Effect of home visits and mobile phone consultation on maternal and newborn care practices in Uganda: a community intervention trial

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Study location-Uganda
Background

• Maternal mortality still high; newborn mortality stagnated

• Home visits CHWs are recommended for improving maternal and newborn care

• Evidence from India, Pakistan, Ghana that home visiting is possible with promising results

• On-going work in Uganda with promising results

• Home visits occur far from professional health workers

• CHWs are semi-skilled minimal knowledge

• We combined home visits with mobile consultations
Intervention

- CHWs made home visits to households of pregnant women
- CHW and Health workers were equipped with mobile phones
- CHWs provided educational messages for maternal and newborn care
- CHWs used mobile phones to consult health workers for advice
Objective

To assess changes in maternal and newborn care practices of home visits made by community health workers combined with mobile phone consultation
Methodology

Â Pragmatic Community intervention trial

Â Randomised 16 health centres to control and intervention arms (8 HCs in each arm)

Â In the intervention arm-5 CHWs assigned per health centre

Â Eligibility-pregnant women gestation age 28 weeks/less

Â No exclusion criteria

Â Blinding was not necessary
Methods-Recruitment

- Eligible women provided consent
- Personal files were opened
- Background socio-demographics recorded
- CHW made three home visits (2 prenatal; 1 immediate postnatal)
**Intervention package**

- Information package during home visit-
  - First visit-importance of antenatal care attendance, nutrition
  - Second visit-birth preparation-materials, finances, transport
  - Recommended newborn care practices
  - Third visit-within 3-7 days of delivery to check on mother & newborn

- CHW consults with professional health worker on phone in case of doubts or problems

- Control arm- routine antenatal care at health centre
Data collection & analysis

- Two phases of data collection

- Qualitative –
  - Latent content analysis using Nvivo

- Quantitative - 1,385 (control=758; intervention= 627)

- Analysis-intention to treat-epidata-stata –random effects

- Included in the model=age, religion, education, ethnicity
Analysis

Â Primary outcomes-maternal
   ï completed antenatal visits,
   ï birth preparation, health facility delivery,

Â Primary outcomes-Newborn
   ï care-seeking for newborn illness,
   ï thermal care,
   ï hygienic cord care & exclusive breastfeeding
## Results-quantitative

<table>
<thead>
<tr>
<th>Indicator</th>
<th>control</th>
<th>intervention</th>
<th>uOR(95%CI)</th>
<th>P-value</th>
<th>aOR</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANC visit</strong></td>
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<tr>
<td>0-2</td>
<td>218(28.8)</td>
<td>92(14.7)</td>
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<tr>
<td>3/more</td>
<td>540(71.2)</td>
<td>535(85.3)</td>
<td>2.31(0.73-7.26)</td>
<td>0.152</td>
<td>2.32(0.71-7.55)</td>
<td>0.163</td>
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<td><strong>Delivery place</strong></td>
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<tr>
<td>Home/TBA</td>
<td>540(72.4)</td>
<td>74(12.3)</td>
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<tr>
<td>Health facility</td>
<td>206(27.6)</td>
<td>529(87.7)</td>
<td>13.9(3.9-49.3)</td>
<td>&lt;0.001</td>
<td>14.1(4.32-45.90)</td>
<td>&lt;0.001</td>
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<tr>
<td><strong>Thermal care</strong></td>
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<tr>
<td>Inadequate</td>
<td>608(82.1)</td>
<td>185(30.8)</td>
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<tr>
<td>adequate</td>
<td>133(17.9)</td>
<td>416(69.2)</td>
<td>5.89(1.45-24.01)</td>
<td>0.013</td>
<td>5.92(1.55-22.65)</td>
<td>0.009</td>
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</tbody>
</table>
## Results quantitative

<table>
<thead>
<tr>
<th>Indicator</th>
<th>control</th>
<th>intervention</th>
<th>uOR(95%CI)</th>
<th>p-value</th>
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<th>p-value</th>
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</thead>
<tbody>
<tr>
<td><strong>Cord care</strong></td>
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<tr>
<td>Unclean</td>
<td>530 (71.5)</td>
<td>246 (40.9)</td>
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<tr>
<td>Clean</td>
<td>211 (28.5)</td>
<td>355 (59.1)</td>
<td>3.05 (1.61-5.78)</td>
<td>0.001</td>
<td>3.13 (1.67-5.86)</td>
<td>&lt;0.001</td>
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<tr>
<td><strong>Breastfeeding &amp; pre-lacteal feeds</strong></td>
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<tr>
<td>Inappropriate</td>
<td>255 (34.4)</td>
<td>196 (32.6)</td>
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<tr>
<td>Appropriate</td>
<td>486 (65.6)</td>
<td>405 (67.4)</td>
<td>1.09 (0.55-2.15)</td>
<td>0.809</td>
<td>1.06 (0.51-2.22)</td>
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<td><strong>Birth preparation</strong></td>
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<tr>
<td>Inadequate</td>
<td>600 (79.2)</td>
<td>302 (48.2)</td>
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<tr>
<td>Adequate</td>
<td>158 (20.8)</td>
<td>325 (51.8)</td>
<td>2.70 (0.87-8.35)</td>
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<td>2.59 (0.81-8.30)</td>
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<td><strong>Newborn care seeking</strong></td>
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<tr>
<td>Untimely</td>
<td>72 (37.5)</td>
<td>21 (13.5)</td>
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<td>Timely</td>
<td>120 (62.5)</td>
<td>135 (86.5)</td>
<td>3.57 (1.12-11.47)</td>
<td>0.032</td>
<td>3.57 (1.12-11.47)</td>
<td>0.032</td>
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</tbody>
</table>
Discussion/conclusion

• Study highlights benefits of combining home visits with mobile phone consultations-maternal and newborn care-seeking

• Systemic problems must be addressed-attitudinal problems with CHWs, absent health workers

• Collaboration/synergies between CHWs and professional health workers strengthened

• Proof of concept-larger trial to measure mortality and cost-effectiveness
Thanks to

- Institute of Tropical Medicine-Antwerp
- The School of Public Health-Makerere University
- Respondents for this study-women, health workers, CHWs