

Nursing students' experiences of learning practical gerontological nursing skills through online media during COVID-19 pandemic: a qualitative study

Jaturada Jariyaratnakul Niemtest, Watchara Tabootwong and Pornchai Jullamate

Abstract

Purpose – This study aims to explain the experiences of nursing students while they practiced gerontological nursing through online media during the COVID-19 pandemic.

Design/methodology/approach – Purposive sampling was used to select 20 third-year nursing students. Semi-structured face-to-face interviews were conducted with participants. The collected data were analyzed using the thematic analysis method to identify recurring themes and patterns.

Findings – Four themes emerged from the interviews, including improved practical skills, the impact of online learning, receiving support from close individuals and the need for support. Participants provided specific examples of how they improved their skills through online learning and described the importance of receiving support from those close to them during this challenging time.

Originality/value – Online media is essential for teaching nursing students during the COVID-19 pandemic. This is the main reason for teaching nursing students during times of restricted access to clinical settings. This research provides insights into the challenges and benefits associated with using digital platforms to teach gerontological practice for nursing students.

Keywords COVID-19, Gerontological nursing, Nursing students, Online learning, Qualitative research

Paper type Research paper

Jaturada Jariyaratnakul Niemtest, Watchara Tabootwong and Pornchai Jullamate are all based at the Department of Gerontological Nursing, Faculty of Nursing, Burapha University, Chonburi, Thailand.

Introduction

The COVID-19 pandemic is a situation that all countries are confronting since 2020. Around 70% of the global student population is affected by this pandemic (Krishna, 2022). The lockdown is important to prevent the COVID-19 pandemic. However, the lockdown affects educational institutions to resort to online teaching methods for students (Selvaraj *et al.*, 2021). Approximately 83% of the countries used online platforms to ensure the continuity of learning. In the USA, around 63% of students use online learning tools daily (Krishna, 2022). Online learning refers to the use of the internet to enhance the interaction between teachers and students. At the same time, technologies were used for teaching and delivering information to students such as television, smartphone and laptop (Singh and Thurman, 2019). Meanwhile, Google Meet, Zoom, WhatsApp, YouTube, Microsoft teams and WebEx are online media to be used for teaching (Selvaraj *et al.*, 2021).

In nursing educational institutes, online media are used to continue teaching and to promote learning for nursing students. Similarly, the Faculty of Nursing, Burapha University, Thailand, obtain the effects of the COVID-19 pandemic. We have to change the process of teaching by applying technologies or using online media such as Google Meet, Zoom, Microsoft

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teams and online platforms. Nursing students used weSAFE@Home platform to assess, assist and record signs and symptoms of patients with COVID-19 together with communicating and giving information to patients at home through this platform. Likewise, many countries used online platforms to ensure the continuity of learning (Krishna, 2022).

Online media helps lecturers in teaching and its benefit is to continue the learning process and improve students' knowledge and practical skills. Kim *et al.* (2021) showed that nursing students were satisfied with their online learning during the COVID-19 pandemic. However, students must deal with internet problems, lack of time, lack of attention and other technology-based issues. These are various problems during the transition from onsite learning to online learning (Tahir *et al.*, 2022). Apart from technology problems and internet, physical and mental health is one of effects of online learning, such as back pain, eye strain, stress, anxiety, loneliness and depression (Idris *et al.*, 2021).

Department of Gerontological Nursing, Faculty of Nursing, Burapha University, Thailand, is responsible for teaching nursing students in clinical settings; in particular, in communities and hospitals in caring for older people. As the result of COVID-19 situation, the course of practical gerontological nursing has been changed from onsite teaching into online teaching. That is, nursing students were educated using case studies through online media along with weSAFE@Home that is a virtual clinic platform to assist older people with COVID-19 at home. Moreover, Microsoft Teams, Zoom and Line Application used to be channels for teaching and interacting with nursing students.

With teaching and learning online during the COVID-19 pandemic, nursing students have received the effects of online learning either technological problems or health problems (Idris *et al.*, 2021; Selvaraj *et al.*, 2021; Tahir *et al.*, 2022). They have to study to archive learning outcomes of course. Previous studies were examined based on contexts of each educational institute. Department of Gerontological Nursing, Faculty of Nursing, Burapha University, is a context as we have different methods of teaching for nursing students. Therefore, this qualitative study was conducted to understand and explain how feelings and experiences of nursing students in online learning during the COVID-19 pandemic. The results of this study can be used to develop the methods of teaching, to support the learning environment and to deal with problems and feelings of nursing students.

Methods

Study design

This qualitative research was conducted to explain the experiences of nursing students while they practiced gerontological nursing through online media during the COVID-19 pandemic. The research ethics committee of Burapha university granted authorization for the study (HS001-2565) before it was started on April 22, 2022. Researcher announcement for the participants by e-mail. All study participants were informed that their participation was totally voluntary, and they were free to quit the study at any moment. Participants who were willing to participate in the study were provided with written consent before collecting data.

Participants

Twenty participants were third-year nursing students who practiced gerontological nursing through online media due to the disruption of the COVID-19 pandemic. That is, they learned to assist and educate older people using online media. For example, Microsoft Teams Meeting, Zoom Video Conferencing and Line Application were used to help nursing students connect and communicate with lecturers as well as give health education to older people at home. Moreover, weSAFE@Home was a virtual clinic platform that was used to assist patients with COVID-19 at home. Nursing students used this platform to assess,

assist and record signs and symptoms of older people with COVID-19, together with communicating and giving information to older people through this platform. Purposive sampling was used to select all participants between May and August 2022. The inclusion criteria for participants were:

- third-year nursing students in gerontological nursing practice through online media during the COVID-19 pandemic;
- over 18 years of age;
- able to communicate in the Thai language;
- willing to participate in the study.

Nursing students who had not completed their practical training through online media were excluded. There were no subsequent withdrawals by selected participants.

Data collection

The participants were interviewed via videoconference after providing their consent to participate in the study. A demographic data form was used to collect information on gender, age, grade, time spent practicing gerontological nursing through online media, place of online learning, materials used for online learning and connection signal. A face-to-face semi-structured interview guide was constructed from a literature review, and it was used to interview and collect data along with a video recorder. The research team (consisting of two researchers, JN and WT) generated the interview guide and had it reviewed by three experts with knowledge and experience in conducting qualitative research in the field of gerontological nursing. In addition, the interview guide was pilot-tested with two participants who had prior online experience practicing gerontological nursing during the COVID-19 pandemic. The interview questions were as follows:

- Could you please tell me; how you have experienced learning practical gerontological nursing through online media?
- What learning objectives did this course help you achieve?
- What are some of your most memorable experiences?
- What are the course's challenges?
- What kind of assistance did you require, and who provides it?

All participants were interviewed via videoconference, and their conversations were recorded using voice recording for approximately 45 to 60 minutes. After each interview, field notes were taken. The data became saturated after the 20th interview. To ensure confidentiality, participants' names were replaced with numbers (e.g. P1 and P2), and any identifying information was removed from the transcriptions. All transcriptions and video recordings were password-protected.

Data analysis

An inductive content analysis approach was used, which involved immersing in the data, open coding and creating themes (Elo and Kyngäs, 2008). The researcher began data analysis by reading each transcription several times. During open coding, each participant was assigned a code (a few words or a brief sentence) to capture the main ideas of their narrative. All of the substance in the stories was coded after several repetitions of reading and coding. The study team then convened to compare the codes and group them into themes that represented related aspects of the participants' online practical learning experiences.

Trustworthiness of the finding. To ensure the trustworthiness of the findings, the study's credibility, dependability, conformability and transferability were assessed (Holloway and Galvin, 2017). The research team had experience in teaching gerontological nursing and conducting qualitative research. The data were collected from nursing students who had experienced gerontological nursing through online learning. To enhance dependability, the transcripts were originally written in Thai to reduce any loss of meaning during data analysis. In addition, a native Thai translator translated the data from Thai to English, and the translation was checked for accuracy by the research team before publication. To increase the confirmability of the study, the first author analyzed the data from nursing students' experiences individually, and the data were later analyzed as themes and categories that were reviewed and summarized by all authors. Furthermore, the study used the Consolidated Criteria for Reporting Qualitative Studies (COREQ), which includes criteria for research team, reflexivity, study design, data analysis and reporting, to ensure the transferability of the qualitative research (Tong et al., 2007).

Findings

Almost all participants in the study were female (95%), with an average age of 21. In terms of their grades, 2 participants received grade A, 4 received grade B+, 13 received grade B and 1 received grade C+. Following their practical training in gerontological nursing, all participants were given grades by nursing instructors, with 15 receiving grade A, 3 receiving grade B+ and 2 receiving grade B. The participants learned and were trained in providing care for older people using various electronic devices, including tablets, mobile phones and laptops. They connected and communicated with older people and nursing instructors using Wi-Fi, LAN and mobile phone signals. They learned from home and dormitories. The demographic data of the participants is presented in Table 1.

The data analysis revealed four themes: improved practical skills, understanding the impact of online practical training, receiving support from close individuals and the need for support. Table 2 presents the nursing students' experiences of learning practical gerontological nursing skills through online media during the COVID-19 pandemic.

Improved practical skill

Nursing students described that their practical gerontological nursing skills improved, including health assessment, data analysis, the use of technology and taking responsibility. In terms of health assessment, they learned to assess older persons' health through video calls using the Line application. Although it was not a physical examination, they also interviewed older people about their symptoms and observed physical changes in older people. Moreover, learning by assessing the signs and symptoms of older people with Covid-19 in weSAFE@Home, a clinic platform, could improve their interviewing and assessment skills. Participants explained this as follows:

I connected to an older person through Line application. VDO call was used to talk and interview an older person about health, symptoms, and basic information in daily life (P7).

I started to talk and assess what her impairments are. Cognitive impairment, the activity of daily life, and medication used were interviewed. Meanwhile, underlying diseases were assessed by interviewing as well (P8).

With home isolation, I assessed signs and symptoms of patients with Covid-19 such as diarrhea and other symptoms of Covid-19 in weSAFE@Home. Skills of communication and cooperation were improved because the lecturer gave an opportunity in contacting with patients and working with a team (P2).

In addition, nursing students were able to analyze data on older persons' health problems to generate nursing diagnoses and design a nursing care plan for older people. They were

Table 1 Characteristics of participants (*N* = 20)

<i>Demographic data</i>	<i>Frequency</i>	<i>%</i>
<i>Age</i>	Ranged from 20–22 years (Mean = 21; SD = 0.43)	
<i>Sex</i>		
Female	19	95
Male	1	5
<i>Grade</i>		
<i>Theory</i>		
A	2	10
B+	4	20
B	13	65
C+	1	5
<i>Practice</i>		
A	15	75
B+	3	15
B	2	10
<i>Online material</i>		
Tablet	16	80
Mobile phone	8	10
Laptop	2	10
<i>Internet sources</i>		
Wi-Fi	16	80
LAN	2	10
Hotspot	10	50
<i>The setting of online learning</i>		
Home	14	70
Dormitory	6	30

Source: Table by authors

Table 2 Nursing students' experiences of learning practical gerontological nursing skills through online media during the COVID-19 pandemic

<i>Themes</i>	<i>Sub-theme</i>
Improved practical skill	<ul style="list-style-type: none"> • Learned to assess older persons' health through video calls on the Line application and the weSAFE@Home platform • Generated nursing diagnoses and designed nursing care plans for older people • Sought health information and research articles • Produced instructional media to educate older people on health promotion • Communicated and worked with a multidisciplinary team
Getting the impact of online learning	<ul style="list-style-type: none"> • The positive impacts of online practical training were described as happiness, opportunity and learning to design instructional media • The negative impact of online practical training was that they perceived health problems and a lack of concentration in learning
Receiving support from close persons	<ul style="list-style-type: none"> • Their friends shared more information about knowledge • Parents or family members always provided moral support • Nursing instructors shared their experiences, suggested and gave feedback regarding nursing care for older people
Needs to be supported	<ul style="list-style-type: none"> • Flexibility and moral support • Equipment for studying

Source: Table by authors

provided with case studies from their nursing instructors, and they collected data by reading and reviewing the given case study, as well as analyzing the data to identify the older person's health problems. Furthermore, they learned to distinguish and manage the health problems of older people.

Data analysis about older problems was performed after lecture gave me a case study. Problems of incontinence, falling, vision, and covid-19 were analyzed and summarized to provide care for older people (P13)

I can analyze the patient data about general data, history illness, treatment, and medication use. At the same time, laboratory results were analyzed why patient had these signs and symptoms, how to use medication, and what is their pathological problems (P8)

Nursing students improved their ability to use technology for seeking health information and research articles from reliable websites. They also created instructional media to educate older people on health promotion topics such as exercise, sleep, medication use and incontinence. In addition, they used various technologies such as Line, Messenger and Zoom to connect and communicate with older people and their families.

I use internet in searching articles. Searching articles is difficult because it is new experiences of searching information. (P3)

I searched (for) information from internet as information is from reliable website. After that, data was collected and summarized. Next step summarized data were sent to teacher before designing infographic. It is about exercise in elderly and sleep promotion. I used internet to search data. (P11)

I think that Microsoft Team is fine for presentation. But older people cannot use it. I used Line Application to contact older people. Line is convenient for older people but can't play this video. (P16)

Another finding was that nursing students improved their sense of responsibility as they were required to play the role of a nurse and communicate and collaborate with a multidisciplinary team including nursing instructors, older people, friends and registered nurses while completing their practical training using the weSAFE@Home system.

I play a responsibility to inform my lecturer and nurses who were a charge nurse about symptoms of dyspnea. Older people may have dyspnea after exercising. I would inform nurse to follow and take care of her. (P11)

It is my duty and responsibility in doing assignments together with a group. We have duties as who would do this job. About exercise, I would do video and sent back friends to check information. (P17)

Getting the impact of online learning

During their online practical learning experience, nursing students reported both positive and negative impacts. The positive impacts included feelings of happiness, opportunities for learning and the ability to design instructional media. Specifically, they expressed happiness when older adults were interested in participating in health education activities that were designed for them through online applications.

I am happy while I communicate and give more health information with elderly patients. Elderly patients were willing to talk. I feel good. (P7)

I feel impressed that older people cooperated and attended to listen about my educating. I feel happy and it is obstacles in educating online. (P11)

Secondly, they described that it was a new experience and a provided opportunity for practical training on the weSAFE@Home system. This clinic platform helped them learn how to educate and assist older people with Covid-19 at home isolation.

I have more experiences in assessing elderly health through online system. For example, I never provide care and help elderly patients in home isolation before. I would ask them about fever, coughing, sneezing, diarrhea, and dyspnea. (P16)

It is a good opportunity because I am a part of providing care for elderly patients with Covid-19. I knew their symptoms and followed up their symptoms. If elderly patients had problems, I would inform nursing instructors. (P9)

Lastly, to archive learning outcomes, they attempted to learn how to design instruction media (e.g. single-page posters, video clips, etc.) for giving health education to older people at home by online teaching.

I learned to design instruction media about exercise for older people. I and friends tried to search information and make a video (P5)

The negative impact of online practical training included perceived health problems and difficulty in concentration during learning. Nursing students reported experiencing eye pain due to prolonged screen time on laptops and back pain from sitting for extended periods. In addition, they experienced psychological stress from the challenges of working with friends in a COVID-19 situation and a lack of adequate support for practical training, resulting in imperfect homework and additional stress.

I have a headache and eyes. It likes I would throw up. I had to take medicine to reduce pain. While sitting for long time in studying, I felt that my back was strain and have a back pain. (P4)

I felt stressed, and I could not have food. It likes I felt tired because I had to sit in front of computer and gaze screen on a computer. Moreover, I also have a headache, back pain, and myopia as well. (P15)

The weak internet signal caused them to be late in joining virtual classes, while family members disrupted their learning through video conferencing, creating an inappropriate environment that led to a lack of concentration and moodiness.

I felt moody. While teaching was conducted and teacher tough me, internet has a problem as a weak signal on the internet. I come back again, and it is at the end of teaching hour. (P2)

While learning at home, my home has a child. He made noise and it disturbed me learning. It is loud sound. If teacher call and ask me questions, I can not turn on microphone immediately because of loud sound. (P4)

Receiving support from close persons

During online learning, nursing students were supported by their friends, families and nursing instructors to achieve their learning outcomes. Their friends provided additional information about diseases and gerontological nursing, which helped them expand their knowledge. They also shared what they learned from their nursing instructors with their team, which allowed them to reinforce their understanding of the material.

I was supported by our group. My friend helped me with sending documents and files that the teacher taught. At the same time, we would attend to listen and remember what the teacher taught us. After that, we can talk and share in the group. (P4)

My friend helped me in giving knowledge and information that I did not know about symptoms of diseases. Friends in group would search information and share the ideas together. (P15)

Family members provided moral support when the nursing students felt stressed in practical training. For example, they prepared food to serve the students after studying.

During period of studying online, I do not have time to do anything. Time to eat and rest is few. Thus, my mother would prepare foods and water for me. (P6)

Our friends supported me, and my family always supported me as well. My twins bought some foods and help me in general supports as she can do during time of online learning. (P9)

Support by nursing instructors, nursing students perceived support from nursing instructors, including sharing experiences of providing care for older people, suggesting how to care for older people with their problems, and giving feedback on practical training to improve their skills.

Teachers would help us, and they would suggest and give comments. I compel myself because I was afraid information for providing care for older people would be wrong. However, I talked to teachers, and it made me feel happy. (P1)

I feel impressed. At last week, teachers gave more techniques in taking care of older people and how to talk to older people with psychological problems. I got more experiences, and I am impressed about this issue. (P3)

Needs to be supported. Nursing students required support from nursing instructors in terms of flexibility, moral encouragement and access to equipment. They needed flexibility in submitting homework or assignments, as they faced challenges in managing their time while juggling multiple responsibilities. Moral support from instructors was also crucial, especially during periods of fatigue and stress. Moreover, the availability of equipment such as laptops was essential for their practical training and communication with instructors and older adults. To address this issue, the faculty of nursing could provide laptops for borrowing, as not all students had access to quality equipment due to financial constraints or other limitations. In addition, some students could not use mobile phones or computers without cameras for extended periods, which further underscored the need for adequate equipment support.

I needed equipment to help me in working. I had only mobile phone, but I do not have laptop to search information at that time. Some persons do not have laptop like me. I needed to be supported about laptop to use for working. (P6)

I would like to receive flexibility about time for working and moral support from teachers. Some friends and I felt tired because we studied online all day. I needed emotional support as moral support or teachers often ask how about your study. Teachers should extend the time in submitting homework as well. (P8)

Discussion

Twenty third-year nursing students shared their experiences of learning practical gerontological nursing skills through online media during the COVID-19 pandemic outbreak. The students reported that their skills improved in health assessment, data analysis, the use of technology and taking responsibility. This improvement may be due to the innovative teaching methods used in online learning, which had a positive impact on the students' knowledge and skills to provide care for people (Meschial *et al.*, 2021). Online teaching using case studies, which were designed by the gerontological nursing course, can enhance student learning by highlighting connections between academic topics and real-world societal issues (Bonney, 2015). Bixler *et al.* (2021) noted that online learning during the pandemic could help students achieve foundational knowledge, promote active learning and technology use, synthesize data, as well as fulfill their roles and responsibilities.

In terms of the impacts of online learning on nursing students, they experienced both positive and negative effects. On the positive side, students reported feeling happy and appreciated the opportunity to learn new skills, such as designing instructional media.

However, there were also negative impacts, as students reported health problems and difficulties concentrating during online learning.

While online learning can provide students with practical and flexible ways to learn, it can also be a challenging adjustment for some students (Yusnilita, 2020). Azmi *et al.* (2022) found that university students studying online experienced stress and anxiety related to the COVID-19 pandemic and examinations. Selvaraj *et al.* (2021) also reported that students did not have enough time to rest between classes and that direct interaction with teachers was insufficient.

Despite these challenges, online learning has been shown to have a positive impact on students' academic performance, motivation and engagement (Mandasari, 2020). During the COVID-19 pandemic, nursing students were supported by friends, families and nursing instructors to achieve learning outcomes in online learning. Support refers to the process of being nurtured to promote nursing students' clinical abilities (Joolae *et al.*, 2016). Ghasemi *et al.* (2020) suggest that nursing instructors should support nursing students by teaching strategies, balancing students' clinical activities with clinical assignments, appreciating individual differences, creating an atmosphere that enables students to learn and supervising their activities. Meanwhile, they used technology to connect with friends to share information and provide moral support. Connecting with friends is one potential coping mechanism that can reduce feelings of isolation and emotional distress during the COVID-19 pandemic (Juvonen *et al.*, 2021).

Although nursing students received support from friends, families and nursing instructors, they also needed additional support from their instructors for certain things, such as flexibility in submitting homework, moral support and access to laptops for online learning. The online learning environment can be insufficient, and it may negatively impact students' readiness for nursing education (Kim *et al.*, 2021). Gabriel and Rhonda (2020) emphasized the convenience and flexibility of online learning environments, which provide students with the opportunity to plan their study time. If instructors do not pay attention to the online learning environment, students may face difficulties in preparing for and learning online courses. Therefore, the learning environment is crucial in motivating and improving students' learning outcomes.

Conclusion

Online learning in the context of COVID-19 can help nursing students improve their practical gerontological nursing skills, such as health assessment, data analysis, the use of technology and responsibility. However, the effects of online learning can be both positive and negative, including happiness, opportunities to learn to design instructional media and physical and psychological health problems. To overcome the obstacles of online learning and achieve the learning outcomes of their courses, nursing students require essential support from their friends, family members and nursing instructors. However, nursing instructors should also facilitate online learning environments, including flexible submission times for homework and assignments, access to necessary equipment and moral support.

Strengths and limitations of the study

A qualitative study can help us understand deeply how nursing students felt and perceived learning through online media during the COVID-19 pandemic. However, the participants interviewed were limited to one faculty of nursing, which may limit the generalizability of the findings to other similar groups or settings. Additionally, as this study was conducted by two Thai researchers, there may be limitations in translating findings from Thai into English for publication, which may affect the dependability and transferability of the findings. To enhance the trustworthiness of the findings, multiple investigator triangulation and review triangulation could be conducted.

Relevance to clinical practice

Based on the findings about nursing students' experiences of learning practical gerontological nursing skills through online media during the COVID-19 pandemic, it is evident that online learning can improve nursing students' knowledge and skills. However, online learning also has implications for nursing education, including the promotion of online learning environments and the use of technology to provide healthcare services. As a result, stakeholders such as nursing instructors, nursing teams and hospitals may be impacted by the outcomes of online learning. Therefore, it is important for them to prepare and develop guidelines or projects to improve the practical skills of nursing students who will be registered nurses in healthcare service organizations.

References

- Azmi, F.M., Khan, H.N. and Azmi, A.M. (2022), "The impact of virtual learning on students' educational behavior and pervasiveness of depression among university students due to the COVID-19 pandemic", *Globalization and Health*, Vol. 18 No. 1, pp. 1-9, doi: [10.1186/s12992-022-00863-z](https://doi.org/10.1186/s12992-022-00863-z).
- Bixler, A., Eslinger, M., Kleinschmit, A.J., Gaudier-Diaz, M.M., Sankar, U., Marsteller, P., Goller, C.C. and Robertson, S. (2021), "Three steps to adapt case studies for synchronous and asynchronous online learning", *Journal of Microbiology & Biology Education*, Vol. 22 No. 1, pp. 1-4, doi: [10.1128/jmbe.v22i1.2337](https://doi.org/10.1128/jmbe.v22i1.2337).
- Bonney, K.M. (2015), "Case study teaching method improves student performance and perceptions of learning gains", *Journal of Microbiology & Biology Education*, Vol. 16 No. 1, pp. 21-28, doi: [10.1128/jmbe.v16i1.846](https://doi.org/10.1128/jmbe.v16i1.846).
- Elo, S. and Kyngäs, H. (2008), "The qualitative content analysis process", *Journal of Advanced Nursing*, Vol. 62 No. 1, pp. 107-115, doi: [10.1111/j.1365-2648.2007.04569.x](https://doi.org/10.1111/j.1365-2648.2007.04569.x).
- Gabriel, J. and Rhonda, D. (2020), "Students' transition from face to face learning to online learning at higher education: a case study in Trinidad and Tobago", *Educational Research and Reviews*, Vol. 15 No. 8, pp. 487-494, doi: [10.5897/ERR2020.4005](https://doi.org/10.5897/ERR2020.4005).
- Ghasemi, M.R., Moonaghi, H.K. and Heydari, A. (2020), "Strategies for sustaining and enhancing nursing students' engagement in academic and clinical settings: a narrative review", *Korean Journal of Medical Education*, Vol. 32 No. 2, pp. 103-117, doi: [10.3946/kjme.2020.159](https://doi.org/10.3946/kjme.2020.159).
- Holloway, I. and Galvin, K. (2017), *Qualitative Research in Nursing and Healthcare*, 4th ed., Wiley, Hoboken, NJ, available at: <https://books.google.fi/books?id=CYnIDAAQBAJ>
- Idris, F., Zulkipli, IN., Abdul-Mumin, K.H., Ahmad, S.R., Mitha, S., Rahman, H.A., Rajabalaya, R., David, S.R. and Naing, L. (2021), "Academic experiences, physical and mental health impact of COVID-19 pandemic on students and lecturers in health care education", *BMC Medical Education*, Vol. 21 No. 1, pp. 1-13, doi: [10.1186/s12909-021-02968-2](https://doi.org/10.1186/s12909-021-02968-2).
- Joolae, S., Farahani, M.A., Jafarian Amiri, S.R. and Varaei, S. (2016), "Support in clinical settings as perceived by nursing students in Iran: a qualitative study", *Nursing and Midwifery Studies*, pp. 1-7, doi: [10.17795/nmsjournal31292](https://doi.org/10.17795/nmsjournal31292).
- Juvonen, J., Schacter, H.L. and Lessard, L.M. (2021), "Connecting electronically with friends to cope with isolation during COVID-19 pandemic", *Journal of Social and Personal Relationships*, Vol. 38 No. 6, pp. 1782-1799, doi: [10.1177/0265407521998459](https://doi.org/10.1177/0265407521998459).
- Kim, S.Y., Kim, S.J. and Lee, S.H. (2021), "Effects of online learning on nursing students in South Korea during COVID-19", *International Journal of Environmental Research and Public Health*, Vol. 18 No. 16, pp. 1-12, doi: [10.3390/ijerph18168506](https://doi.org/10.3390/ijerph18168506).
- Krishna, R. (2022), "Online learning statistics in 2022", available at: www.guru99.com/online-learning-statistics.html
- Mandasari, B. (2020), "The impact of online learning toward students' academic performance on business correspondence course", *EDUTECH: Journal of Education and Technology*, Vol. 4 No. 1, pp. 98-110, doi: [10.29062/edu.v4i1.74](https://doi.org/10.29062/edu.v4i1.74).
- Meschial, W.C., Ciccheto, J.R.M., Lima, M.F., Menegaz, J.D.C., Echevarría-Guanilo, M.E. and Oliveira, M.L.F. (2021), "Active teaching strategies improve nursing knowledge and skills to assist burn victims", *Revista Brasileira de Enfermagem*, Vol. 74 No. suppl 5, pp. 1-7, doi: [10.1590/0034-7167-2020-0235](https://doi.org/10.1590/0034-7167-2020-0235).

Selvaraj, A., Radhin, V., Ka, N., Benson, N. and Mathew, A.J. (2021), "Effect of pandemic based online education on teaching and learning system", *International Journal of Educational Development*, Vol. 85 No. 102444, pp. 1-11, doi: [10.1016/j.ijedudev.2021.102444](https://doi.org/10.1016/j.ijedudev.2021.102444).

Singh, V. and Thurman, A. (2019), "How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018)", *American Journal of Distance Education*, Vol. 33 No. 4, pp. 289-306, doi: [10.1080/08923647.2019.1663082](https://doi.org/10.1080/08923647.2019.1663082).

Tahir, H., Muhammad Bilal, K., Shehzad, B., Asif, U., Pdma, R. and Ricahrd, E. (2022), "Effect of pandemic based online education on teaching and learning systems PalArch's", *Journal of Archaeology of Egypt/Egyptology*, Vol. 19 No. 2, pp. 686-719, available at: <https://archives.palarch.nl/index.php/jae/article/view/11093>

Tong, A., Sainsbury, P. and Craig, J. (2007), "Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups", *International Journal for Quality in Health Care*, Vol. 19 No. 6, pp. 349-357, doi: [10.1093/intqhc/mzm042](https://doi.org/10.1093/intqhc/mzm042).

Yusnilita, N. (2020), "The impact of online learning: student's views", *ETERNAL (English Teaching Journal)*, Vol. 11 No. 1, pp. 57-61, doi: [10.26877/eternal.v11i1.6069](https://doi.org/10.26877/eternal.v11i1.6069).

Further reading

Julien, J. and Dookwah, R. (2020), "Students' transition from face to face learning to online learning at higher education: a case study in Trinidad and Tobago", *Educational Research and Reviews*, Vol. 15 No. 8, pp. 487-494, doi: [10.5897/ERR2020.4005](https://doi.org/10.5897/ERR2020.4005).

Corresponding author

Jaturada Jariyaratnakul Niemtest can be contacted at: jjaturada.buu@gmail.com

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