

App improves knowledge, skills in neonatal resuscitation in workers in Ethiopia

June 20 2016

A mobile app improved knowledge and skills in neonatal resuscitation in health care workers in Ethiopia but it did not significantly reduce perinatal mortality, according to the results of a randomized clinical trial published online by *JAMA Pediatrics*.

The [perinatal period](#) is a most critical time for survival of a child. The three major causes of [perinatal deaths](#) are preterm birth complications, intrapartum asphyxia (oxygen deprivation) and infections. High [perinatal mortality](#) rates are associated with a lack of quality antenatal, obstetric and early neonatal care. Neonatal resuscitation is emergency care that all skilled birth attendants must provide. Training helps workers handle the complexity of emergencies but barriers can prevent access to this training by many rural [health care](#) workers. Solutions that use mobile phones (mHealth) could help overcome some of these challenges.

Stine Lund, M.D., Ph.D., of the University of Copenhagen, Denmark, and coauthors examined the effects of the safe delivery app (SDA) on perinatal survival and on the knowledge and skills of health care workers in five rural districts of Ethiopia.

The SDA trains rural health care workers in low-income countries on how to manage obstetric and neonatal emergencies, including how to ventilate a newborn needing resuscitation, by using animated videos and local language voiceovers.

The clinical trial included 3,601 pregnant women and 176 health care

workers. There were 73 [health care facilities](#) assigned to the mobile phone intervention or standard care. The main outcome measured was perinatal death, defined as a stillbirth or an early neonatal death on or before the seventh day after birth. Overall, there were 3,102 children born alive, 41 stillborn and 60 who died within the first seven days of life.

The authors report the SDA was associated with a statistically insignificant lower perinatal mortality rate of 14 per 1,000 births in the intervention compared with 23 per 1,000 births in the control group. However, skill and knowledge scores of health care workers improved after six and 12 months, according to the results.

The authors note their study findings are limited by location and population.

"The implications of this study are that mobile phone interventions, such as the SDA, should be considered to improve the ability of [health care workers](#) to provide quality of care during emergencies and to reduce perinatal mortality. ... The results are highly relevant, particularly in low-income countries where quality of care is challenged by lack of continuing education programs. More research is needed in effects on clinical outcomes and large-scale implementation in resource-limited settings," the article concludes.

"Lowering the staggeringly high rates of maternal and neonatal deaths in low-income countries is a global responsibility that demands innovative solutions, including digital ones that, in theory, could make an important difference. The SDA is by no means the only mHealth intervention for which good evidence exists, but these are still exceptions, and the authors of this study should be commended on the approach they have taken and the potential for this to scale and transfer elsewhere," writes Claudia Pagliari, Ph.D., F.R.C.P.E., of the University of Edinburgh

Medical School, Scotland.

More information: *JAMA Pediatr.* Published online June 20, 2016.

[DOI: 10.1001/jamapediatrics.2016.0687](https://doi.org/10.1001/jamapediatrics.2016.0687)

JAMA Pediatr. Published online June 20, 2016. [DOI:](https://doi.org/10.1001/jamapediatrics.2016.1010)

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Provided by The JAMA Network Journals

Citation: App improves knowledge, skills in neonatal resuscitation in workers in Ethiopia (2016, June 20) retrieved 6 May 2024 from

<https://medicalxpress.com/news/2016-06-app-knowledge-skills-neonatal-resuscitation.html>

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