ICT AND MATERNAL HEALTH CARE IN INDIA: ASSESSING FACILITATORS AND BARRIERS

JACQUELINE BROERSE
ATHENA, VRIJE UNIVERSITEIT AMSTERDAM

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SCIENCE, TECHNOLOGY AND SOCIETY

• Science and technology important contribution to economic growth, improved health and living standards
• But also ethical concerns and negative consequences for people and environment
• And mismatches:
  – Lack of innovation development for certain problems
  – Vulnerable groups in society adopt innovation less often
• More attention for appropriateness

Athena Institute: Study and design of interfaces between science and society to understand key factors in innovation processes and improve research utilization
Facts and Figures
• 289,000 maternal deaths in 2013
• 99% of deaths occurred in developing countries

Causes related to three delays in accessing health care:
• In *decision to seek care*: low status of women, poor understanding of complications and risks, previous poor experience with health services, traditional beliefs, financial implications
• In *reaching care*: distance to health centres, availability and cost of transportation, poor roads and infrastructure
• In *receiving adequate health care*: poor facilities, lack of medical supplies, inadequately trained staff, inadequate referral system
mHEALTH

Rationale behind mHealth in maternal health:

- Delays in decision-making ($1^{st}$) and reaching the facility ($2^{nd}$) are complex to tackle
- mHealth can strengthen timely response of women and health care workers, a.o. by increasing access to information

Evidence base of mHealth limited – often fail to scale-up

Recent mHealth review (Chib et al, 2015) found:
- Poor focus in research on *Adoption and Appropriateness* of mHealth interventions
• Case management tool for Community Health Workers – Sahiyyas
• Developed by NEEDS with support of SIMAVI
• Works on Java enabled phones
• Contains registration forms, checklists, danger sign monitoring, and educational prompts
Pregnant women should receive 2 tetanus injections. There should be difference of one month between first and second injection. This protects you and your baby from Tetanus.
MOBILE FOR MOTHERS PROJECT, JHARKHAND, INDIA

- **Start Pilot Implementation (36 Questions):** 2011
- **Development 2nd version (100 Questions):** 2013
- **Start 2nd version Implementation:** 2015

Baseline Impact Study

End Pilot Implementation
PROJECT OBJECTIVES

• To improve *information and referral services* of Sahiyyas to pregnant women
• To increase the *knowledge level* and *health seeking behaviour* of pregnant women, leading to higher uptake of essential health services during and after pregnancy
• To improve *collection of essential health indicators* related to safe motherhood
What are facilitators and barriers with regard to Mobile for Mothers? What are the experiences of Sahiyyas and beneficiaries?
CONCEPTUAL FRAMEWORK

Inputs
- Resources
  - Staff
  - Materials

Outputs
- Activities
  - Implementation
  - *Recruitment
  - *Training
  - *Monitoring
  - *Support
  - Maintenance
- Participation
  - Reach
  - Exposure
  - *Initial use
  - *Continued use

Outcome
- Performance of Sahiyyas
  - Opportunity Producer
  - Capabilities Enhancer
  - Social Enabler
  - Knowledge generator

CONTEXTUAL FACTORS
- Technology level – infrastructure, economic, technological and socio-cultural
- Sahiyya level – community, economic, environment, and health system
Observations

Interviews and group discussions conducted between March-October 2015

- Pregnant Women (12 group interviews (n=34), semi-structured interviews (n=13))
- Sahiyyas (semi-structured interviews (n=20), questionnaire (n=57))
- Husbands
- Health professionals
- Field workers
- NGO and government staff
All 376 recruited Sahiyyas underwent 2-day MfM training. Conducted in accordance with the training module. Disrupted by electrical problem and noise in the venue.

- Focused on typing on the mobile – difficult for many Sahiyyas
- 26.8% – satisfaction level in the survey
IMPLEMENTATION OF MfM

Monitoring of MfM Usage

MfM usage problems detected, but not solved
1. Data submission – flaw in MfM, no network
2. Empty phone battery – constant power interruptions
3. Lack of phone credits – no recharging station

Support

Interviewed Sahiyyas were satisfied
73.2% – Satisfaction level

Satisfaction

✓ 95% reported MfM had improved maternal health in their village
✓ 96% recommended MfM to other Sahiyyas
• Improvement in work productivity through *time efficiency* (not so much in terms of monetary incentives)

> The paper should be sent and we also have to go, then we had to Xerox them. *Now, in less time and less expense, by sitting at home, we do our work.*
• Improved *task handling skills* (98.1%) and increased *confidence* (81.5%)

“[...] due to mobile, there is more courage to work. I gain more confidence due to getting MfM.”
SOCIAL ENABLER

- Enhanced *communication* between sahiyyaaas, healthcare providers and the community,
- More *trust* from women and fellow villagers
  - **83.3%** – from women and fellow villagers
  - **90%** – women trust and follow instructions better

“Before, there was some distance, but now, when we talk and sit together with mobile, it brings us closer.”
• Improved access of community health workers to medical health information, solving the inadequate knowledge issue

“In the middle, we were also missing some information, but mobile also made us knowledgeable of tetanus and also how to sleep before [during pregnancy].”

“Now, we do not depend anymore on doctors and nurses to get information.”
MECHANISMS IN RELATION TO WOMEN BENEFICIARIES

Planned intervention → Actual intervention

Context (C)
Mechanisms (M)

Intended outcome and impact of Mobile for Mothers

Actual outcome and impact of Mobile for Mothers (O)

Information is better understood, because Sahiyya can better explain (incl. ‘voice’)

Knowledge is increased, because they are more interested and listen better

Compliance is enhanced, because they trust Sahiyyas more and feel monitored
SUGGESTIONS FOR IMPROVEMENT

From village women:
• More content covered by voice
• More and larger pictures
• “Do not do this” — topics
• More information about delivery

From sahiyyas:
• Better training
• Better network connectivity
• More reliable power supply
• Better access to recharging station
CONCLUSION & DISCUSSION

mHealth benefits (1) the performance of CHWs and (2) women’s knowledge on maternal health in India

**But impact on health outcomes?:**

More referrals? Less complications?

Currently conducting quantitative assessment