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Practice and Attitude of Nursing Students towards Electronic Learning during COVID-19 Pandemic

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ABSTRACT

Background: *E-learning is playing a crucial role during the COVID-19 pandemic, it aims to help instructors, schools, and universities to facilitate student learning during periods of universities and schools' closure. Besides, E-learning can help ensure continuous learning during this Coronavirus pandemic. The study aimed to assess the practice and attitude of nursing students towards electronic learning during the COVID-19 pandemic at Hafr Al Batin City. A cross-sectional study was performed from 17 July until 1 September 2020. Respondent: 140 nursing students at College of Applied Medical Science, Hafr Al Batin University from all study levels. An online questionnaire was used by the researchers to obtain the necessary data. This tool comprises three parts. Part 1: socio-demographic questionnaire such as sex, age, level of education, and student experience on electronic learning. Part 2: the practice of nursing students towards electronic learning during COVID-19 pandemic. Part 3: attitude of nursing students towards electronic learning during COVID-19 pandemic.* ***Result:*** *Slightly less than three-quarters of students (71.4 %) had prepared for the lecture by opening the internet and the blackboard at least ten minutes before. Also, 65.7% of the students had participated in educational activities during the lecture with the course professor. 54.3% of the*

students disagreed that E-learning is useful for practical courses. 47.1% of students strongly agreed that online class saved time and 27.1% of them strongly agreed that they were bothered by the lecture on the internet because of the internet problem. ***Conclusion:*** *This study revealed that nursing students had prepared themselves well to practice E-learning during COVID 19 pandemic. The respondents in our study agree that E-learning is effective in increasing knowledge and is highly accepted but they disagreed that E-learning is useful for practical courses.*

Keywords: Practice, Attitude, Nursing students, Electronic learning, COVID-19 pandemic

INTRODUCTION

In late December 2019 in China, Coronavirus Disease (COVID-19) start, then become a pandemic. This has obligated many countries to apply social distancing. Worldwide data regarding people affected by COVID-19 are 131,459 million confirmed cases, and 2,860,842 million deaths [1,2]. The latest incidence of COVID-19 cases in Saudi Arabia is 392 thousand and around 7 thousand deaths [3].

COVID-19 pandemic is affecting the majority of countries all over the world. Social interaction and education have changed extensively by this pandemic. The physical distancing is aimed to decrease COVID-19 transmission which could spread in places as colleges rapidly. Closures of colleges and universities are an example of the physical distancing measures used to decrease the transmission of this pandemic [4,5].

Programs of undergraduate nursing are differing from other universities' college's programs as it is often predicated on serial delivery of theory and clinical practice blocks. Disruption to nursing programs will likely provoke a wide array of uncertainties for students generating emotional distress. This will undoubtedly contribute to more obvious sources of distress such as fears of contracting COVID and moral distress consequent on encountering death at scale. Pervasive uncertainties about course progression and completion will undoubtedly underpin all student experience in the months if not years ahead [6,7].

However, embracing E-learning and freeing students from the geographical and time constraints of traditional face-to-face teaching could instead facilitate parallel delivery of theory and practice. Such parallel delivery could proffer several advantages by countering concerns of prolonged student isolation from social distancing; facilitating the synchronous application of taught e-clinical skills within the practice learning environment; and increasing timetabling flexibility. This is particularly the case if the alternative is for classes to be taught several times over, in any one semester or year. Electronic learning tools are playing a crucial role during the COVID pandemic, it aims to help faculty staff, colleges, and universities to support student learning during the closure of universities and colleges. Besides, it can aid in the continuation of learning during this pandemic [8,9].

Students have been obligated to accustom to a total shift to electronic education. Electronic learning may be valued by some students, they valuing its pliability in location and time, in contrast, other students will have a negative attitude towards it as they do not have information about technology or the absence of teacher-student face-to-face teaching. Teaching is disrupted by the COVID-19 pandemic in many institutions, especially in medical and nursing colleges. The rapid spread of COVID-19 all over the world is triggering a range of public health responses [10].

The recent studies in Nepal among students and teachers found that most of the respondents (93.3%) were glad to be updated with digital technology used for taking class, also the majority of the respondents (72.1%), (78.8%), (79.8%) and (83.7%) thought online class saves time, they could involve in an online class as well as take care of their family, saves travel cost, decreased risk of accident respectively [11]. Moreover, in Poland, according to respondents' answers, the main advantages of online learning were the ability to stay at home, and continuous access to online materials [12].

In many countries, including Saudi Arabia, face-to-face teaching had to be suspended to ensure the safety of students, lecturers, and patients. This closure aims to protect students, lecturers, and patients. Other methods to educate nursing students had to be found in nursing colleges. Luckily, electronic learning is the core method to substitute face-to-face education during the pandemic. So, student's practice and attitude towards E-learning should be assessed. Both the teachers and students experience many problems with electronic learning [13,14]. Therefore, this study aims to assess the practice and attitude of nursing students towards electronic learning during the COVID-19 pandemic at Hafr Al Batin City.

METHOD

Research Design

A cross-sectional descriptive study was performed from 17 July until 1 September 2020.

Respondents

140 nursing students were included at the College of Applied Medical Science, Hafr Al Batin University from all study levels were included in the study using convenience and snowballing sampling methods.

Tool of the Study

An online questionnaire was developed by the authors after reviewing the recent researches and literature. The questionnaire is reviewed by five experts in the field of nursing education (face validity). This tool is composed of three parts.

Part 1: Socio-demographic questionnaire such as sex, age, level of education, and student experience on electronic learning.

Part 2: the practice of nursing students to electronic learning during COVID-19 pandemic. Students were given three sets of options regarding the practice of E-learning, from which they could choose (yes, no, and maybe). **Part 3:** attitude of nursing students towards electronic learning during COVID-19 pandemic. Students had to compare, using the Likert scale ranging from strongly agree to strongly disagree.

Method

The primary quantitative data was obtained by self-administered questionnaires through the online survey method. The questionnaire was developed by the authors after reviewing the recent researches and literature. The questionnaire is reviewed by five experts in the field of nursing education (face validity). The questionnaire was in the Arabic language. The questionnaire was disseminated to the participant through social media (Facebook, WhatsApp, and so on). At the start of the questionnaire, the purpose of the study and the confidentiality of data is stated. A pilot study was done on 10% of total subjects to ascertain the clarity and applicability of the study tools. The pilot subjects were excluded from the study sample.

Ethical Considerations

Ethical approval to conduct the study was obtained from the Dean of applied medical college and by an Institutional Review Board (IRB) at Directorate of Health Affairs at Hafr Al Batin city number 24. Informed consent was obtained from students to participate in the study through explanation and guidance at the start of the questionnaire that when they complete the questionnaire and make submit, this considers an agreement to participate in the study. Confidentiality was assured. Any potential conflicts of interest have been disclosed.

Statistical Analysis

The data were coded, entered, and analyzed using SPSS (version 20). For quantitative data, descriptive statistics (frequency numbers and Percentages) were used to present students' demographic characteristics and their practice and attitude towards E-learning. The mean and standard deviation were calculated for student age.

RESULTS

Table 1 illustrates the socio-demographic characteristics of the study respondents. It was found that all study respondents were females. About their age, it was clear that the majority of study respondents (94.3%) were at the age from 20 to less than 25 with rang from 18-23. Regarding their educational level, about one-third (32.9%) of the study respondents were in the 3rd level. Moreover, 12.9% of the study respondents were in the 7th level of education. The tables also revealed that about two-thirds of the study respondents hadn't experience E-learning.

Table 1 Characteristics of the study respondents

Characteristics of the studied students	Study subject No=140	
	No	%
Sex		
Females	140	100
Age in Years		
<20	8	5.7
20 ≤ 25	132	94.3
Range	18-23	
Mean ± SD	19.2 ± 3.2	
Education level		
1st	0	0
2nd	18	12.9
3rd	46	32.9
4th	18	12.9
5th	14	10
6th	26	18.6
7th	18	12.9
Experience on E-learning		
Yes	52	37.1
No	88	62.9

Table 2 presents students' preparation for lectures through E-learning. It was found that 71.4% of respondents had prepared for the lecture by opening the internet and the blackboard at least ten minutes before it. Also, slightly more than two-thirds (68.6%) of the students had an internet connection to attend the lecture online at home and 28.6 of them hadn't tooled available at home to lecture online. Moreover, the majority of the students (97.1%) had complete knowledge of the media used for online education (such as join, register, unmute, leave, etc.). The table also revealed that slightly less than one-third (31.4%) hadn't used a laptop/computer for internet lecture.

Table 2 Student preparation for lectures through E-learning

Student preparation for lectures	Study subject No=140					
	Yes		No		Sometimes	
	No	%	No	%	No	%
Are you preparing for the lecture by opening the internet and the blackboard at least ten minutes before it?	100	71.4	8	5.7	32	22.9
You have an internet connection to attend the lecture online at your home	96	68.6	8	5.7	36	25.7
I have tools available at home to lecture online	88	66.9	20	28.6	32	22.9
Have complete knowledge of the media used for online education (such as join, register, unmute, leave, etc.)	136	97.1	4	2.9	0	0
Used laptop/computer for internet lecture	82	58.6	44	31.4	14	10
I use mobile phone (cell phone) for lecture online	94	67.1	20	14.3	26	18.6

Table 3 shows student practice of lectures through E-learning. It was found that about two-thirds (65.7) of the students had participated in educational activities during the lecture with the course professor. The table also illustrated that more than half (52%) of the students didn't give attention to the lecture throughout the time of the lecture. Moreover,

the majority of students (90%) had attended the lecture to its end. Also, 65.7% of students had asked the course professor about any part of the subject that they did not understand. Besides, 91.4% of students had committed to entering all the lectures of the same subject, whereas, 94.3% of students had committed to entering all the lectures of all subjects in the semester. Slightly less than one-third (31.4%) of students had attended the lecture intermittently. Moreover, 60% of students had returned to the recorded lectures when they lost or did not understand part of the lecture. Also, 75% of students had got notes/lecture materials from teachers even when they couldn't join their class online.

Table 3 Student practice of lectures through E-learning

Student practice of lectures through E-learning	Study subject No=140					
	Yes		No		Sometimes	
	No	%	No	%	No	%
Do you participate in educational activities to lecture with a subject professor?	92	65.7	12	8.6	36	25.7
Do you give the lecture your attention throughout the time of the lecture	78	55.7	10	7.1	52	37.1
Do you attend the lecture to its end?	126	90	4	2.9	10	7.1
Do you ask the subject professor about any part of the subject that you did not understand?	92	65.7	22	15.7	26	18.6
Do you commit to entering all the lectures on the same subject?	128	91.4	-	-	12	8.6
Do you commit to entering all the lectures of all subjects in the semester?	132	94.3	-	-	8	11.4
Do you attend the lecture intermittently?	10	7.1	86	61.4	44	31.4
Do you return to the recorded lectures when you lost or did not understand part of the lecture?	84	60	26	18.6	30	21.4
Do you raise the duties and seminars required of you in each course?	140	100	-	-	-	-
I get notes/lecture materials from teachers even when I cannot join my class online	70	50	46	32.9	24	17.1

Table 4 represents student attitude toward E-learning. The table explains that 40.0 % of students preferred E-learning. The table also revealed that 21.4% of students strongly agreed that E-learning makes them far from a course teacher. Also, 41.4% of students strongly agreed that E-learning is an alternative to regular education. The table also illustrated that more than half (54.3%) of the students disagreed that Distance education is useful for practical courses. Slightly more than half (54.3%) of students strongly agreed that E-learning helped them in theoretical courses. Moreover, 32.9% of students strongly agreed that they had fairly evaluated in the evaluation remotely. Also, 37.1% of students strongly agreed that they had got a great deal of lecturing in E-learning and 45.7% of students strongly agreed that it is useful for them to record the lectures for reference again. Slightly more than one-third (35.7%) of students agreed that they preferred to see a course teacher, even if it is E-learning. 45.7% of students strongly agreed that they enjoyed lecturing from home more than college.

Table 4 Student attitude toward E-learning

Student Attitude toward E-learning	Studied subject (n=140)				
	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
	No (%)	No (%)	No (%)	No (%)	No (%)
Prefer distance education	56 (40.0)	4 (2.9)	38 (27.1)	26 (18.6)	16 (11.4)
E-learning makes me far from a course teacher	30 (21.4)	56 (40.0)	28 (20.0)	18 (12.9)	42 (30.0)
Distance education is an alternative to regular education	58 (41.4)	12 (8.6)	18 (12.9)	32 (22.9)	20 (14.3)
Distance education is useful for practical courses	26 (18.6)	14 (10.0)	24 (17.1)	18 (12.9)	58 (41.4)

Distance education helps me in theoretical courses	76 (54.3)	28 (20.0)	26 (18.6)	6 (4.3)	4 (2.9)
I'm fairly evaluated in the evaluation remotely	46 (32.9)	32 (22.9)	16 (11.4)	22 (15.7)	24 (17.1)
Get a great deal of lecturing in distance education	52 (37.1)	20 (14.3)	48 (34.3)	12 (8.6)	8 (5.7)
It is useful for me to record the lectures for reference again	64 (45.7)	30 (21.4)	32 (22.9)	14 (10.0)	-
I prefer to see a course teacher, even if it is distance education	26 (18.6)	24 (17.1)	32 (22.9)	36 (25.7)	22 (15.7)
I enjoy lecturing from home more than college	64 (45.7)	8 (5.7)	38 (27.1)	18 (12.9)	12 (8.6)

DISCUSSION

Electronic learning is playing an important role during COVID 19 pandemic. The current study aimed to assess the practice and attitude of nursing students towards electronic learning during the COVID-19 pandemic at Hafr Al Batin City. It was found that all study respondents were females, this could be attributed to the fact that all students included in the nursing department were females, and males have newly joined the college at the first level. The study results revealed that about two-thirds of the study respondents hadn't experience E-learning, this result is expected because students before the COVID-19 pandemic learned only through face-to-face education [15,16]. This result is in agreement with Michal Baczek, et al., who found that 60% of students hadn't experience E-learning [17]. Students in our study had prepared themselves for the lecture by opening the internet and the blackboard at least ten minutes before the lecture. Also, slightly more than two-thirds of the students had an internet connection to attend the lecture online at home. A possible explanation for this might be as students knew the importance of attending lectures for all courses. Moreover, about two-thirds of the students had participated in educational activities during the lecture with the course professor. This result could be explained in the light of participation marks which means that student participation increased to get marks. Our study found that more than half of the students didn't give attention to the lecture throughout the time of the lecture, this may be related to decrease interaction during an online session. This result is congruent with Michal Baczek, et al., who found that there was a lack of an interactive approach when developing E-learning courses [17]. More than two-thirds of students use mobile phones for lecture online as most of them weren't having a laptop for online lectures. Subedi, et al. were agreed with our study results as they found that 58.4% used mobile (cell phone) on online lectures [11].

Self-learning needs the student to put self-discipline, which can be enhanced by direct supervision from the teacher [19]. The results of our study were shown that about one-third of the students were attending the lecture intermittently. One of the reasons could be the poor interaction between learners and facilitators when developing E-learning courses.

Education in a clinical setting is important for nursing students and it cannot be fully replaced with online education [5]. Our study evaluated the use of E-learning in practical courses. From student opinion, electronic learning is less efficient in increasing their clinical and communication skills. Moreover, about half of the students disagreed that distance education is an alternative to regular education and they stated that it makes them far from a course teacher.

Moreover, the main advantages of E-learning among the study students are the ease of doing assignments and homework after online class and saving travel cost. This result is in agreement with Michal Baczek, et al., who found that online learning reduces the cost of accommodation and transportation [17]. while feeling uncomfortable during online classes due to the internet and the electricity problems were rated by the students as the most disadvantages of electronic learning. This finding is in agreement with Subedi, et al. [11]. Students suffering from an eye problem and or headache due to the online lecture are another important disadvantage of E-learning, this could be due to the long period of staying in front of laptops and telephone [18].

To maximize student interaction during online learning, there are many ways; gamification is a new and joyful way, which includes game layout but it is used in non-game status. In a systematic review conducted by Hamari, et al., gamification has been proven to be effective in many fields, especially in education. Another different method is social and collaborative learning [13,20]. In this method, students are allowed to interact with each other as well as instructors. They share their ideas and knowledge in an open session. In a study by Bergl. et al., the majority of students rated evaluated Twitter as a method that enhanced their education [21].

The study has potential limitations. A major limitation is the small sample number, so the researchers need to base the same study on a larger sample size to end up with more accurate results. Another limitation is that the study tool not assessed the students' attitude towards online exams and methods of assessment. Also, the study tool not assessed the teacher's attitude towards E-learning.

CONCLUSION

This study revealed that nursing students had prepared themselves well to practice E-learning during the COVID-19 pandemic. The respondents in our study agree that E-learning is effective in increasing knowledge and is highly accepted but they disagreed that E-learning is useful for practical courses. However, it is important not to focus only on increasing knowledge, but also on clinical and social skills. E-learning should not only be based on the delivery of content, but students should be able to work with the materials and receive feedback. Successfully implementing online learning into the curriculum requires a well-thought-out strategy and a more active approach.

DECLARATIONS

Conflicts of Interest

The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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