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Review Article

The Effect of COVID-19 Pandemic on Nursing Education in Oman

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Abstract: Background: As nursing colleges rapidly closed due to the global coronavirus disease-2019 (COVID-19) pandemic, students and faculty faced unprecedented challenges. COVID-19 pandemic forced the cancellation of all campus curricular and extra-curricular activities. The traditional face-to-face nursing education method was quickly shifted online. It had to be administered via various virtual platforms as distance education. The shift to distance education forced the nursing faculty to reconsider the appropriate method to deliver their course contents to their students. The impact of COVID-19 has prompted rapid changes in nursing education at a pace not previously experienced, which impacted theory classrooms, laboratory demonstrations, and clinical practicum. Implementation of distance education was to safeguard the safety of all involved in the nursing colleges and ensure accomplishing the learning outcomes and professional competencies without any suspension. However, the challenges faced by nursing faculty and students were unprecedented and had to be noted and considered. Nevertheless, it was an opportunity for everyone to learn from such an unanticipated shift in education. Objective: The emphasis of this review article is searching the internet for studies geared towards the effect of COVID-19 on nursing education and the nursing students' perceptions on shifting from traditional face-to-face education to distance education. Methodology: Google Scholar, Medline, and PubMed searches were used for articles selection from 2019 to 2021 that discussed COVID-19 and its effect on nursing education. Conclusion: COVID-19 impacted everyone on earth. It impacted nursing education; however, alternative education methods were used to compensate for the delays and keep the academic calendar running. Students have mixed feelings about their perceptions of the sudden shift of traditional education to distance education.

Keywords: Traditional education, distance education, advantages and disadvantages of traditional and distance education, COVID-19, nursing students' perceptions on distance education.

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Introduction

The global coronavirus disease-2019 (COVID-19) pandemic is a respiratory infection with symptoms ranging from a mild common cold-like illness to severe viral pneumonia, leading to potentially fatal acute respiratory distress syndrome (Ayed & Zabn, 2021). In December 2019, the first case was detected in Wuhan, China. Since then, the virus has spread to almost every country on earth. The World Health Organization (WHO) acknowledged at its meeting on January 30th, 2020, that COVID-19 was a global public health emergency, and it then classified it as a pandemic on March 11th, 2020 (WHO).

With an increase in cases and fatalities, the disease spread fast to other countries throughout the world. It was estimated globally that 244,142,267 confirmed cases and 4,959,711 deaths as of October

24th, 2021 (worldmeters.info). In the United States, COVID-19 was confirmed on January 21st, 2020 (Klemm *et al.*, 2020). While in the Middle East, particularly in Oman, reported the first two COVID-19 positive cases on February 24th, 2020 (Alshekaili *et al.*, 2020). The initial report suggested that COVID-19 was spread in Oman by residents who had traveled overseas (Alshekaili *et al.*). Oman had 304,116 confirmed cases and 4,107 fatalities as of October 24th, 2021 (worldmeters.info).

COVID-19 had brought day-to-day issues to people worldwide, including some that society had never seen before. Individuals were required to be aware of the disease spread, proper quarantining, and maintaining social distancing. COVID-19 severely altered global operations in a matter of weeks to months. Every individual and establishment in Oman

and around the world was affected in some way. In Oman, the Oman Supreme Committee on COVID-19 announced a suspension of classes for schools and higher education institutions as part of pandemic precautions to reduce virus transmission, similar to what other countries had done (Syahrin & Salih, 2020). Higher education institutions, including the nursing colleges in Oman, started planning and implementing distance education, rescheduling ongoing and final examinations, and providing regular online services to their students until the COVID-19 crisis is resolved. As a result of the Oman Supreme Committee's directives, most of Oman's higher education institutions quickly transitioned from traditional face-to-face classrooms to online learning platforms (Svahrin & Salih). While most higher education institutions chose online distance education, a few colleges and universities used blended learning modalities to keep students on campus for practical courses and field projects (Cifuentes et al., 2021).

The primary concern for higher education institutions was student safety. Nursing students and teachers faced challenges as nursing colleges in Oman were forced to close due to COVID-19. All nursing colleges' events, both curricular and extra-curricular, such as teaching theory, laboratory demonstrations, and clinical practicum, were canceled due to the pandemic. Furthermore, because coursework was quickly moved online, teachers were required to reconsider material distribution for their students (Parker, Hansen, & Bernadowski).

Because of the unprecedented emergence of COVID-19, nursing colleges have attempted to figure out how to rearrange the method of education using a distance education platform. This disruption in traditional face-to-face nursing education resulted in the rise of distance education and e-learning. The transition from traditional face-to-face education to distance education resulted in varying perceptions of nursing students that necessitated attention and exploration. Also, there was not enough information about the effects of COVID-19 on nursing education. Hence, for this review article, some of the effects of the COVID-19 pandemic on nursing education will be highlighted. Also, nursing student's perceptions of the shift from traditional to distance education will be discussed.

Nursing Education

Nursing is a skill-based profession that relies comprehensively on the competency of nurses at the hospitals or in primary health care settings to achieve the desired health outcomes for individual patients, families, and the community (Sveinsdóttir *et al.*, 2021). Nursing education colleges strive to provide students with specific knowledge and skills that will enable them to practice competently and help them improve their learning ability to become lifelong learners (Takase and Yoshida, 2021).

Thus, nurse educators must reflect on their curricula and teaching methods and foster a practical learning approach in their students. On the other hand, nursing students must acquire knowledge and skills and think critically to solve patients' health-related problems using evidence-based knowledge and practice (Takase and Yoshida, 2021).

Nursing Education: Shift from Traditional to Distance

The traditional teaching and learning style was that of face-to-face teaching approaches. Traditional teaching offers course content to students in a face-to-face interaction between students and teachers. Traditional education is known to be teacher-centered and requires students to be passive learners. In traditional education, the teacher typically controls the pace of teaching in which he/she teaches and comments, while the students, the receivers of information, listen, take notes, and ask questions (Abd El-Moneam *et al.*, 2021).

However, the COVID-19 pandemic forced nursing colleges to move their traditional educational method to distance education (Liguori & Winkler, 2020). Distance education shifts the education method from traditional teacher-centered education to student-centered learning, where students are responsible for learning (Abd El-Moneam *et al.*).

The reasons for this shift in nursing education were students being unable to attend face-to-face theory classes, laboratory demonstrations, and clinical practicum. Consequently, students needed to change their learning styles (Sveinsdóttir *et al.*, 2021). Also, there were concerns that students and faculty get exposed to COVID-19 in clinical practicum (Valdez, 2021).

Distance education was initiated particularly for theory-based courses, while for practicum, case scenarios were created, and practicum in laboratories was increased. Some nursing colleges used a blended method of education. It was essential to have a laboratory, and practical skills continued, particularly for senior year students. It was done by having fewer students in each group for precautionary measures (Valdez).

DISTANCE EDUCATION

Distance education has transformed how students learn and the way they interact with their teachers. During the COVID-19 epidemic, students were vulnerable in various ways, such as ambiguous academic journeys. Using distance education technologies such as Zoom, Microsoft Teams, Google Classroom to keep this academic journey moving, on the other hand, has shown to be the best alternative (Al-Juboori & Al-Thaqafiy, 2021).

The course material was offered online in distance education which shifted from teacher-centered to student-centered that required active learning. According to Konrad and colleagues, active learning procedures encourage critical thinking and are more valuable than passive learning, which frequently does not promote higher-level cognitive skills (2021). They also stated that active learning increases the awareness of the students while learning and at the same time promotes autonomous decision-making in clinical settings. In student-centered or active learning, the students individually would analyze the course contents and seek clarification from their teacher. On the other hand, the teacher, not the students, would listen or read the texted messages and respond to questions accordingly (Paul & Jefferson, 2019).

Distance education can be delivered either synchronously or asynchronously (Khalil, et al., 2020). In the synchronous method, distance education occurs concurrently, and there is live interaction between students and teachers, such as in video conferencing and live chats. In contrast, the asynchronous method is not concurrent and uses electronic media to facilitate distance education via emails, discussion boards, or text messaging (Abd El-Moneam et al.).

As the shift took place and distance education was implemented in all nursing colleges worldwide, various quantitative and qualitative studies started to be published. These studies presented students' opinions and perceptions about distance education. In general, distance education seemed to be an excellent alternative to traditional face-to-face education due to the current circumstances around the globe. There was an exceptional satisfaction rate with distance education. Nevertheless, the shift from traditional to distance education has its constraints, particularly after the immediate shift where nobody was prepared for such a sudden shift in nursing education.

Constraints of distance education

The transition from traditional to distance education, on the other hand, had its constraints. Among the constraints to distance education during the COVID-19 pandemic was the rapid transition from traditional face-to-face education to distance education, as well as a lack of enough preparation and training on using online classes from both parties, students, and teachers (Farooq et al., 2020). Another barrier was that in order to develop a successful online classroom, information technology infrastructure maintenance was needed, which somehow some colleges did not have (Faroog et al.,). Also, the challenge of maintaining academic integrity (Mukhtar et al.,) showed a lack of control over students' formative and summative evaluations such as exams, quizzes, and assignments (Bdair, 2021).

Also, in distance education, the quality of instruction varied and was not homogenous across all nursing colleges, and the teaching contents were delivered through many unfamiliar platforms. Only a few nursing colleges had their health management systems and a specialized IT team to assist teachers. Some nursing colleges used video conferencing systems such as Moodle, Zoom, and Microsoft Teams to conduct online lectures. Other nursing colleges asked teachers to record their lectures, which were then shared on a WhatsApp group, emailed, or uploaded to a platform such as Edmodo. However, in certain circumstances, faculty members could not record lectures from home and physically visited their nursing colleges to do so. Also, some nursing colleges did not have the technical equipment and aides necessary for recording lectures for the students.

Prior to the epidemic, most faculty members had no formal training for distance education and were unaware of using online classrooms with students. Also, faculty had difficulty marking attendance, mainly that some students might mark proxy attendance. They also lack formal training for online assessment tasks such as administering and scoring continuous and final assessments online. They were unfamiliar with the strategies for including assignments and tests in online teaching platforms. Furthermore, there were challenges with internet connectivity and low bandwidth when streaming lectures, uploading and downloading PowerPoint slides or video lecture files. Some students in rural areas often complain about difficulties with live streaming lectures due to unstable internet connectivity.

Student's Perceptions Regarding Distance Education during COVID-19

Since COVID-19 was a new pandemic, few studies were conducted on the effect of the pandemic worldwide. However, when it came to nursing education precisely, the number of studies was even fewer. Currently, Oman has no published study on the effect of COVID-19 on nursing education or even the perceptions of students' distance education. Nevertheless, there were few studies from other Arab countries such as Saudi Arabia and Egypt, however. Studies ranged from quantitative and qualitative nature that showed mixed perceptions towards distance education. For instance, Ansari and colleagues (2021) used an online computer-based cross-sectional survey to assess 281 students' online teaching and learning perspectives during COVID-19 in Saudi Arabia. According to the findings, 176 (62%) of students were satisfied with online learning.

Also, Khan and colleagues in India conducted a quantitative descriptive study to investigate students' perceptions and readiness for online learning (2021). The researchers used Google Docs to collect responses from 184 university students randomly given an online questionnaire. The findings revealed students' positive

attitudes toward e-learning. Also, according to the results, 56.5% of respondents were confident in using an e-learning platform. Another study was undertaken in the Philippines with 111 nursing students using a descriptive cross-sectional methodology to investigate nursing students' views regarding e-learning. According to the findings, most nursing students (74.8%) possessed intermediate computer skills and a relatively solid internet connection (66.7%). They had largely negative (40.5%) and indecisive (30.6%) attitudes regarding e-learning (Oducado & Soriano, 2021).

On the other hand, Aldridge and McQuagge (2021) conducted a phenomenological study with eight undergraduate nursing students in the United States. The study was to learn about students' lived experiences acquiring psychomotor skills during the COVID-19 pandemic. There were three main themes presented, and each theme with sub-themes. The first theme was "Finding My Own Way," which described how students learned during the pandemic. At the same time, the second theme was "Learning the Skills," which discussed the willingness of the teachers for their students to learn as one sub-theme and not enough time to practice the skills as a second sub-theme. The third theme was "Stress of the Pandemic," which described the stress of quarantine, isolation, and online learning.

Another qualitative study was conducted by Bdair (2021) using a descriptive-phenomenology technique to investigate ten nursing students' and ten faculty members' perspectives on online learning in Saudi Arabia during the COVID-19 era. The result showed that nursing students and faculty were moderately satisfied with online learning, although they still preferred traditional learning. The researchers developed three main themes from their investigations and interviews with the participants. One of the study's three main themes was "advantages," which included three sub-themes: a flexible learning environment, academic achievement, and student-centered learning. The second theme was "challenges," which included sub-themes of feelings of inadequacy, academic integrity, the learning environment, and family difficulties. The third theme was "recommendations," which included sub-themes of training, education, assessment, and quality monitoring.

These are some of the studies conducted on distance nursing education and nursing students' perceptions of distance education. These studies showed good feedback on the delivery of online education at the time of the COVID-19 pandemic. Nursing students were satisfied with some reservations also with the distance education.

RECOMMENDATIONS

The COVID-19 pandemic appeared to have some challenges to nursing education. These challenges can be viewed as an opportunity to improve our

educational system and facilitate learning more smoothly, especially since it is uncertain how long the pandemic will last.

The impact of the COVID-19 pandemic on nursing education has demonstrated that adequate risk management measures such as disaster preparedness and preplanned strategies are necessary. Crises such as the COVID-19 pandemic and natural disasters will have less impact on nursing education if adequately planned and managed. As a result, nursing education policymakers should implement policies and protocols to help respond to, cope with, and recover quickly from unprecedented future events.

It is worth noting the significance of conducting distance education training sessions for faculty and students and assigning an information technology technician to follow up on technical issues. Nursing faculty have to ensure that learning activities are used to successfully meet the learning outcomes of nursing practices by care plans, interactive case studies, web-based learning activities, written assignments, and online class discussions (Konrad *et al.*, 2020).

Cengiz and colleagues recommended that in order for students to continue learning effectively, nursing colleges need to provide formal training on best practices pertinent to online education (2021). They suggested doing this by meeting in small group's online and continuing student counseling to provide academic support. Konrad and colleagues also suggested that faculty and staff consider offering students virtual office hours and working together to communicate and help address students' academic concerns arising from the disruption (2020). Also, to help prevent students from accessing the course content during evaluation, the exams need to be controlled by setting a time limit, comprehensive, diverse questions with one-way navigation, and implementing different exam forms. Also, to detect cheating and plagiarism in assignments, nursing colleges need to install a plagiarism software program.

CONCLUSION

COVID-19 pandemic has brought significant challenges and uncertainties for nursing education. Nursing faculty can help turn those challenges into opportunities by using their expertise to prepare nursing students to face global health challenges. Nursing students gave positive feedback and were generally satisfied with distance education as an alternative method during the COVID-19 pandemic. During the COVID-19 pandemic, shifting from traditional face-to-face education to distance education was necessary to keep students, teachers, and administration safe by preventing the infection from spreading and fulfilling the academic requirements.

As an alternative method of education during the pandemic, distance education worked well. Both traditional and distance education face challenges and must be constantly improved. Due to the COVID-19 crisis, distance education was implemented, but it was a lesson for all stakeholders. Nursing colleges need to take steps to prepare faculty, staff, and students for distance education and institute a well-established infrastructure. There is also a need for a risk management team in each college.

Research in nursing education in Oman is required, such as technology acceptance and infrastructure readiness. Also, studies could be conducted to investigate the effects of distance education on nursing students during the COVID-19 pandemic. Finally, new and different methods for maintaining a healthy nursing education during COVID-19 and potential future pandemics could be developed.

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