Exploring the Needs for Developing MOOC Module on Risk Communication in Global Health Emergencies for Continuing Nursing Education Programme: A Qualitative Study

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ABSTRACT

To support the learning process, it is essential to conduct a needs analysis to identify appropriate instructional materials that fit the learners' characteristics and learning environment. This study aimed to identify the need for developing a MOOC module on risk communication in global health emergencies to use as a teaching tool for continuing nursing education programmes. Following the principles of a qualitative research design, a total of 14 participants, including two nursing lecturers from Kulliyyah of Nursing, International Islamic University Malaysia (IIUM), two nurse managers (matrons), two emergency physicians, and eight registered nurses (RN) from SASMEC @ IIUM, were selected through purposive sampling method and interviewed using semi-structured interview-guided questions. The interview data were analysed using thematic analysis. The participants stated that continuing nursing education (CNE) was essential for professional development (PD) and a resource for enhancing existing skills and knowledge. Risk communication skills were crucial for nurses in emergency healthcare contexts. The majority of this study's participants were unfamiliar with MOOC courses and stated that support and motivation from their institution, as well as monitoring of participation and course completion, were needed to implement MOOC courses successfully. To sum

up, understanding of continuing education, current risk communication knowledge and literacy, and awareness of MOOCs were explored. These realities will support the development of the risk communication MOOC module that will help improve nurses' risk communication skills and better prepare them for future global health emergencies.

INTRODUCTION

Innovative technologies are a critical component of the healthcare system and they raise the standard of the healthcare education process. Recently, technology has been rapidly penetrating healthcare education as well as nursing education (Safana & Nat, 2017). Continuing education could be a lifelong professional development process, and it constitutes planned learning experiences aimed at enhancing the knowledge, skills, and attitudes of registered nurses in developing nursing practice to improve patient care, education, management, and research (Agyepong & Okyere, 2018). Although nurses have an innate desire to pursue continuing education, several nurses are deterred from it due to high tuition fees, tight job schedules, exhaustion from shift work, and a shortage of replacement staff. Therefore, e-learning is an emerging approach to overcome these limitations and it enables easy access and flexible learning. E-learning is promoted as a host of affordable, convenient, and growing lifelong learning opportunities (Bahrambeygi et al., 2018). Technology-enhanced teaching poses an enormous challenge for lifelong learning. Educational media could be a solution to this impact, and e-learning and Massive Open Online Courses (MOOCs) have made significant contributions to the integration of teaching and learning (Daradoumis et al., 2013). MOOCs are web-based tools for distance learning and low-cost e-learning. Developing a MOOC-based module can be a lifelong learning resource that develops learners' critical thinking, problem-solving, and interpersonal skills (Lase, 2019).

During global health emergencies, risk communication should help people to stay safe, and risk communication means that the right message given at the right time by the right person can also save their lives (Raina, 2018). Effective risk communication skills and practices are crucial for people's health and safety, particularly in times of health crises, epidemics, or natural disasters. Risk communication aims to assist individuals in making informed decisions about whether and how to address the risks they face (Heydari et al., 2021). Effective communication is important in emergency responses and an essential tool in risk management decisions (Reddy & Gupta, 2020).

Among healthcare personnel, nurses play an important role in sorting information and communicating potential risks to the public. Nurses must be excellent communicators and collaborators. Harvard's Risk Management Foundation found that over 30% of medical errors were due to nurses' poor communication (Hughes & Blegen, 2008). To improve the quality of nursing care, Zangeneh et al. (2021) recommended that communication skills training be incorporated into nurses' continuing education and on-the-job training. According to their study, nurses had a moderate understanding of communication skills. Similarly, the findings of the study titled "Nurses Communicating Risk: Strategies from the Literature" by Anderko et al. (2021) indicated that nurses should learn more about risk communication and be better prepared for situations requiring these skills. More than ever, there is an ongoing need to improve risk communication skills in health emergencies.

In Malaysia, most nursing programmes emphasise communication skills in clinical and community settings. However, communication skills in health emergencies and global health emergencies such as pandemic viral infection, outbreaks of bacterial infection, natural disasters, etc., receive very little attention.

Simultaneously, little to nothing is known about the use of MOOCs on continuing nursing education (CNE), the transfer of learning into practice, and lifelong learning for professional development (PD), regardless of whether technology-enhanced learning could assist nursing professional growth.

On the other hand, modules are teaching-learning tools that are designed systematically and interestingly to achieve the learners' expected competencies (Lindsey et al., 2022). A needs analysis initiates the phase in which an effective instructional design for delivering teaching and learning experiences is designed and developed (Desi Rizma Yanti, 2019). Beyond that, it is an important means of conducting research before designing the teaching material to gather the information that will serve as the basis for developing suitable teaching material according to the learners' needs in that particular area. The main aim of this study was to identify the need for developing a MOOC module on risk communication in global health emergencies for nurses.

MATERIALS AND METHODS

Study Design and Sampling

A qualitative descriptive study was conducted through semi-structured interviews using an interview guide that included four sections: own understanding of PD and CNE, current learning methods and online learning methods in CNE, background knowledge on risk communication in global health emergencies, and awareness of MOOC courses among nurses. The participants were selected through purposive sampling with inclusion criteria such as lecturers who had at least a master's degree in nursing science with a specialization in emergency care and also had at least three years of teaching experience, a nurse manager (matron) who had at least one year of experience in the current position, and registered nurses (RN) and emergency physicians (ED) who had at least one year of experience in the clinical setting.

Data Collection Procedure

The eligible tentative participants were invited through email. Upon their reply, the participant's information sheet and informed consent form were sent to the voluntary participants along with the date and time for the interview. After confirmation, these participants were invited via Google Calendar and the interview was conducted using semi-structured interview questions. Fourteen participants were involved. During the interview sessions, the details of participants' verbal and non-verbal responses such as body language, tone of voice, facial expressions, atmosphere, and special occasions encountered were also recorded as they might have affected the validity of the results. During the interview session, participants were allowed flexibility for dialogue. The interview session lasted 30 to 45 minutes for each participant, and all data was recorded and used in the English language during the conversation. Ethical approval was obtained from the IIUM Research Ethics Committee (Reference: ID No: IREC 2021-172) and SASMEC@IIUM (Research Grant: IIUM/413/DEaR/14/3/1/2021-01-SRG21-051-0051).

Data Analysis

Thematic analysis was used in data analysis (Braun & Clarke, 2006). First, the transcript of the interview recordings, followed by reading and re-reading of the entire dataset. Then, open coding and naming were done. During coding, the researcher addressed the research questions and mentally analysed the data to discover potential themes and then a group of sub-themes. The themes were then synthesized according to the sections of the semi-structured interview guide and then cross-checked with NVivo 12 Plus software to confirm the themes and their sub-themes. Subsequently, the evaluation of trustworthiness, which included credibility, dependability and transferability, and the authenticity of the findings were verified. To ensure the credibility (internal validity) of the

research, the study findings were confirmed by the participants. The data presented were discussed with the experts, and the related literature was also studied for the dependability of this study. For the transferability (external validity) of the findings, interviews were recorded (audio) and listened to, and the content of the recorded audio was transcribed and re-interviewed until data saturation. To ensure authenticity, the researcher first established a trusting relationship with the participants, ensuring they were aware of the nature of the research and able to express their feelings and emotions in the context of the phenomenon.

RESULTS

Socio-Demographic Profiles

A total of 14 participants, including two EDs, two nursing managers (matrons), eight RNs in SASMEC@IIUM, and two nursing lecturers from Kulliyyah of Nursing, IIUM, participated in the study. Many of them were female (72%) with an average working experience of ten years.

To identify the need for developing risk communication in the global health emergencies MOOC module for nurses, the interview was conducted using semi-structured interview-guided questions. The interview data were analysed using thematic analysis, and the themes were synthesised to address the following: (i) understanding of PD and CNE, (ii) current learning methods and practices in CNE, (iii) learning needs of nurses on risk communication in global health emergencies, and (iv) awareness of the MOOC course among nurses.

(i) Understanding of PD and CNE

Regarding professional growth and CNE, the participants' understanding in this study encompassed three main themes: (a) importance for professional life, (b) enhancing PD, and (c) updating knowledge.

(a) Importance for Professional Life

Regarding the first theme, the importance of professional life, the participants emphasised that PD and CNE were essential throughout one's career and to develop current skills. The participants explored their interpretations of PD and continuing education in this theme. Participants one (P1) and three (P3) highlighted the need for PD to earn CPD points and updates.

> "My understanding: PD is important. Anything new we need to inform the practitioners. Because they are not commonly aware of what the new things and responsible bodies are, the CPD units, academicians and managerial units. Therefore, it is important to have a branch to inform the practitioners what are the news and updates." (P1:18/3/2021)

> "Of course. Very important. Nurses need to update their knowledge from time to time. If we don't do that, nurses just do their jobs without any indication, and don't know what the effects and consequences are." (P3:20/3/2021)

Participant Two (P2) and Participant Seven (P7) stated that CNE was vital for enhancing professional skills and knowledge.

> "CNE's purpose is important to make sure that they have confidence and feel enough in their field by further study or something takes speciality. So that, they improve their skills or in terms of knowledge." (P2:18/1/2021)

> "CNE is important that the PD is given important too because the instructor has to develop and improve their skill before teaching or importing knowledge to their target group." (P7:30/6/2021)

(b) Enhancing PD

Concerning the second theme, enhancing PD, participants mentioned that PD and CNE

must be maintained to ensure competence in knowledge, skills, and behaviours. In this theme, Participant Six (P6) stated that PD was a process and there was a connection between continuing education and PD, as continuous education would improve PD and career accomplishments.

> "PD is basically a process where we will try to acquire knowledge or anything that can improve the effectiveness of our jobs. Certainly, there is a relationship between continuing education and PD because participating or by doing continuous education, somehow will help you to improve your PD." (P6: 27/6/2021)

(c) Updating Knowledge

Regarding the third theme, updating knowledge, the participants mentioned that PD and CNE were necessary and valuable resources for enhancing and expanding existing knowledge and skills. Participant Two (P2) and Participant Four (P4) indicated that each nurse should attend a workshop or seminar to acquire CPD points for licence renewal and updating knowledge and skills.

> "Last time, for CNE, they attend conferences, and face-to-face classes when duty free time. After we know the updated knowledge, share it among us." (P2:18/1/2021)

> "Every nurse needs to attend a workshop or seminar to renew their licence annually because each CNE either workshop or seminar, they get point to renew their licence. Indirectly, when they attend this kind of talk, they can refresh their skills and get updates and the latest information related to their nursing skills." (P4:19/6/2021)

(ii) Current Learning Methods and Practices in CNE

It was determined that there were three major themes or modes: (a) face-to-face, (b) online, and (c) hybrid modes. In addition, two strategies, including (d) a demonstration video and (e) an objective structured clinical exam (OSCE), were utilised to improve skills.

(a) Face-to-face Classes

Regarding the first current teaching/learning mode, face-to-face teaching, participants indicated that it was common and preferred by nurses. Participants P2, P4 and P12 reported that nurses attended a conference and a face-to-face workshop to exchange ideas and upgrade their knowledge. The participants determined that this approach was the most prevalent and well-known among nurses among the various strategies for PD in capturing CPD points for PD.

> "Current teaching strategies, right now, we are in the pandemic, so most of the current teaching strategies are more to online learning strategies, for us very love like face-to-face, we can get easily CPD points and PD." (P12:10/7/21)

> "Last time, for CNE, they attend conferences, and face-to-face classes when duty free time. After we know updated knowledge, share it among us." (P2: 18/1/21)

> "There are so many forms to enhance our professional development. One of them is CNE which include in terms of seminar, workshop, conference and so on." (P4:19/6/2021)

(b) Online Mode

Regarding the second current teaching/learning method, the online mode, participants reported that it was gaining popularity in continuing education due to the COVID-19 pandemic. Using this method, participants

investigated the implementation of regular CNE using the Google Meet and Zoom platforms. Due to the pandemic, Participants P3, P9, P10 and P12 noted that online learning was utilised for CNE and annual CPD points, despite their preference for face-to-face classes. In addition, CNE has been required in their workplaces on a consistent schedule.

> "During the pandemic, one-to-one follow SOP and online learning to get annual CPD points." (P3:20/3/21)

> "Like SASMEC, we do have CNE online, every Wednesday, all staff nurses must participate so there is no cheating among staff nurses. All the attendance was recorded. When we got topics, we prepare slides and give them, so they can get new information and they can give new information to all nurses." (P9:2/7/21)

> "We do CNE every Wednesday, and also CNE online, we discuss among nurses, paramedics and doctors, so now the current strategy is CNE for CE but the difference is it is not face-to-face, we use online, Google Meet or Zoom." (P10:2/7/21)

> "Current teaching strategies, right now, we are in the pandemic, so most of the current teaching strategies are more to online learning strategies, for us very love face-to-face, we can get easily CPD points and PD." (P12:10/7/21)

According to the COVID-19 standard operation procedure (SOP) guidelines for continuing education in nursing, Participant Five (P5) reported that both online and semi-online courses and physical classes with limited participants had been implemented.

> "What I can see during the pandemic, for nurses, their continuing education is online, semi-online or course but we follow SOP." (P5:19/6/21)

(c) Hybrid Mode

Regarding the third current teaching/learning method, a hybrid mode, the participants explored that the theory classes were taught via an online platform and the hands-on classes were delivered in a classroom with a limited number of nurses and per the COVID-19 SOP guidelines. Participant 13 (P13) stated that the hybrid mode was currently used for continuing education.

> "Currently, webinars, Zoom meetings, and Google Meet for teaching strategies due to the pandemic, before we practice, use a small seminar room allow 10 persons, online we called hybrid mode." (P13: 11/7/21)

(d) Demonstration Video

Demonstration videos and OSCE were being employed in their workplaces to increase clinical skills and maintain skill proficiency. P13 stated that CNE was for knowledge acquisition and skill competence. Therefore, skill videos were used for skill improvement.

> "Skills, during CE, not only do they get the knowledge, they can share skill videos on how to maintain catheter care. Because now, difficult for us to do physical hands-on, so only can see the video, which is the correct one. Then, senior staff or nurse managers do an audit or access their staff, whether they have the right technique or not." (P13: 11/7/21)

Participant 11 (P11) also mentioned that watching skill videos and responding to questions relating to the video viewed was one of the ways to gain CPD points through training at the workplace.

> "Video simulation practice currently in SASMEC. See video, analyse the video and sit an exam and get a certificate." (P11:10/7/21)

(e) OSCE

As a result of the nature of nursing and its education, each area's core competencies are crucial for providing high-quality nursing care. P7 mentioned that the current method for theory classes was online, whereas practical classes were physical, such as OSCE for PD and CNE.

> "The current strategies for CNE are online classes, sometimes physical classes, and OSCE station for skills." (P7:30/6/21)

(iii) Learning Neds of Nurses on Risk Communication in Global Health Emergencies

Two main themes were identified: (a) the importance for nurses and (b) barriers and challenges in improving risk communication skills.

(a) Importance for Nurses

Regarding the first theme, the participant mentioned that communication and risk communication skills were essential for nurses because they interact with people and care for their lives.

> "Very important for nurses because nurses take care human life. In health emergencies, it is important, for me." (P10:2/7/21)

In addition, the participants highlighted the importance of communication and risk communication skills for patient safety and reducing risks such as medication errors. These skills are also essential to the patient's survival in medical emergencies, particularly during resuscitation.

> "Communication is very important because we need to apply the types of communication to avoid harm to our patients. In health emergencies, we are going to about resuscitation, resuscitation communication is very important." (P11:10/7/21)

> "Very important because nurses need to have good communication, especially in the management of patients, if they have poor communication, may be errors in medication. During an emergency, communication skills are very important because of the life of patients." (P14:11/7/21).

> "Communication is important about we don't want any error to occur for the patient. In health emergencies, of course, communication is important for client safety." (P5:19/6/21)

During emergencies, communication is crucial, and individuals must be able to communicate effectively. The participants considered both verbal and nonverbal modes of communication. In the present pandemic crisis, everyone converses while wearing a mask. Therefore, it appears to be nonverbal communication, and the message is misunderstood. In addition, they highlighted that opinions and prior knowledge also influenced how information was communicated.

> "Really important. Because usually, we know that, suppose two ways, we deliver the message, other parties understand or not. So, communication is very important to understand what is the main message, we have verbal and nonverbal now wear the mask, like nonverbal, so can misunderstand information. So, communication is very important." (P12:10/7/21)

> "Communication skill is very important because there is the only way how you want to relate your opinions or knowledge or your information. In health emergencies, communication skill is very important because especially in emergencies, you need to communicate well." (P6:27/6/21)

Although communication skills are essential for nurses in their daily patient care and health emergencies, P3 reported that

nurses still lacked competency in this area and were careless about it.

> "Communication is just normal practice for nurses but they don't know how and they didn't take communication seriously but they should know communication is very important." (P3:20/3/21)

Risk communication plays a crucial role in public health emergencies, according to P8 and P9. Information conveyed should be clear and concise; the patient's report is essential and serves communication as a tool for patients' continuing treatment.

> "Communication plays a very big role in nursing because we carry the patient forward to another staff to get continuing treatment. As I told the above, communication also plays a big role in health emergencies, so we can use our nursing report as a main communication method." (P8:26/6/21)

> "Communication is very important, you know, the information that we provide it must be short and also it must be precise." (P9:2/7/21)

(b) Barriers and Challenges in Improving Risk Communication Skill

Risk communication is one of the eight core principles of pandemic preparedness outlined in International Health Regulations, which are essential to prepare for, respond to and recover from serious public health situations such as new infectious illnesses. Regarding the second theme, barriers and challenges in improving risk communication skills, the participants mentioned that there were still barriers and challenges due to the complexity of emergency circumstances, the shortage of staff in pandemic situations, and their attitudes.

> "Communication for nurses is most challenging, communication skills are always a barrier. Because we know that emergency is a really hard

situation in the hospital because we know that so many barriers exist." (P12:10/7/21)

> "So, during the pandemic COVID-19, we limit the staff. So, the task should distribute wisely. At the moment, difficult, it comes from nurses' attitudes. Nurses have to check and double confirm with the staff which one is done, required, and informed." (P14:11/7/21)

(iv) Awareness of the MOOC Course Among Nurses

MOOCs are online learning experiences that incorporate traditional teaching techniques such as video lectures, interactive components, assignments, discussion boards, quizzes, and tests. MOOCs are offered for free or at a low cost as a supplement to classroom instruction and for personal and professional development. Participants' knowledge about MOOC courses should also be explored in the needs analysis phase before the training module's design. Regarding this, four major themes were identified based on participants' feedback. These were (a) never heard about MOOC courses, (b) own meaning for the MOOC course, (c) obstacles in implementing the MOOC course and (d) suggestions for the success of the MOOC course.

(a) Never Heard About MOOC Courses

Regarding the theme, namely, never heard about MOOC courses, participants found that MOOCs were not widely known among nurses.

> "I don't know about MOOC." (P3:20/3/21, P4:19/6/21, P10:2/7/21)

Although MOOC has been introduced in various settings to accelerate the continuation of education into professional careers, the participants responded that nursing education and CNE had not yet adopted it, and this was the first time MOOC was heard.

"So far no. This is the first time I heard MOOC." (P2:18/1/21)

"I think, it's about great idea if implement MOOC. For now, there is no. Our first experience MOOC." (P9:2/7/21)

(a) Own Meaning for the MOOC Course

Regarding the theme, which was its meaning for the MOOC course, participants declared that the MOOC course was a free and accessible platform for everyone and that it was beneficial for learners with tight shift schedules, such as nurses.

"MOOC is free for all participants." (P10:2/7/21)

"MOOC is one of the accessible platforms for everyone. Every nurse can access. They enrol and they can study at their own pace of time. This is very good for a person who is working." (P1:18/3/21)

In addition, participants explored that MOOC was open, which was appropriate for the current pandemic situation, and that learners could obtain a great deal of knowledge in a short period due to the availability of several MOOC courses in various e-learning platforms.

"It's really good because you can access a lot of free online courses, and you can get multidimensional and variety of knowledge in a short time." (P6:27/6/21)

"MOOC is needed at the current situation, and they can learn openly." (P2:18/1/21)

Regarding the application of the MOOC course, participants stated that it could be used to improve existing knowledge and skills and earn CPD points for PD.

"It is good to do MOOC, because one of the points, we can collect CPD points and also, we can get knowledge. There are a lot of advantages there." (P10:2/7/21)

"MOOC is one method to improve knowledge and skill." (P14:11/7/21)

(b) Obstacles in Implementing the MOOC Course

Regarding the theme of obstacles in implementing the MOOC course, the participants mentioned that there could be challenges in implementing the MOOC course as they were unfamiliar with the MOOC course and how to use it.

"Barriers to MOOC: We are not familiar with MOOC, so we don't know how to use MOOC." (P10:2/7/21)

"Barriers, definitely first is regarding the knowledge of MOOC course itself. I think, a lot of people still don't know about MOOC." (P6:27/6/21)

As MOOC is a form of technology-based learning, participants stated that old-aged nurses might experience significant challenges in this area.

"But young people don't have a problem, but old learners may have quite challenged online in technology." (P12:10/7/21)

"Technology barriers for senior staff." (P4:19/6/21)

Apart from this, other participants mentioned that internet connectivity was one of the challenges in implementing MOOC courses.

"Internet connection will be a problem." (P11:10/7/21)

"The barrier may be Internet accessibility." (P2:18/1/21)

"Usually Internet connection, the main barrier might be". (P7:30/6/21)

The participant also stated that the nursing profession was stressful and exhausting. When nurses desire to learn through MOOCs, their time management skills could be an issue.

"Barrier, I think, time management. Clinical working may be tiring." (P14:11/7/21)

One of the participants investigated professional organisations and policies that impacted MOOC course participation. Participants in a MOOC course should be monitored and encouraged by authorised personnel.

"Barriers are professional bodies and policies." (P1:18/3/21)

In addition, participants indicated that learners' prior knowledge and learning needs could pose hurdles to the delivery of MOOC courses.

"Barrier may be topics depends on audience needs. For example, different background knowledge of the audience. Sometimes difficult to understand for nurses and others if topics are related with MO." (P5:19/6/21)

"Barrier may be a different level of background knowledge." (P9:2/7/21)

In addition, two participants said that learners' motivation, desire, and attitude also served as obstacles to their learning.

"Actually, it is good but one side, what we call – pros and cons. Only one thing we do online is our desire to learn." (P3:20/3/21)

"My personal experience, if you introduce communication module, is their attitude to learn." (P4:19/6/21)

(c) Suggestions for the Success of the MOOC Course

Regarding the theme, suggestions for the success of the MOOC course, the participants indicated that institutional support and encouragement, as well as monitoring of participation and course completion, were necessary.

"The support from an expert can improve it. To increase course completion, make follow up, reminder. Give completion certificate." (P2:18/1/21)

"If they give some points like CPD, they will participate." (P4:19/6/21)

"For future, E-learning, we can continue all disciplines, for nurses, we have to monitor how many e-learning courses they attended. I have to draw one more checklist of how many E-learning courses attended." (P3:20/3/21)

In addition, one participant suggested that assessments, active participation, and live sessions with instructors be incorporated into the MOOC course design to increase learner engagement.

"Assessment and synchronous can enhance participant engagement." (P1:18/3/21)

Generally, in this semi-structured interview, participants stated that CNE was essential for PD and a source for enhancing existing skills and knowledge. In addition, nurses earn CPD points for licence renewal and career development through participation in CNE programmes and courses. Nurses were more experienced with and preferred face-to-face programmes such as seminars, workshops, and short courses to receive CPD points for professional development, among the several CNE approaches provided. However, in the context of the COVID-19 epidemic, online approaches such as Google Meet and Zoom are popular and currently utilised in CNE activities. Social media platforms such as Instagram and Facebook could be used for educational purposes.

Risk communication skills are important for nurses both in routine and emergency healthcare settings. However, most nurses lack a clear understanding of risk communication and face many challenges and hurdles in

strengthening their risk communication skills due to the nature of real emergencies, the shortage of healthcare personnel, and their attitudes. Regarding familiarity with MOOC courses, the majority of study participants were unaware. Participants suggested that support and motivation from one's institution and monitoring of participation and course completion were required for a successful MOOC course.

DISCUSSION

Understandings of PD and CNE

PD is crucial in every profession as it is an essential aspect of advancing knowledge and skills in professional life. In this study, participants indicated that PD and continuing education were important in professional life and enhanced their knowledge and skills to date. This finding was similarly noted in Price and Reichert's (2017) study, in which nurses expected opportunities for their continuing education throughout their careers and understood that continuous learning was important to maintain their competency skills and quality patient care. It was an expressed need and expectation for nurses in their career stages. These nurses also understood that continuous learning was essential to the maintenance of their competency skills and the delivery of high-quality patient care (Price & Reichert, 2017). Furthermore, the results of the survey conducted by Lera et al. (2020) showed that the majority of participants strongly agreed on the requirement of continuing education and stated two reasons for mandatory continuing education, which were to improve the quality of nursing care provided and to upgrade of the nursing profession. These findings are quite comparable to others that have been discovered in the past. Therefore, continuing education, in general, is essential for enhancing PD and future careers.

Current Learning Methods and Practices in Continuing Education of Nurses

The purpose of CNE is to upgrade the nursing profession and improve the quality of nursing care. In the present study, participants stated that the CNE strategies were face-to-face (physical class), online and hybrid modes, particularly in theory classes and they watched and learned from a demonstration video and then practised themselves and sat the OSCE exam to improve skills. This is similar to the study of modern lifelong teaching strategies in nursing education conducted by Tachtsoglou et al. (2021), which explored that the various training programs like lectures, courses, interactive workshops, or demonstrations in the workplace were conducted during the orientation and training of new staff as well as the updating of knowledge for old staff in the changes of protocols in the workplace.

Learning Needs of Nurses on Risk Communication in Global Health Emergencies

Risk communication focuses on the dissemination of information and the perception of risks. Especially in times of health crises, epidemics, or natural disasters, effective risk communication skills are necessary for the health and well-being of the population. In this study, participants stated that risk communication skills were important for nurses in their daily work life, which is similar to the findings of the literature reviewed by Anderko et al. (2021), which found that nurses were open and willing to learn more about risk communication and believed that they needed to be better prepared for encounters that required these skills and that the basics of risk communication and the implications of these efforts needed to be educated to nurses. On the other hand, participants in the present study also explored that there were some barriers and challenges in improving nurses' risk communication skills, such as the natural hardness of emergency, shortage of

manpower in pandemic situations, and the attitude of the staff.

Awareness of the MOOC Course Among Nurses

In the present study, participants stated that the MOOC course was a free and accessible platform for everyone, it was also good for learners with busy and shift schedules, and it could be used to improve existing knowledge and skills and to earn CPD points for PD; however, MOOC was not well known among nurses. Similar to the study conducted by Purkayastha and Sinha (2021) found that the study participants were interested in pursuing a Massive Open Online Course but were less aware of how to register for a Massive Open Online Course. Therefore, they need proper guidance and more awareness of MOOC courses. The participants of the present study also mentioned that there might be some barriers to using MOOC courses as nurses were unfamiliar, and there were also internet connection problems. Moreover, they also declared that old-aged nurses might face quite a challenge when it comes to technology-based learning, such as MOOC courses. Finally, study participants highlighted that the learners' drive, desire, and attitude also became barriers to their learning. These findings are similar to those of Ma and Lee's (2017) study examining barriers underlying MOOC acceptance by college students. They explored that the individual factors, such as self-control and attitude, as well as the environmental factors, such as motivation and economic circumstances, represented barriers to the use of MOOCs. Accordingly, the participants in this study proposed some suggestions for the success of the MOOC course, such as the support and motivation from an institution as well as the monitoring of participation and course completion. In addition, participants recommended that the MOOC course

design, MOOC course assessment activities, active participation, and live sessions with instructors should be designed to improve learner engagement. Furthermore, the study on the development of medical MOOCs in China: Current Situation and Challenges conducted by Gong (2018) found that using network information required a certain level of digital literacy and strong self-motivation, self-management, and willingness to commit to free online courses.

CONCLUSION

In conclusion, based on the findings of the study, continuing education is a crucial component of professional growth, the existing risk communication knowledge and literacy of nurses, as well as some challenges and suggestions for enhancing nurses' risk communication skills, were investigated. This information assists in developing the MOOC module on risk communication in global health emergencies. This MOOC module will strengthen the risk communication skills of nurses, therefore assuring the delivery of excellent healthcare, particularly during health crises.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest in publishing this article.

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