Emergency Remote Learning in Nursing Education During the COVID-19 Pandemic

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Abstract. Due to the corona (COVID-19) pandemic, several countries are currently conducting non-face-to-face education. Therefore, teachers of nursing colleges have been carrying out emergency remote education. This study developed a questionnaire to understand the status of Emergency Remote Learning (ERL) in nursing education internationally, translated it into 7 languages, and distributed it to 18 countries. A total of 328 nursing educators responded, and the most often used online methods were Social networking technology such as Facebook, Google+ and Video sharing platform such as YouTube. The ERL applied to nursing education was positively evaluated as 3.59 out of 5. The results of the study show that during the two semesters nursing college professors have well adapted to this unprecedent crisis of teaching. The world after COVID-19 has become a completely different place, and nursing education should be prepared for 'untact' education.

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1. Introduction

The coronavirus (COVID-19) outbreak which began in Wuhan, in the Hubei province of China, at the end of December 2019, seems to impact our society at all levels in terms of fast global spreading [1]. COVID-19 was designated a pandemic by WHO in March 2020 and has been a source of negative influence not only for our daily lives but for the field of nursing and nursing education [2].

School closures took place across mainland China at the end of January 2020, for four weeks in Hong Kong in February 2020, followed by massive school closures in many countries to prevent the spread of COVID-19 [3]. In these circumstances, nursing education had to embrace a new paradigm shift. Offline education is no longer available, all nursing curriculum including practical classes have to be conducted online. In this way, an education method that temporarily switches to online in a crisis such as COVID-19 is formally named Emergency Remote Learning (ERL) [4].

To date, research into ERL or online nursing education methods caused by COVID-19 has been conducted only nationally. Therefore, this study attempts to investigate the current status and provide improvement comments of emergency remote learning (ERL) from an international perspective.

2. Methods

2.1. Questionnaire design

The questionnaire was developed through repeated discussion by 11 IMIA-NI SEP members referring to literature on COVID-19 online education. The final questionnaire was translated into 7 languages (Arabic, English, Korean, Bahasa Indonesia, Portuguese, Español and Traditional Chinese). Each translation was done by bilingual-speaking nurses with a background in nursing informatics. Translations have been verified by at least two other bilingual-speaking NI professionals and revised until a final version was produced [5].

The questionnaires consist of 21 questions and have both structured and open-ended response options. There are 7 demographic questions for teacher: age, country and city, current position, education-level, educational background, teaching year, and subject type [6-10]. The 11 questions are on the ERL in nursing education, all used Likert 5-point scale from 'not much' to 'very much'. Eleven questions are on ERL teaching methods, overall satisfaction, contents, delivery, teacher-student interaction, burden, technology self-efficacy, support, and willingness to use in the future [6, 8, 11-14]. Lastly, there are three open-ended questions for collecting free comments on ERL. This paper focuses on the quantitative responses to 11 questions about ERL.

2.2. Collecting data

Our study was approved by the institutional review boards at the Hoseo University (IRB No.1041231-200825-HR-114-01). Any professor (or instructor) with experience in

nursing education after COVID-19 pandemic (since January 2020) was eligible to participate. We used snowball sampling to reach as many international respondents as possible. The surveys were distributed and the responses were collected using Google Forms. The datasets were collected from November 2020 to January 2021.

2.3. Analysis

Analysis process is conducted by Python (3.6.9), numpy (1.19.4), pandas (1.1.5), and skilearn (0.22.2.post1) library. Descriptive statistical analysis of general characteristics and ERL is performed.

3. Results

Total of 328 respondents who answered the questions focused on ERL in nursing. Responders were from 18 different countries in Brazil, Indonesia, South Korea, Jordan, Philippines, Taiwan, Argentina, Canada, Finland, USA, Mexico, Italy, India, Portugal, Saudi Arabia, Scotland, Switzerland, and Turkey. The professional positions of the respondents were Professor (7.3%), Associate professor (13.1%), Assistant professor (25.9%), Instructor (52.1%) and Others (1.5%). The ages of respondents were in 20s (4.6%), 30s (36.3%), 40s (35.4%), 50s (14.3%), 60 years old (8.8%), and no respondents (0.6%). More than half of the respondents had a PhD (55.2%) and 38.4% of them had a Master's degree.

Online methods used in the Covid-19 situation are 1) Social networking technology such as Facebook, Google+, WhatsApp, Twitter (46.0%), 2) Video sharing platform such as YouTube, Flipgrid (43.9%), 3) Learning Management System such as Google classroom, Moodle, Blackboard, Elevate, Flinga (39.9%), 4) Institution's online platform (29.9%), 5) Video conference system such as Zoom, Microsoft Teams, Hangout Meet, Skype etc. (14.6%), 6) Game-based learning platform such as Kahoot (14.0%), 7) Blog or website (11.0%), 8) Massive Open Online Courses such as Coursera, Canvas Network (8.5%), and 9) Virtual learning system such as SecondLife, vSim (4.9%). The response results for ERL status are shown in Table 1.

Table 1. Likert 5-point scale response result for ERL status (n =328)

Concepts	Questions	Mean (std)
Overall satisfaction	Overall, Emergency Remote Teaching (chosen in the previous question) worked well in my teaching	3.59 (0.83)
Contents	Emergency Remote Teaching provided in-depth learning opportunities for students when compared to my traditional teaching	2.96 (1.06)
	Emergency Remote Teaching provided a wide range of learning opportunities for students when compared to my traditional teaching.	3.20 (1.05)
Delivery	Emergency Remote Teaching delivered exactly what I originally planned regardless of COVID-19	2.83 (1.17)
Teacher-student interaction	The teacher-student interaction worked equally well in Emergency Remote Teaching compared to traditional methods	2.67 (1.18)
Burden	Moving into Emergency Remote Teaching from traditional teaching has been a burden for me	3.27 (1.25)
Technology self-efficacy	I have become much more confident in dealing with technology of online teaching since the Emergency Remote Teaching started	3.76 (1.05)
Support	It has been easy to find help on using digital/online education material for Emergency Remote Teaching	3.61 (1.07)

	My institution/school has fully supported the transfer of my teaching into Emergency Remote Teaching	3.88 (1.14)
Willingness to use in the future	I will increase the use of distance/online education methods which have been used in Emergency Remote Teaching in the future	3.76 (1.16)

4. Discussion

Overall satisfaction with ERL nursing education due to coronavirus was 3.59 on average, with a high positive evaluation. In-depth learning, educational delivery, and teacher-student interaction, which were pointed out as disadvantages of online education, had a negative rating of less 3. Burden turned out to be many in changing from traditional teaching methods to ERL or online education.

Nevertheless, it has been found that teachers' technology self-efficacy has been increased by applying ERL, and each university has been giving appropriate support for teachers. In addition, there were many opinions that the ERL method currently being used are likely to be used in the future.

5. Conclusion

In this paper we analyzed the status of ERL in nursing education based on the 328 responses from nursing professors and instructors of the 18 countries. Online or distance learning applied to the pandemic was seen confusing at first, but the results of our study show that after the two semesters the nursing college teachers have adapted well. Life after COVID-19 has become a completely different world, and nursing education should now be prepared for 'untact' education. In the future, additional qualitative analysis will be conducted by natural language processing methods for open-ended questions.

Acknowledgement

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