New mobile app has the potential to revolutionise asthma management

April 1 2016

Asthma is a major public health concern, affecting one in 10 Australian adults. While there is no cure, asthma can be effectively managed. Asthma management is particularly important during pregnancy. The risk of pre-eclampsia, foetal growth restriction, preterm birth and the need for caesarean delivery are all recognised risk factors for asthmatics during pregnancy.

A group of multi-disciplinary researchers from Monash University's
Centre for Medicine Use and Safety, the School of Public Health and Preventive Medicine, and Electrical and Computer Systems Engineering have developed a new telehealth program called MASTERY (management of asthma with supportive telehealth of respiratory function in pregnancy) and tested via a randomized controlled trial. The MASTERY program, supported by the Monash Research Impact Fund, can help pregnant women monitor their asthma regularly, effectively and in partnership with their primary healthcare providers. The MASTERY telehealth program, involves the use of a mobile phone based Breathe-easy application to record asthma symptoms and medication usage. Breathe-easy users are supported by a handheld respiratory device that measures lung capacity and lung function. This data is securely transmitted to a central server where participants, health care professionals and researchers, can securely view the respiratory data. The program has been shown to improve both asthma control and asthma-related quality of life.

Dr Johnson George from the Centre for Medicine Use and Safety at Monash University said "women who achieve effective asthma control during pregnancy have a greater chance of a healthy outcome for them and their baby".

"Asthma control is more effective if the patient takes an active role in its management. The app helps patients manage their asthma through the provision of education, support, remote monitoring, instant feedback and telephone follow ups," Dr George said.

According to the study, published in Respirrology, the validity of lung function data obtained by the program using the handheld respiratory device is comparable to that of the data obtained in clinics or respiratory laboratories. Daily remote monitoring of the lung function makes it easier for health care professionals to address any worsening symptoms. Breathe-easy provides users with daily and weekly feedback regarding
their asthma status - if their asthma control status is poor, the application recommends users to make changes in their treatment and/or contact their health care professional.

Effective management of asthma through a telehealth program could have major short and long term public health benefits. Not only does the program have the potential to influence health policy and improve health outcomes for pregnant women and their babies, it also has the capacity to be used by others in the community who suffer asthma and other respiratory conditions. The Breathe-easy app could be made widely applicable for routine clinical use, particularly for those with chronic respiratory issues.

**More information:** Telehealth to improve asthma control in pregnancy: A randomized controlled trial. DOI: 10.1111/resp.12773

Provided by Monash University

Citation: New mobile app has the potential to revolutionise asthma management (2016, April 1) retrieved 7 January 2024 from https://medicalxpress.com/news/2016-04-mobile-app-potential-revolutionise-asthma.html

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