

Introduction and roll-out of self-learning App for midwifery during the COVID-19 pandemic and its sustainability in Cambodia

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Abstract: Similar to other countries, coronavirus disease (COVID-19) pandemic significantly impacted not only the ability of midwives to deliver high quality maternal care, but also their ability to access professional development opportunities, including in-service training in Cambodia. In response, we developed a Cambodian version of Safe Delivery App (SDA), aligned to Cambodia's clinical guidelines. The SDA is a free digital job aid and learning platform for skilled birth attendants developed by Maternity Foundation that works offline and is used in more than 40 countries after adapting to the country context. In the year and a half since its launch in June 2021, SDA has become established in Cambodia, with more than 3,000 people, accounting for nearly half the number of midwives in Cambodia, downloading and using it on their devices, and 285 people having completed its self-learning modules. The review of the introduction process revealed that publicity on the professional association's social networking sites, in-person in-depth hands-on training, and troubleshooting in a managed social networking group were useful in promoting the use of the application, and that the Continuing Professional Development Program accreditation has been a strong motivator for completing the self-study program. On the other hand, the COVID-19 pandemic has led to increased use of digital tools, but it is important to prevent the expansion of the digital divide when implementing new digital tools, including SDA.

Keywords: Safe Delivery App, self-learning digital tool, continuous professional development, COVID-19, sustainability, digital divide

Introduction

Cambodia is recognized as one of the few countries that have achieved the Millennium Development Goals related to maternal and child health, and has made significant improvements in maternal and child health-related indicators in the past (1). However, the results of the latest Demographic and Health Survey show that while there has been significant improvement in child health-related indicators such as neonatal deaths, the maternal mortality rate has remained stagnant, which has been recognized as a challenge (2). As the health facility delivery rate has reached 97.5% and the Skilled Birth Attendance rate has reached 98.7%, the need to address quality of service is beginning to be recognized for further improvement.

In Cambodia, one of the main strategies to improve maternal and child health services has been to increase coverage of Emergency Obstetric and Newborn Care (EmONC) facilities (3), and a review conducted in 2020 showed that coverage is improving, although gaps

remain (4). On the other hand, evaluations of Skilled Birth Attendance practices in Cambodia reported that they were not always consistent with evidence-based guidelines (5,6), indicating an urgent need to improve the knowledge and skills of Skilled Birth Attendance.

A review of factors that influence the provision of intrapartum and postnatal care by skilled birth attendants in low- and middle-income countries found that many factors, including access to training and supervision; staff numbers and workloads; salaries and living conditions; and access to well-equipped, well-organized healthcare facilities with water, electricity, and transport, were found to have a significant impact on the quality of care (7). Thus, in Cambodia, EmONC and other training programs on intrapartum and postnatal care had been actively conducted (8). Japan International Cooperation Agency (JICA), has been supporting human resource development in maternal and child health in Cambodia through technical cooperation projects, and had been implementing a project to strengthen perinatal care with a focus on neonatal care since 2016 (Table 1).

Table 1. Project Design Matrix of "Project for Improving Continuum of Care with focus on Intrapartum and Neonatal Care in Cambodia"*Overall Goal*

Reduce the neonatal mortality at target provinces

Project Purpose

Continuum of Care with focus on intrapartum and neonatal care is strengthened at target provinces

Outputs

1. Training and supervision on Intrapartum and Immediate Newborn Care (INC) for MNCH staff is strengthened.
2. Management of sick newborns and preterm/low birth weight (LBW) infants is improved.
3. Follow-up for neonates (especially those showing danger signs) is strengthened.
4. Health systems, which are essential to improve Continuum of Care for better MNCH services, are strengthened
5. Findings, lessons learned and evidence for MNCH services focused on intra-partum and newborn care are reflected on national policies/strategies/guidelines.

Period of Project: 6 years (from May 2016 to May 2022). Project Site: National Maternal and Child Health Center (NMCHC), Kampong Cham Province (KCM) and Svay Rieng Province (SVR). Target Group: Health Professionals working for intrapartum and newborn care services in NMCHC, KCM Province and SVR Province.

However, the coronavirus disease (COVID-19) pandemic has led to restrictions on face-to-face training programs (9). Therefore, we decided to work on the development and rollout of a Cambodian version of Safe Delivery Apps as a digital tool to enable midwives to continue to strengthen their capacity during the COVID-19 pandemic. The purpose of this study is to describe and analyze the process, with a focus on sustainability.

Materials and Methods

Development of Cambodian version of Safe Delivery Apps

The Safe Delivery App (SDA) is a digital tool developed by the Maternity Foundation, the University of Copenhagen and the University of Southern Denmark that provides healthcare workers (HCWs) with access to evidence-based and up-to-date clinical guidance based on WHO guidelines (10). It can be used as self-learning tool, training material, and job aid, and consist of videos, action cards, MyLearning platform for self-directed learning, and drug information. The material consists of 13 modules, including COVID-19, Normal Labour and Birth, Active Management of Third Stage of Labour, Prolonged Labour, Postpartum Hemorrhage, Maternal Sepsis, Neonatal Resuscitation, and Newborn Management. It is used in more than 40 countries around the world, and evaluations of its effectiveness have demonstrated its effectiveness in improving healthcare worker knowledge and skills (11-13). It is available in global versions in French, English, Arabic and Portuguese and has been adapted into numerous national versions translated into local languages and aligned with national clinical guidelines, but there was no Cambodian version. Therefore, we developed Cambodian version of the SDA in Khmer language in with collaboration with Maternity Foundation, as part of JICA's technical cooperation project activities (14).

In developing the Cambodian version, a committee

of Cambodian experts was established at the National Center for Maternal and Child Health to review the Cambodian translation of the script of the global version in light of the national guidelines. The committee held a series of meetings to check all educational videos, action cards, and drug lists one by one, and to revise scripts based on drugs available in the site and diagnostic criteria in national guidelines, and to correct errors in Khmer translations. After the final Cambodian script was approved by the Ministry of Health, the audio of the video lectures was recorded and provided to the Maternity Foundation for integration into the application. Finally, the Cambodian version was officially launched in June 2021 and is available for free download from both Google and Apple app stores.

Data collection and assessment

The SDA aggregates user data to monitor usage including user profiles, daily downloads, MyLearning usage, and other information. We collected and analyzed the data from the dashboard on the number of downloads of the SDA Cambodia version and the number of MyLearning users who had completed the final Champion Certificate exam from the official launch in June 2021 to November 2022. We also have compiled our reflections from the app development and rollout process, including the factors both challenging and promoting usage.

Results and Discussion

The number of downloads of the Cambodian version of the SDA since its official launch on June 3 is shown in Figure 1. The first few months after the launch were the highest in terms of average downloads, thanks in part to an online workshop held on June 9 to which all provincial health departments were invited and which was shared by the Midwives Association on its social networking group. In several states, voluntary workshops and other events were held, which also played a role in the rollout of the SDA. In addition, as a JICA technical

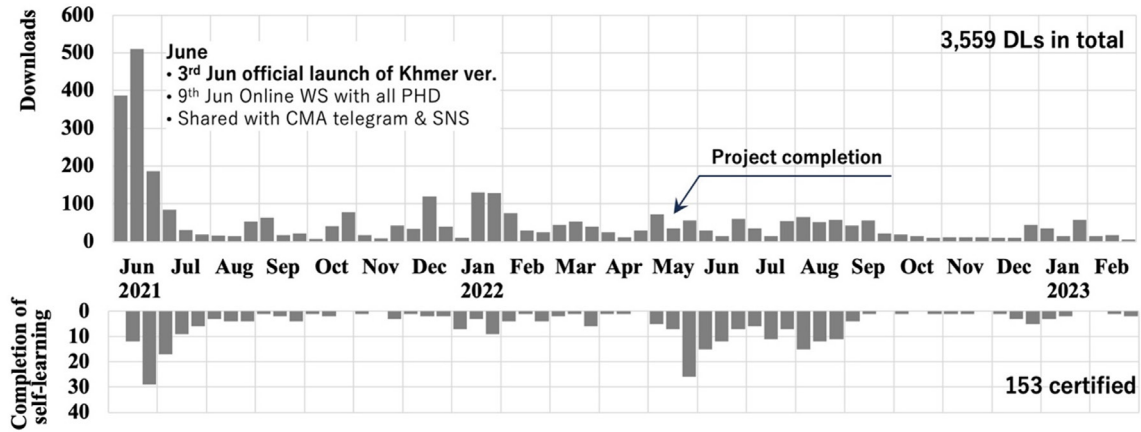


Figure 1. Number of downloads of Safe Delivery App and number of people who certified successful completion of self-learning in Cambodia.

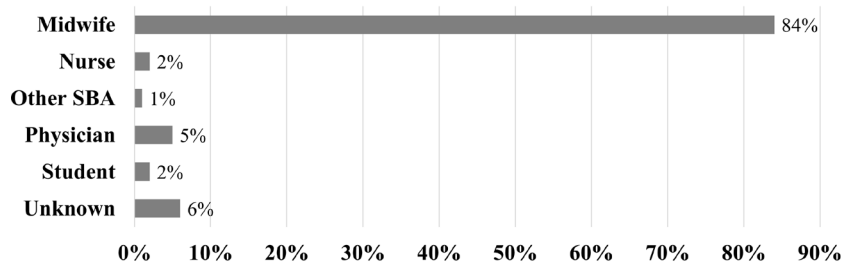


Figure 2. User profile – Profession. SBA, Skilled Birth Attendant

cooperation project, face-to-face induction training was conducted for all midwives at the National Center for Maternal and Child Health and for all midwives in the two provinces that were the target of the activities. In addition, there are 18 midwifery training schools in Cambodia, 6 public and 12 private, and the project conducted face-to-face induction training for teachers at 7 of these schools.

The project ended in May 2022, but downloads continued to average 3 per day thereafter. Finally, as of 25th February, 2023, a total of 3,559 downloads were observed. According to WHO's Global Health Workforce statistics database, there were approximately 7,000 midwives in Cambodia in 2019 (15). Figure 2 shows the SDA users profile, most of whom are midwives, indicating that nearly half of all midwives in Cambodia have downloaded the SDA. Many of them also work in primary health care facilities. Follow-up by the project found that the app is being used as a teaching tool for in-service training, such as Midwifery Coordination Alliance Team (MCAT) meetings, and for self-learning as part of Continuing Professional Development Program for license renewal, as well as being used for pre-service education, such as midwifery students.

In addition, the number of people who successfully completed the final Champion Certificate in the MyLearning platform, since its official launch on June

3 is shown in Figure 1. The number of SDA certificate holders has also been consistently and continuously increasing. As of 25th February, 2022, 302 people had completed the certificate exam. Among those, 153 were certified after the project ended in May 2022, indicating that it is becoming a well-established self-study tool in Cambodia.

Collaboration with Cambodia Midwifery Association and careful support for introduction

Following the official launch of the app, the most effective intervention in promoting the use of the app was that undertaken by the Cambodian Midwives Association (CMA) who publicized the app on their own social networking group. The CMA is a professional association of midwives with more than 5,000 members that also provides training to strengthen the capacity of midwives (16). It is registered as one of the training providers for Continuing Professional Development program, which is described below, and since the COVID-19 pandemic, it has also been conducting online training via Zoom. The Chairperson was also a member of the technical committee in developing the application and was active in promoting the application and its influence on the membership was significant.

In addition, as mentioned above, the project has

conducted in-person hands-on introduction training as well as providing online materials when introducing the application. Identifying SDA champions who were well versed in the use of the application, as well as including it in pre-graduate education at midwifery training schools, were also effective strategies in promoting its use.

To overcome technical challenges faced when the application was first introduced, we created an SNS group for troubleshooting, appointed an administrator, and set up a system to teach each other. We feel that this has been effective in terms of both promoting and sustaining utilization.

Continuing Professional Development Program

In January 2021, Cambodia enacted a Continuous Professional Development (CPD) Program for five professions – physicians, dentists, nurses, midwives, and pharmacists – linked to registration with the Professions Council and to renewal of their licenses every three years in order to improve their skills (17). As a result, the five health professions are now required to register with the Professions Council and present a record of attendance at a training program approved by the Professions Council at the time of their license renewal every three years.

For midwives, the Cambodian Midwives Council has issued guidelines and begun reviewing training programs to approve the CPD points required for license renewal, with 60 CPD points required over a three-year period for license renewal (18,19). The review is based on detailed regulations, including training content, the organization conducting the training, and the experience of the instructor. The basic formula is 1 point for 1 hour of study. In regards to the SDA, the National Maternal and Child Health Center, which is a medical institution and also a national maternal and child health administration and educational institution, also has responsibility for implementing the SDA in Cambodia. It applied to the Cambodian Midwives Council for CPD points to be awarded to midwives who successfully complete the final exam within the MyLearning platform. As a result, Cambodia Midwifery Council has approved the granting of 20 CPD points to those who have completed all 13 modules of MyLearning and passed the Champion Certificate exam.

The CPD program appears to have motivated healthcare professionals to learn (20), and the accreditation of CPD points seems to have been a key driver.

Lesson Learnt

Eighteen months since the launch of SDA Cambodian version, constant downloads are continuing to be observed and nearly half of all registered midwives have downloaded the app, strongly suggesting that the tool has

become popular in Cambodia beyond "early adopters".

While the impact of COVID-19 promoted the use of digital tools, alongside this there is also a growing concern about the digital divide (21,22). There are significant disparities in IT literacy and other skills among healthcare professionals, and differences are beginning to emerge in opportunities for skill and career advancement with those with high IT literacy able to access more opportunities, while those with low IT literacy are inhibited (23,24). The "gray digital divide", especially as it relates to older people, is often observed in our activities and requires careful support (25).

Conducting in-person hands-on training to introduce digital tools has been effective in overcoming this digital divide. For example, while many participants easily downloaded the app, they often encountered difficulties in registering as a user, which is required to obtain a MyLearning completion certificate. In particular, many medical professionals do not use e-mail, and some had difficulty in obtaining an e-mail address which is required for registration, so it was necessary to create educational materials on obtain a free e-mail address. This insight was also reinforced through the face-to-face training sessions.

The flexible nature of the MyLearning platform means that midwives can undertake learning independently in their own time, which may address some of the issues that have been observed with conventional face-to-face training, such as midwives needing to take time away from service delivery to attend trainings and regional disparities in training opportunities. In addition, compared to in-person training, training costs, such as daily allowances and travel expenses for participants and instructors can be reduced and the same training can be used repeatedly as long as the guidance is not changed. On the other hand, there are many limitations compared to face-to-face hands-on training in terms of acquiring practical skills. Some reports indicate that online training is comparable to face-to-face training in terms of knowledge and skill development (26-28). However, further research is required to explore and document of the unique characteristics and benefits of each training method.

Conclusion

In Cambodia, the Safe Delivery App has become established as a self-learning tool for midwives, continuing beyond the COVID-19 pandemic. Engagement with the SDA has been driven in large part by its accreditation as part of the Continuing Professional Development Program accreditation by the Cambodian government. Additionally, promotion of its use has been further facilitated by its promotion by professional associations through social media, in-person in-depth hands-on training, and troubleshooting in managed social networking group. Such careful support is especially

important when introducing new digital tools, including SDA, to avoid widening the digital divide.

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