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Wired mothers - use of mobile phones to improve maternal and neonatal health in Zanzibar

Background: Mobile phone use is expanding rapidly in Sub-Saharan Africa, amounting to more than 500 million users at present and it is estimated that one-half of all individuals in remote African areas have a mobile phone. As a result of the obvious potential to reach large population groups and strengthen health systems, the use of mobile phones in health care, is emerging. Antenatal care and delivery care have the potential to reduce maternal morbidity and improve newborns' survival but attendance has decreased in Sub-Saharan Africa and the quality of care is a concern. The interest to use mobile phones to promote reproductive health is not yet reflected in research evidence.

Aim: The study aims to examine the impact of use of mobile phones for health care on antenatal care attendance and skilled delivery attendance through an intervention called "wired mothers". Wired mothers are pregnant women linked to a primary health care unit through use of mobile phones where they receive standard sms reminders for care appointments and are able to call the primary provider in case of problems.

Methods: The study is a pragmatic cluster-randomised controlled trial with primary healthcare facilities in Zanzibar as the unit of randomisation. Two thousand five hundred and fifty pregnant women (1,311 interventions and 1,239 controls) who attended antenatal care at one of the selected primary healthcare facilities have been included at their first antenatal care visit and followed until 42 days after delivery. Twenty-four primary health care facilities in six districts have been randomized to either mobile phone intervention or standard care. The intervention consists of a SMS and mobile phone voucher component. Primary outcome measures are antenatal care attendance and skilled delivery attendance. Secondary outcome measures are tetanus vaccination, preventive treatment of malaria, gestational age at last antenatal care visit, and ante partum referral.

Results: The mobile phone intervention seems to be associated with an increase in skilled delivery attendance: 60% of the women in the intervention group versus 47% in the control group delivered with skilled attendance. The intervention has produced a significant increase in skilled delivery attendance amongst urban women (OR 5.73), but has not reached rural women. The mobile phone intervention is also associated with an increase in antenatal care attendance. Forty-four percent of the women in the intervention group versus 31% in the control group are receiving four or more antenatal care visits as recommended in national guidelines (OR 2.39). There seem to be a trend towards improved timing and quality of antenatal care services across all secondary outcome measures although not statistically significant.

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