

## Online continuing professional development (CPD) for clinical nurse in the developing countries: a literature review



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### ABSTRACT

Continuing education for nurses in the clinical setting is pivotal for their professionalism as well as the improvement of care delivery to the patient. While the traditional face-to-face method takes so many resources, online provision exists to bridge the gap. Therefore, this study aims to review the implementation of online CPD in developing countries where the characteristics of Indonesia are almost similar to these countries. Relevant publications were identified from Cochrane Trial, EBSCOhost, ProQuest, PubMed, ScienceDirect, and online manual resources from a search engine. Inclusion criteria included studies done in the low- and middle-income countries, full text, in English, peer-reviewed, and published in 2016-2020. A total of 17 articles were reviewed in this study resulting in several major themes including 1) barriers and facilitators of online CPD; 2) perception and expectation of nurses about online CPD; 3) model and development for online CPD. Study of needs and Indonesian nurse expectation and preparedness, a suitable framework to develop a more targeted and usable online CPD development plan in Indonesia can be done using pilot projects and other methods.

**Keywords:** CPD, online learning, learning method, nursing, developing countries.

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### INTRODUCTION

Nurses play a critical role in deciding the healthcare quality because they make up such a large proportion of the professional health workforce around the world. More than 55 percent of World Health Organization (WHO) member states reported experiencing fewer than 40 nurses and midwives per 10,000 people (about 23 percent report having less than 10).<sup>1</sup> Nurse and midwives account for more than half of the healthcare workforce in several countries.<sup>2</sup> The number of nurses in Indonesia in 2020 was 460.267, as per the Indonesia Ministry of Health Report 2020. In Indonesia, as in other countries, nurses comprise the largest proportion of healthcare workers, standing for 30.67 percent.<sup>3</sup>

World Health Assembly resolutions address challenges which include nursing shortages, job retention, and recruitment problems.<sup>4</sup> Countries are currently enacting continuing professional development (CPD) standards to assure that nurses and midwives maintain ongoing competencies and remain current on existing guidelines to fulfill population health needs.<sup>5</sup> CPD is also a learning and competence-building method for nurses who want to provide high-

quality care.<sup>6</sup> Nursing professionals need CPD to acquire, preserve, and improve the skills and knowledge they must provide person-centered, safe, and effective care.<sup>7,8</sup>

CPD is defined as a process of nurses' lifelong active involvement in learning activities that aid in the development and maintenance of competency, enhance professional practice, and promote the nursing career path.<sup>9</sup> This would not imply that CPD activities must be geared to support nurses' interests and abilities, either implicitly or explicitly.<sup>10</sup> Formal and informal CPD programs are both available.<sup>11</sup> Further studies, certified training, seminars, writing reflections, assembling portfolios, and perhaps even discussions with patients or coworkers are all aspects of self-development activities.<sup>12</sup>

However, there are significant differences in how CPD is implemented in other nations. Nurses in the United Kingdom are expected to demonstrate 35 hours of CPD over three years when they register. Every CPD activity that was passed received five feedbacks from service users or colleagues, as well as five reflections compiled after the CPD was completed. The nurse will next be invited to share the outcomes of her analysis

with other nurses via the given application system and sign a statement letter. This data has been sent to the Nursing Council electronically, along with proof of 450 hours of practice. The nurse will not be granted a practicing permit if the standards are not met.<sup>13</sup> Nurses in India are required to update their registration every 5 years by completing 30 credit hours each year through continuing education programs or workshops.<sup>14</sup> Nurses who wish to re-register in the Netherlands are not required to complete any continuing education. Nurses simply register their CPD activities on the National Quality Register voluntarily.<sup>15</sup>

CPD is also one of the qualifications for nurses to re-register in Indonesia. Every five years, a minimum of 25 credit units comprising of professional practice activities, CPD, scientific development, and community service are expected for registration. According to Hariyati et al., (2017), CPD was not implemented based on the requirement for a nurse competency assessment, the chance to get CPD was unbalanced, and CPD was not constructed based on the need for a nurse competency assessment.<sup>16</sup> Clinical nurses' career paths range from Level I Clinical Nurse (PK I) through Level V Clinical Nurse, according to the Minister of Health of the Republic of Indonesia's Regulation No. 40 of 2017 on the construction of a professional career path for clinical nurses (PK V). It also indicates that continuing education is one of the stages that nurses must complete to advance in their careers. The revelation of competency gaps as a result of qualifications or the growth of science and technology, as well as the context of career paths where particular competencies are required, are two reasons for the necessity for CPD. This regulation also specifies that all CPD programs which can be performed are tailored towards the capabilities of clinical nurse professionals at all levels.<sup>17</sup> In practice, nevertheless, CPD in Indonesia has not even been centered on development needs as well as competency requirements.<sup>18</sup>

Finances, a shortage of nurses, and insufficient time owing to inefficient scheduling, according to Alshahrani, have all been barriers to implementing CPD.<sup>19</sup> CPD is typically provided by nursing

school institutes, with nurses responsible for reimbursing the fees incurred, or by the hospital where the nurse works. Many employees compete for a fixed budget. When educational institutions no longer provide these activities, implementation can be hampered.<sup>20</sup> As the competent nurses can be an asset, the allocation of cash for CPD that must be paid by hospital management appears to be a small price to pay to support and enhance nurse competence.<sup>21</sup>

Online CPD can be utilized as an alternative to tackle problems mentioned previously. Various topics can be available online using a computer or mobile device at any time and from anywhere.<sup>22</sup> Nurses tend to be able to comprehend the use of digital technology for professional development. All authorized CPD programs should contain nursing informatics, according to the Australian Nursing and Midwifery Accreditation Council.<sup>23</sup> According to the findings of a study conducted in Beijing on the use of e-learning for CPD programs on 2,826 nurses, e-learning was highly significant, practical, and expected to be utilized as a CPD platform.<sup>24</sup> According to the study's findings, 56.4 percent strongly believe that e-learning is employed as a platform for continuing professional development.<sup>25</sup> For health reasons and to avoid the spread of infection, practically all CPD activities have been conducted online, particularly after the covid-19 pandemic.<sup>26</sup>

Online CPD has been widely carried out in various countries, but in Indonesia, this has only developed since the Covid-19 pandemic. This study aims to review the implementation of online CPD in developing countries where the characteristics of Indonesia are almost similar to these countries. The results of this review will be used as a guide for the author to analyze the possibility of its application in Indonesia.

## METHODS

This study uses a literature review to allow the author to synthesize, analyze, and make conclusions from a large body of knowledge. As a result, the authors will be able to develop future-oriented initiatives, standards, and development guidelines.<sup>27</sup> In the four phases which follow, the initial

steps and important choices involved in performing a literature review will be presented and discussed: (1) determining the aim, specific research questions, and format of review; (2) performing the review, which entails finding articles and screening them according to established inclusion and exclusion criteria until the final results are obtained. (3) analysis, which entails extracting pertinent data and tailoring it to the study's objectives. (4) composing the critique.<sup>28</sup>

Inclusion and exclusion criteria were set to obtain specific search criteria. The inclusion criteria consisted of articles providing information on the design, development, and evaluation of the use of e-CPD, full text written in English and published during the period 2016-2020. Meanwhile, the exclusion criteria consisted of not including nurses as participants and not from developing countries. The delimitation of developing countries is based on the 2018 International Monetary Fund report.

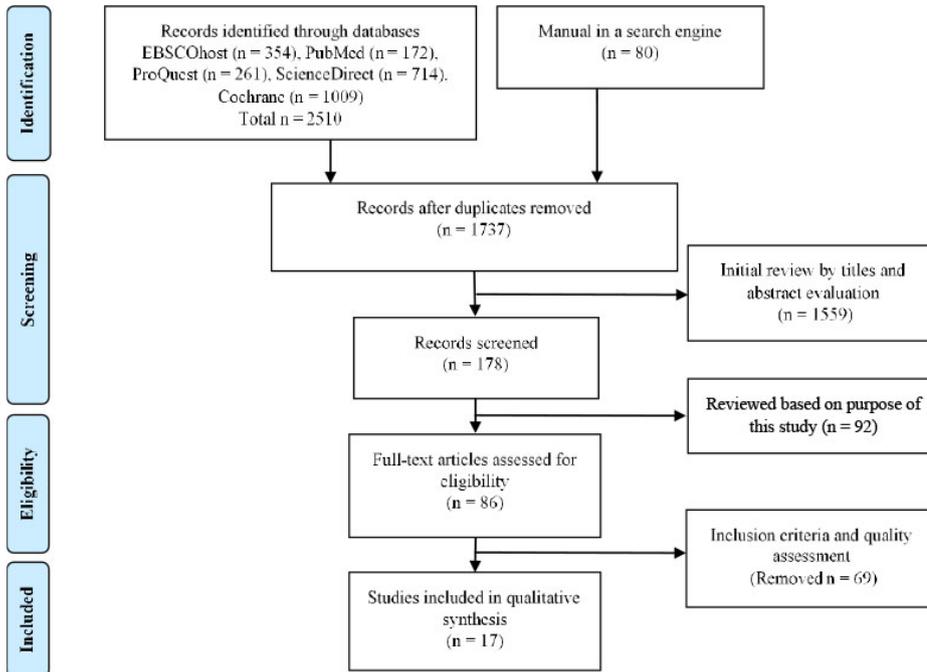
This literature review utilizes PRISMA & PICO tools. The researcher performed a literature search from various electronic databases, including EBSCOhost, PubMed, ProQuest, ScienceDirect, Cochrane, and online manual resources from a search engine. The keywords for the database search are *continuing professional development* AND *nurs\** AND *hospital* AND *method* AND *e-learning*. Keywords were adapted for various databases and all keywords were searched using Medical Subject Headings (MeSH). The PRISMA flowchart is presented in [Figure 1](#).

## LITERATURE REVIEW

### Searching Result

The results of this literature review obtained 17 articles that match the established criteria. [Table 1](#) briefly summarizes the characteristics of the included online CPD in developing countries. The majority of the articles on online CPD were written in South Africa (n=7), Asia Pacific (n=5), South America (n=3), Central America (n=1), and undescribed (n=1).

These publications' media or platforms are as follows: website-based.<sup>29-41</sup>; pdf, PowerPoint, excel spreadsheet, and modules are examples of soft files<sup>42-44</sup>; email, telephone, text message, and



**Figure 1.** The PRISMA flow chart.

WhatsApp<sup>31,36,40,45</sup>; online meeting.<sup>45</sup> The authors discovered three key topics as a consequence of their analysis: 1) barriers and facilitators of online CPD; 2) nurses' perceptions and expectations of online CPD and 3) model and development for online CPD.

### Barriers and facilitators of online CPD

It is widely acknowledged that nurses play a critical role in reviving primary health care and people-centered care. Nurses are on the front segments of healthcare. They must be either leaders or major players in multi-professional and multidisciplinary health teams in various nations. At all levels of the health system, they provide a broad variety of healthcare services. This assures that care is administered where it is most needed and allows for greater flexibility in dealing with the rising burdens of communicable and non-communicable diseases in both secure and conflict-affected countries around the world. To attain universal health coverage, the nursing workforce's quality, quantity, and relevance must be ensured.<sup>46</sup>

CPD is unquestionably vital since it benefits the individual, their profession, and the broader public. It improves credibility and keeps knowledge and skills continue to provide professional health

care. It also keeps people up to date with industry changes by regularly updating their skill set and filling in knowledge and competency gaps. Nevertheless, several hurdles to professional engagement in CPD programs played a role. Professional attitudes toward CPD or time limits due to workload are the most common impediments that prohibit most professionals from participating in CPD.<sup>47</sup> Within countries with similar healthcare systems, there is a disparity in the number of hours of mandated – or regulatory – CPD necessary. Regardless of the differences in necessary CPD hours between countries, there is a global campaign to make CPD mandatory.<sup>48</sup>

Moreover, many education providers face difficulty in educating the nursing profession because of the diverse learning styles of the existing pool of possible students, as well as the workforce's ever-changing demographics.<sup>49</sup> Nurses, according to Khupke, have identified several barriers to leveraging the benefits of CPD for better patient outcomes, the most significant of which is administrative. CPD benefits the healthcare consumer, the healthcare profession, and the employing company in the end.<sup>49</sup>

However, nurses in developing nations face a wide range of obstacles in everyday

practice, which necessitates a broad general skill set to deal with the complexity and demands of clients, often in a setting where resources are low and support mechanisms are minimal.<sup>50</sup> Furthermore, because healthcare delivery methods and technology are always changing, nurses must be versatile and sensitive to new demands.<sup>51</sup> Nurses cited a variety of reasons for implementing CPD, including assistance from organizations and coworkers, family, financing, inadequate time and learning opportunities, and competence of CPD. The constraint of IT usage/literacy/brain damage to be solved is exacerbated by the limited CPD platform or medium, as well as the hardware and software. The language barrier is also a serious challenge for people who can only speak Indonesian adequately.<sup>52</sup>

The advantages of online CPD include increased accessibility, improved national certification, expanded responsibilities for partners and educators in online CPD implementation, free research education, appealing and high-quality courses for the community, and support for in-class instruction. Nurses' continuing education needs can be met with more accessible materials, flexible schedules, and Online CPD.<sup>53-55</sup>

### Perception, acceptance, and expectation of nurses about online CPD

It is required that professional nurses fulfill their clinical hours, educational requirements, research projects, and community service requirements. Employees who participate in routine CPD activities reap personal and organizational benefits, according to Clark.<sup>56</sup> Increased job satisfaction, job retention, professional progress, and high-quality patient care are among them. Clinical competency, job stability, health promotion, and improved workplace well-being are among the driving motivations for CPD, according to the literature. Therefore, perceived constraints or gaps, such as a lack of time, budget, employer support, and job overload, must be addressed to allow continuous education (CE) activities for health care employees. This analysis has revealed that pursuing lifelong learning necessitates participation and dedication

on various levels.<sup>56</sup>

Online CPDs are well received and well accepted for potentially adopted, some are self-initiative CPD online as well as asynchronous with the evaluation tools, essential and effective improve knowledge and skill on pedagogical impacts, used augment education and training, nurse satisfaction, adherence of course completions more than withdrawal, time dedication, improve teaching method and job satisfaction, positive evaluation.<sup>57</sup> The effectiveness of remote learning can be unintentionally examined by looking at whether or not the outcome measures have improved.<sup>33</sup> Previous studies on direct-indirect clinical practice based on patient perspective enhanced results and Quality of Life (QoL), emphasizing the value of distance-learning-based formal training.<sup>30</sup>

To regenerate their nursing practice certification, all Indonesian nurses must complete professional credit. They must earn a minimum of 25 credits every five years, which comprise professional and clinical hours, educational, research, and community service. CES contribute the most credits to CPD activities in Indonesia, according to Izzah, accounting for 40-80 percent of all credits (10-20 credits). Even though Indonesia's metropolitan context is comparable to that of other industrialized countries, Indonesian nurses in particular, as a developing country, face some challenges, particularly in terms of resources, specifically facility, access, and internet network.<sup>58</sup> Indonesian nurses have a wide range of knowledge and skills, as well as a requirement for continuing education, upgrades, and facilities and support resources.

### Model and development for online CPD

Figure 2 depicts the recommended paradigm and development for online CPD based on the examined studies. It's predicated on what's already been published on the subject. Managers can use this framework as a reference when creating CPD models, which might range from traditional to online.

If the framework that has been established is referred to, it is highly likely to be implemented, just as the purpose

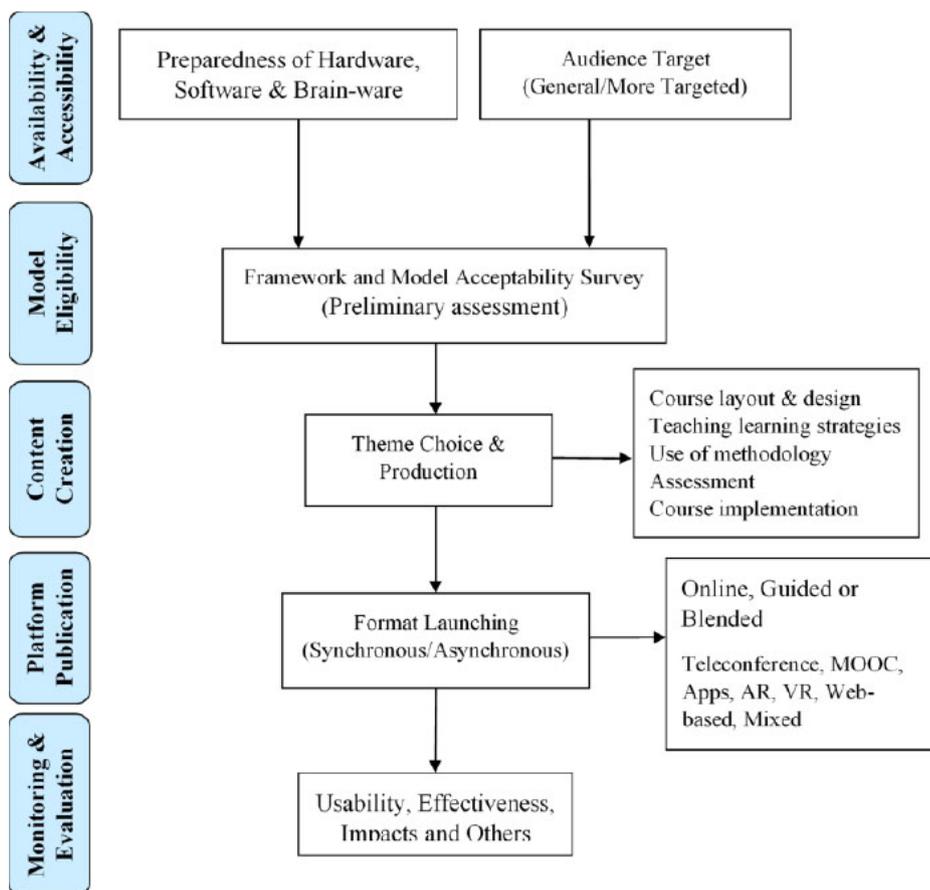


Figure 2. Proposed model and development for online CPD.

of this study, which is to determine the feasibility of adopting online CPD in Indonesia, is highly likely to be realized. The fact is that since the Covid outbreak, almost all CPD efforts in Indonesia were conducted entirely online on various platforms. Most of the activity is carried out in collaboration with local education institutions. Nurses' participation in Indonesian National Nurses Association webinars demonstrates this. Each webinar session attracts hundreds of thousands of viewers.<sup>59</sup>

### Strength and limitation

The strength of this evaluation is that it provides a comprehensive review of published online CPD in easy-to-understand terms, which can help nurse managers who are new to online CPD implementation. The findings point the way for future practice and study. Despite our search's broad inclusion criteria, some papers discussing online CPD were probably missed. It's possible that

we overlooked pertinent search phrases or publications that didn't specifically mention online CPD. Furthermore, the requirement to include discussion and review papers to collect all online CPDs hindered a rigorous quality assessment of the articles included.

### CONCLUSION

Barriers and facilitators of online CPD, nurses' perceptions and expectations of online CPD, and model and development for online CPD were some of the primary themes explored in this review. CPD for nurses utilizing the e-learning technique is still limited in Indonesia, as it is in other developing countries, particularly in terms of accessibility and acceptance. The implementation of a proper framework and development strategy is critical. The pilot project and other methodologies can be used to study the requirements and expectations of Indonesian nurses, as well as establish an appropriate framework for developing a more targeted and

usable online CPD development plan in Indonesia.

## DISCLOSURES

### Conflict of Interest

The authors have declared that no competing interest exists.

### Ethics Approval

Not applicable.

### Acknowledgment

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### Authors Contribution

NS, TS, LL, and AM are responsible for the study design and conception, data collection, data analysis, and manuscript writing and revisions for intellectual content.

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**Table 1. The Summary of articles about online CPD (n=17).**

No	Author (Year)	Location	Topic & Method	Media/Platform	Target	Result and Recommendation
	Prado et al (2020)	Six Countries in Central America	Topic: CAHI Fellows Method: Four one-week in-person courses plus virtual sessions make up the blended learning program.	Email, phone calls, text messages, in-person meetings, public events, online meetings, webinars, or field visits are all options.	100 Health Professionals	Health care leadership development programs can use social networks to boost their impact by encouraging participants to interact.
	Feldacker et al (2017)	13 countries in Sub-Saharan Africa	Topic: Clinical Management of HIV Method: Video lectures, readings, discussion forums, quizzes, and assignments are all part of this online graduate course.	The University of Washington (UW) School of Medicine has a website.	464 Clinicians	A varied group of HCWs from Sub-Saharan Africa accepted online CPD possibilities, which should be expanded to provide more flexible chances for self-directed learning.
	Abdulwadud (2019)	Defence Force Medical Services Zambia	Topic: EBM training for the military staff healthcare workforce. Method: Learning Resource Centers to access EBM resources.	Cochrane Resource	57 Military Health Personnel	Addressing the various barriers that military medical personnel confront would make it easier to provide evidence-based care and enhance patient outcomes.
	Herman, Grobbelaar and Pistorius (2020)	South Africa	Topic: Design and development of technology platforms using ecosystem perspective Method: Grounded Theory Conceptual Framework Analysis process.	MomConnect	9 Local and International Experts	Platform owners can utilize the finished framework as a management tool.
	Mauco, Scott, and Mars (2020)	Botswana	Topic: Validation of an e-health readiness assessment framework for developing countries Method: e-health readiness assessment framework (eHRAF)	A questionnaire and open-ended responses using an Excel spreadsheet, and NVivo 11 software	15 e-Health Experts from Botswana, LMIC Within and Outside SSA, and the developed world.	The proposed eHRAF helps e-health policy creation and planning by defining the important topics to consider when preparing for an e-health readiness assessment in developing countries in an evidence-based manner.
	Azad (2020)	Low-income and middle-income countries	Topic: Continued nursing education Method: Nurse empowerment is emphasized through the use of multiple mediums for training.	EndNote X8 and Excel also Comprehensive education with multiple modalities & Training aids	Interventional Studies on Continued Nursing Education	In LMICs, continuing nursing education is critical and effective in strengthening nurses' knowledge base and, as a result, patient outcomes and care quality.

No	Author (Year)	Location	Topic & Method	Media/Platform	Target	Result and Recommendation
	Oliveira et al (2017)	20 hospitals linked via a telemedicine network in Northeast Brazil	Topic: Development and Assessment of an E-learning Course on Pediatric Cardiology Basics  Method: A pre and post-test approach. User satisfaction was evaluated using Wang's questionnaire.	Moodle and contents adapted from a book on this topic	62 Health Professionals	The results of the pedagogical impact study revealed significant changes in knowledge appraisal before and after the training. The findings of the survey revealed significant levels of satisfaction. Moodle and its influence were confirmed, proving that e-learning is a feasible method for improving training in neonatal congenital heart disorders.
	Hockenberry, (2020)	Malawi, Uganda, and Botswana (Sub-Saharan Africa)	Topic: Treatment programs on childhood cancer and blood disorder Method: Distance-based education of the HOPE Program	Moodle and computer notebooks are used to store course materials. The evaluation comprises written pre- and post-tests, as well as Zoom and WhatsApp teaching sessions.	36 Pediatric Oncology Nurses	The success of this distance-based learning program highlights the necessity of formal training for nurses in low- and middle-income countries who want to work full-time as pediatric cancer nursing experts.
	Joo et al (2020)	The Pacific islands most commonly Fiji, the Solomon Islands, India, Republic of Marshall Islands, and the Federated States of Micronesia (FSM).	Topic: Basic and advanced course that focuses on the oral health effects of areca nut and betel quid Method: Online course and A follow-up study	the Pacific Open Learning Health Net (POLHN)	33 Health Workers	Participants praised the POLHN seminars on the hazards of betel quid and areca nut for their high quality and relevance to their profession. POLHN is the first platform in the Pacific to provide a betel quid and areca nut course, and it has the potential to be replicated abroad.
	Aventurado (2019)	A Selected Hospital in Cebu, Philippines	Topic: E-learning Self-efficacy	Computer, internet/online, and software use self-efficacy are sub-domains of the Modified E-learning Readiness Assessment Tool (MERAT).	31 Operating Room Nurses	Despite staffing and competency shortages, the findings of this study suggested that e-learning initiatives might be used to supplement operating room nurse education and training.

No	Author (Year)	Location	Topic & Method	Media/Platform	Target	Result and Recommendation
	Hosey, Kalula and Voss (2017)	17 Countries in East, Central, and Southern Africa	Topic: Establishing an online continuing and professional development library Method: A mixed-methods approach	The online survey, desk review, gap analysis, and participatory approaches, PowerPoint, and PDF material options.	68 Nurses and Midwives	National certification will be aided by access to an online CPD library. Interest areas, access issues, and limitations in the delivery and content of CPD nursing and midwifery education. There were 23 different topics to choose from. Because the most significant barrier to CPD completion in the region was a lack of staff, online CPD content was investigated.
	Sajwani et al (2019)	Pakistan, Afghanistan, and Tajikistan	Topic: Evaluation of an online course on e-health in developing countries Method: A mixed-method study	A year-long online course on e-Health from the Aga Khan Development Network Digital Health Resource Center	20 doctors, nurses, e-Health coordinators, and IT professionals. Seven-course facilitators also participated in the study.	The study found a considerable increase in the level of knowledge among participants, as well as an overall good assessment of facilitation, administration, content, methodology, and technology by the participants.
	Albrechtsen et al (2017)	Turkey (General/ Undefined)	Topic: Diabetes - a global challenge Method: A six-week course that consists of reading materials, video lectures, and multiple-choice questions.	Massive Open Online Courses (MOOCs) of Coursera, online-based questionnaire (nine sections) software (Survey Monkey), email invitations were sent out using a Coursera based database	845 Health Professionals (medical doctors, researchers, nurses, and medical students)	In comparison to health care professionals from developed regions, participants from developing countries had a greater impact on their clinical practice. MOOC-based medical education is promising in terms of offering accessible and free research-based education to health professionals in both developing and developed countries, according to self-reports from course participants.
	Bendezu-Quispe et al (2020)	Peru	Topic: Massive open online courses in health and nursing for continuous education. Method: The courses were divided into five categories by the Peruvian College of Nurses, which recognizes five nursing specialties.	Coursera, edX, FutureLearn, XuetangX and Udacity, Class Central and MOOC List	Nursing Professionals	Given the large range of courses available, including some specialized for nurses, Massive Open Online Courses could be a great instrument for continuing education for Peruvian nurses. The course's content is primarily in English. Expanding the number of languages or subtitles available would allow a bigger audience to participate.

No	Author (Year)	Location	Topic & Method	Media/Platform	Target	Result and Recommendation
	Parulla et al (2020)	Brazil	Topic: Development open online course on "Nursing Assessment" Method: Experience report of the construction of a free course	the Lúmina platform, Email, and social network	693 Participants with 73 nurses	The steps of its development were theme selection, course creation, preliminary assessment, and the launch of the first edition. The course is designed to support in-class teaching as well as health professionals' continuing education.
	Yoshino et al (2018)	Mongolia	Topic: Nursing and other professionals working in maternity and child health can benefit from a web-based learning and continuing education program. Method: An online anonymous survey	Web-Based using "in-country network" which belongs to the Ministry of Health	356 people (317 nurses, 17 midwives and 9 Feldsher.	The web-based continuing education program was highly welcomed, according to the results. New knowledge and skills, such as establishing new clinical standards and manuals and improving training methods, were extensively disseminated and adapted into local contexts. Following the intervention, participants' job satisfaction increased.
	Warugaba et al (2016)	Rwanda	Topic: Experience a Massive Open Online Course	MOOC Platform Coursera	38 Participants (research-related & healthcare professionals)	For implementing MOOCs into capacity-building initiatives in resource-limited locations to maximize the potential of online learning.