will be infected during caring patients, whether the hospital will provide equipment for epidemic prevention. That is why they expected to have comprehensive protection. For example, the clinical preceptors indicated:

“During the epidemic, students are prone to experience emotional fluctuation, they may worry much about their own health. (C1)”

“The students may ask why there only are surgical masks available, aren't N95 required to be provided by the hospital? (C3)”

“For students, after cease of internships for a period of time, they may especially pay attention to personal protection when they resume the internships now. (C2)”

“The students may worry all the time, so we need to let them understand that we will assist them in providing protection during internships. (C4)”

4.2 The responses from clinical preceptors during the epidemic include: “comfort or care”, “providing protective equipment”, and “teaching students in accordance with their aptitude”.

(1) Comfort or care

For clinical internships during the epidemic, students may worry about issues such as being infected, unfamiliar with skills, as well as clinical adaptation. Besides practice guidance, clinical preceptors also need to provide comfort and care to deal with students' fear and anxiety, helping students to respond to the reality change during internships. For example, clinical preceptors indicated:

“Students' learning has been affected during the epidemic, then I will comfort them not to be afraid of the skills, keeping on practice. (C7)”

“I feel mental establishment is important for them, when I guide them, I always emphasize that they have to face the real-life environment. (C9)”

“From the very beginning, students and teacher are in the interdependent life community, the approach is to provide care, helping students in learning and growth, always upholding such a learning atmosphere. (C4)”

“I encourage the teacher and students to join the LINE group to form a team, caring about students, as well as observing students. (C3)”

“I know that students may be afraid of caring patients due to inadequate clinical experience, so I always proactively contact the students, taking the initiative, then I found out the difficulty students faced during our conversation. (C5)”

“Spend a bit more time to guide them on not only area of skills, but also mental aspect, it's about caring, besides practical issues, almost every clinical preceptor would invite them for meals together, which is the time for spiritual communication. (C7)”

(2) Providing protective equipment

In internships during the epidemic, students expressed to expect for adequate protective equipment, such as wearing N95 mask and protective clothing to prevent themselves from being infected. Even if some schools may proactively provide nursing students with protective equipment for clinical internships, clinical preceptors shall still pay attention to the adequate protective capability acquired by nursing students, including vaccination. For example, clinical preceptors indicated:

“For purpose to protect the students, we (the hospital) also delivered N95 or double-layer surgical masks and protective face shield on the first outbreak of the epidemic. (C3)”

“Based on the hospital's unified regulation, students attending internships at the hospital are required to receive vaccination, so there will be no problem for students to attend internships at the hospital. (C4)”

“For students attend internships in our sector, I always proactively check if they are wearing the mask properly and if wearing protective clothing in a correct way. (C7)”

(3) Teaching students in accordance with their aptitude

Due to the inconsistent learning courses during cease of internships, students may have inconsistent capability, data from this study found that: The duration for affected physical internships during the epidemic was 4 days to 8 weeks, the affected departments included internal medicine and surgery, the last mile, obstetrics and gynecology, pediatrics, operating room, psychiatry, and ICU, etc. Clinical preceptors are to provide guidance in accordance with students' ability, the sector will provide students with relevant materials such as manuals or routines for their reference, or exercises for unfamiliar skills. For example, clinical preceptors indicated:

“Individual student may experience different situation during the epidemic, I would first understand their learning experience for further planning. (C1)”

“I feel that information regarding regulation manuals for both software and hardware shall be simultaneously provided by the hospital, because the regulations are very important. The students should know about the hospital's regulations and rules for the wards. The process for daily routines shall be kept in line with SOP to provide them with an opportunity for survival here. Otherwise, they may often make mistakes with occasional carelessness. Moreover, ask them to keep in mind, do not worry about anything happened, just asking. (C3)”

“According to their personality traits, plan a suitable approach to guide them, then you will find out some techniques to deal with related problems. They probably did not know how to arrange the priority in doing things, they failed in solving the problems by themselves. Everyone has different timing for enlightenment, once they have good attitudes, I would like to spend time to teach them. (C6)”

4.3 For clinical preceptors, in guiding nursing students under the impacts of the epidemic, besides adjustment of mentality and modes of instruction, the assistance expected from the hospital end included “providing adequate manpower” and “prolonged adaptation period”

(1) Due to inadequate experience in clinical care and less mature skills resulted from lacking of internships, it takes much more time to guide their learning. Clinical preceptors care not only students, they also care patients. Even though the student-teacher ratio has been stipulated in the Accreditation of Teaching Hospital, but with limited clinical manpower establishment. It is still expected that shift arrangement will be performed under the condition of adequate manpower, allowing much more time to concentrate on teaching the students. For example, clinical preceptors indicated:

“In fact, under reasonable workload, we all are willing to teach newcomers. Therefore, we probably need a bit more adequate manpower. (C7)”

“Clinical routines have been quite busy, moreover, we will also have to guide the students, so it would be better to have a bit more manpower. (C2)”

“The teachers all are willing to teach but we also have to take clinical work into account, sometimes may feel exhausting. (C3)”

(2) Prolonged adaptation period

A medical center accepted the graduated nursing students, those newcomer nurses will receive the newcomer onboard training course for a period of 40 hours within a week. After entering the ward, a clinical preceptor will be assigned by the sector to guide their learning to complete the Learning Manual for Newcomer Nurses as scheduled. Three months after onboard, they will start to work independently under guidance, starting to take the jobs in night shift and graveyard shift. As for the situation of students' inadequate clinical experience during the epidemic, clinical preceptors suggested that prolonged learning period for newcomer nurses should be necessary after they started the clinical practice, so that they have more time to get familiar with clinical scenario and the sector's routine operation. Therefore, they can have more time and opportunities to get familiar with skills operation, which helps nursing students to adapt to the job in the workplace after they entered the workplace. For example, clinical preceptors indicated:

“It is appropriate to postpone the timing for such students to work independently after clinical work began, allowing more time for their learning and adaptation. (C3)”

“I feel that the prolonged learning period will allow them to have more time to adapt, reducing the stress in facing new environment. (C7)”

“It would be necessary to make an adjustment for flexibility in various shifts. For junior nurses who react slowly,

prolong their course in day shifts. As for senior nurses, remind them to have some patience. (C6)”

5. Discussion

5.1 Impacts on Nursing Students During the Epidemic

Reasons for cease of internships during the epidemic include: educational policy decided to suspend the internships, ward closure or changed to a dedicated ward. Moreover, confirmed infection of nursing students was another reason, all these had impacts on the opportunity for nursing students' clinical learning. Liu et al. (2010) investigated students' learning effectiveness in the last-mile course and found that the sources of stress for nursing students' learning include "inadequate experience in illness judgement and managing ability", and "communication for clinical scenario", these are issues to be assisted during nursing students' clinical internships. This study has consistent findings, with impacts during the epidemic, student nurse interns can exercise only through some discussions or simulated scenario, which leads to inadequate experience resulted from the impacts of "lack of real-life scenario" and "lack of communication with patients". "Being unfamiliar with skills" was also a consequence of lack of internships experience during the epidemic. Liu et al. (2010) found that experienced skills was a consequence of practice makes perfect in nursing clinical works. By means of the internships, nursing students have the highest progress points ($t=7.72, 7.46, p < .001$) in "properly operating medical instruments in the sector" and "proper completion in performing examination, treatment, preoperative preparation and related nursing activities". Hsieh et al. (2020) suggested that during the epidemic, the fear of being infected by infectious disease and worry about personal health increase students' stress, leading to physiological symptoms. Teachers' care about students may help students to reduce stress, learning peacefully. This study has identical findings, clinical preceptors perceived students' stress in the internships during the epidemic which required to provide "comfort and care", they will provide care through measures such as proactive enquiring and establishment of groups.

5.2 Responses of Clinical Teaching During Post-epidemic Period

Hayter et al. (2020) suggested that during COVID-19's epidemic period, it is required to pay attention to adequate protective equipment acquired by students, with sufficient safety assessment for clinical settings. Chen (2020) indicated that "disaster nursing" is the necessary professional competence for the 21st century nursing staff, nursing personnel should have professional capability in emergency rescue. Therefore, core concepts regarding infection control, disaster and disaster recovery should be included in the courses. The study also has identical findings, clinical preceptors perceived that nursing students may worry about the adequacy of epidemic preventive equipment and related knowledge, clinical end shall provide sufficient epidemic preventive equipment, teaching them that epidemic preventive knowledge is an important measure to respond to the impacts. Lamont et al. (2015) investigated nursing students' satisfaction to clinical practice and found that with supportive attitudes from ward staff lead to higher satisfaction to clinical learning by nursing students. Ko et al. (2020) suggested that increased retention of newcomer nurses may help to build up a friendly workplace. Measures to enhance learning adaptation can include customized learning portfolio, dedicated personnel to assist newcomer nurses in their adaptation to the job and life. This study found that for students during the epidemic, clinical preceptors have much more measures available for consideration, care and teaching students in accordance with their aptitude, which help nursing students in establishing the adaptability after entering the workplace. Yeh et al. (2021) investigated the willingness of teaching hospitals in guiding newcomers and found that 89% agreed with the importance of clinical preceptors, 50% had the willingness to guide newcomers, only 29.4% indicated that they have time to guide newcomers, with inadequate manpower as the influencing factor. Sundler et al. (2014) investigated the effects of mode applying different clinical preceptors to nursing students' learning. The results found that compared to the students in the ward arranged to be guided by different teachers, the student guided by the same teacher had better monitoring relationship and teaching atmosphere, being more aggressive. Because they received continuous feedback, mutual respect and trust relationship. Moreover, the results found that clinical preceptors indicated the challenges about insufficient time and much more workload. This study has consistent findings. Under the condition that clinical preceptors have to take care of patients, with students' inadequate experience, if the manpower for shift arrangement could be increased, there will be much more time and energy to guide nursing students for their learning. Swift et al. (2020) used measures such as mentorship and prolonged period of internships and found important effects on the retention of newcomers. With regard to the response to the future modes of teaching, Liu et al. (2010) suggested that for the inadequate nursing skills, the schools may provide equipment for virtual reality (VR) scenario and classrooms for critical care skills scenario to enhance the proficiency of skills. Yeh (2021) suggested that in the future, it is appropriate to develop simulated practice for virtual patients, as well as multiple-station objective structured clinical examination (OSCE), which may help nursing students in the preparation for clinical settings, enhancing their confidence in

communication. Hsieh et al. (2020) indicated that the schools should adjust the modes of teaching as a response during the epidemic, including OSCE, simulated scenario teaching or simulation teaching. These can simulate as much as possible the potential situations encountered in clinical internships, through videos in the classroom and actual operation, to train the students about the ability for critical thinking and problem solving, complementing students' dilemma in lacking actual experience.

6. Limitation of the Study

The study performed qualitative interview on nursing students attending the last-mile program to understand the present impacts during the internships period. In the future, the effectiveness of responsive strategies from clinical preceptors and adaptation of nursing students in the workplace should be continuously followed up.

7. Conclusion

In cease of clinical internship during the epidemic, the schools utilized measures such as simulated scenario or simulation teaching, discussion or homework to substitute for clinical internships but students still faced impacts including being unfamiliar with clinical scenario, lack of communication experience, and being unfamiliar with skills. Clinical preceptors expected the hospital end may understand nursing students' inadequate learning experience, allowing students a bit more time in learning and adaptation to clinical operating modes. Moreover, it is also expected to guide their learning through the approach of teaching the students in accordance with their aptitude under the adequate manpower. With the epidemic influence worldwide, the traditional modes of teaching are forced to be changed, continuously applying technology, developing modes of distance and online teaching will be the trend for teaching in the future. Clinical preceptors shall, based on nursing students' individual needs, provide guidance, helping nursing students to successfully connect with entering their workplace.

8. Recommendation

Specific recommendations of the study to clinical teaching:

- (1) Provide students with safety protection: The hospital shall ensure that adequate protective equipment is available for students during their internships. In addition to equipment, knowledge related to epidemic prevention for infection control shall also be taught, protecting them from the risk of infection.
- (2) Enhance the handover about students' background: Clinical staff shall understand and hand over students' learning background, assist them to complement the inadequate experience, enabling them to more quickly adapt to clinical work environment.
- (3) Prolonged adaptation period: Under the condition of adequate manpower resource, the hospital may consider to prolong the adaptation period for newcomer nursing students, allowing them to have more opportunities to learn in the real-life scenario, and providing them with more support and guidance.
- (4) Professional mentorship program: The hospital shall establish professional mentorship program, assigning nursing professionals with prosperous clinical experience as mentors for nursing students. These mentors can provide practice guidance, academic support and recommendations for career development, assisting nursing students to successfully transit to clinical work.
- (5) Internship assessment and feedback: With the impacts on nursing students' learning, the hospital may adjust the criteria for internships assessment, providing nursing students with specific and constructive feedback, which is beneficial for nursing students to understand their strengths and areas to be improved during clinical internships.

References

- Chang, C. M., & Lin, H. F. (2021). A Study on the Turnover Behavior Factors and Workload of Nursing Staff. *Chang Gung Nursing*, 32(1), 18-31. [https://doi.org/10.6386/CGN.202103_32\(1\).0002](https://doi.org/10.6386/CGN.202103_32(1).0002)
- Chen, S. L. (2020). Reviewing and reflecting on nursing during the COVID-19 pandemic. *The Journal of Nursing*, 67(6), 4-5. [https://doi.org/10.6224/JN.202012_67\(6\).01](https://doi.org/10.6224/JN.202012_67(6).01)
- Hayter, M., & Jackson, D. (2020). Pre-registration undergraduate nurses and the COVID-19 pandemic: Students or workers?. *J Clin Nurs*, 29, 3115-16. <https://doi.org/10.1111/jocn.15317>
- Hsieh, H. Y., Hsu, Y. Y., Ko, N. Y., & Yen, M. (2020). Nursing education strategies during the COVID-19 epidemic. *The Journal of Nursing*, 67(3), 96-101. [https://doi.org/10.6224/JN.202006_67\(3\).13](https://doi.org/10.6224/JN.202006_67(3).13)
- Ke, Y. T., Wang, H. H., & Chou, F. H. (2014). Reflecting on Intention to Stay of New Nurses from Postmodernism. *The Kaohsiung Journal of Nursing*, 31(1), 30-38. <https://doi.org/10.6692/KJN-2014-31-1-4>

- Ko, L. Y., & Chen, S. Y. (2020). Level of Reflective Thinking and Nursing Competence of Nursing Students: A Preliminary Study Using the “Last-Mile” Practicum. *Cheng Ching Medical Journal*, 16(4), 60-72.15.
- Kodama, Y., & Fukahori, H. (2017). Nurse managers' attributes to promote change in their wards: a qualitative study. *Nursing Open*, 4(4), 209-217. <https://doi.org/10.1002/nop2.87>
- Labrague, L. J., De, L., Santos, J. A. A., & Falguera, C. C. (2020). Predictors of nurses' turnover intention at one and five years' time. *International nursing review*, 67(2), 191-198. <https://doi.org/10.1111/inr.12581>
- Lamont, S., Brunero, S., & Woods, K. P. (2015). Satisfaction with clinical placement--The perspective of nursing students from multiple universities. *Collegian*, 22(1), 125-133. <https://doi.org/10.1016/j.colegn.2013.12.005>
- Liu, H. Y., Chang, C. C., Yu, K. L., Ho, Y. C., Tzeng, Y. J., & Wu, S. M. (2010). The Implementation and Learning Effects of Last-Mile Curriculum among Nursing Students of a Four-Year Technology College. *Journal of Research in Education Sciences*, 55(4), 131-155.
- Liu, Y. M., Chen, M. C., Chung, F.-F., Huang, H.-P., Chao, L. F., Chen, M. Y., ... Fan, J. Y. (2020). Challenges to the nursing practicum during the COVID-19 pandemic. *The Journal of Nursing*, 67(6), 25-31. [https://doi.org/10.6224/JN.202012_67\(6\).05](https://doi.org/10.6224/JN.202012_67(6).05)
- Morin, K. H. (2020). Nursing education after COVID-19: Same or different?. *J Clin Nurs*, 29, 3117-19. <https://doi.org/10.1111/jocn.15322>
- Sundler, A. J., Björk, M., Bisholt, B., Ohlsson, U., Engström, A. K., & Gustafsson, M. (2014). Student nurses' experiences of the clinical learning environment in relation to the organization of supervision: a questionnaire survey. *Nurse education today*, 34(4), 661-6. <https://doi.org/10.1016/j.nedt.2013.06.023>
- Swift, A., Banks, L., & Baleswaran, A. (2020). COVID-19 and student nurses: A view from England. *J Clin Nurs*, 29, 3111-14. <https://doi.org/10.1111/jocn.15298>
- Takase, M., Yamamoto, M., Sato, Y., Imai, T., & Kawamoto, M. (2017). Effects of Nurses' Perceptions of Actual and Demanded Competence on Turnover Intentions. *Western journal of nursing research*, 39(10), 1330-47. <https://doi.org/10.1177/0193945916670893>
- Tsai, T. C. (2021). The development and application of virtual patient in clinical training: The new horizon for nursing education. *The Journal of Nursing*, 68(5), 24-29. [https://doi.org/10.6224/JN.202110_68\(5\).05](https://doi.org/10.6224/JN.202110_68(5).05)
- Wu, H. M., Liu, P. F., Ho, H. H., Chen, P. L., Chao, H. L., & Chen, H. L. (2012). Reducing Occupational Burnout and Enhancing Job Performance in New Nurses: The Efficacy of “Last Mile” Programs. *The Journal of Nursing*, 59(4), 30-42. <https://doi.org/10.6224/JN.59.4.30>
- Yeh, H. F. (2021). Virtual reality skills training trends in nurse practitioner education. *The Journal of Nursing*, 68(5), 13-17. [https://doi.org/10.6224/JN.202110_68\(5\).03](https://doi.org/10.6224/JN.202110_68(5).03)

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).