A Mixed Methods Study: Utilization of Mobile Health Technology in Improving Knowledge and Health Seeking Behavior of Pregnant Women

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WHAT WE LEARNED

With the continuous growth and penetrance of mobile technology (mHealth), there is sustained interest in understanding if mHealth is effective in achieving it's goals.

Our results showed that women in the intervention group performed significantly better on outcome measures of maternal health knowledge and uptake of services than those in the control or quasi-control group.

The results of the research study highlight that the inclusion of mobile technology in existing programs, in this case the Community health worker program, can lead to improved maternal health knowledge and uptake of services.

BACKGROUND

The Intervention: Mobile for Mothers (MfM)
- MfM is a case management solution designed for Community Health Workers (Sahiyyas), in Deoghar district, Jharkhand state, India

- Each Sahiyya was equipped with an inexpensive phone running a free software that contains registration forms, checklists, danger sign monitoring, and educational prompts.

- The mobile phones were utilized during Sahiyya home visits to pregnant women.

OBJECTIVES

- The objective of the larger research study was to answer the questions, does Mobile for Mothers work, for who and how; from the perspective of various stakeholders.

- This presentation focuses on answering the question does Mobile for Mothers work, from the perspective of mothers.
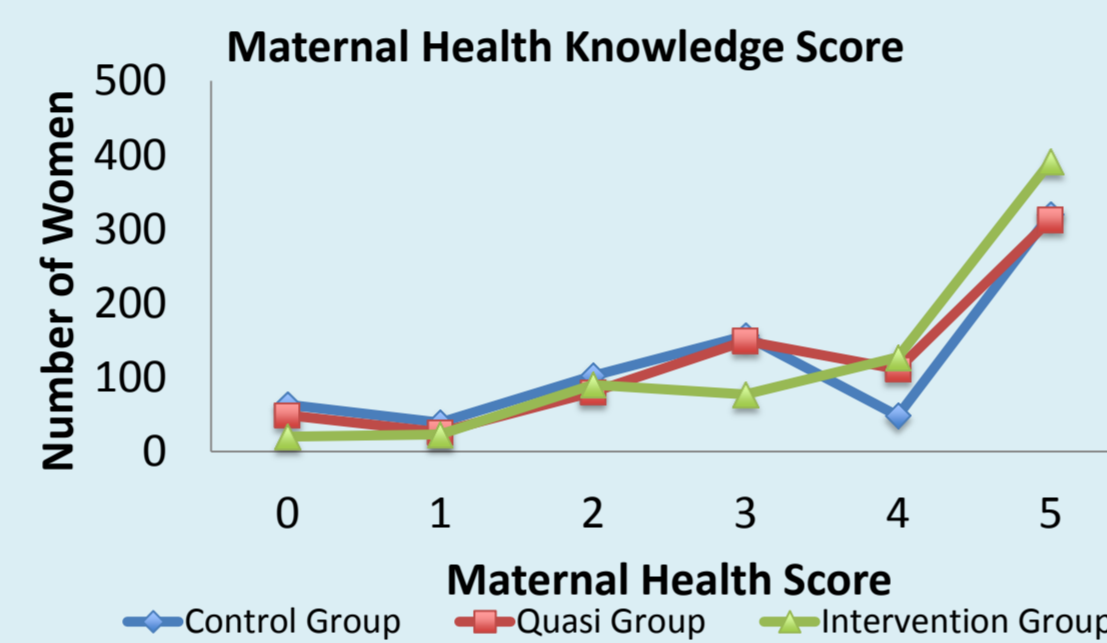
METHODS

Study Design: Cross-sectional quasi-experimental study

	Control Group	Quasi- Control Group	Intervention Group
Component	Government Interventions	Government Interventions + NGO Interventions	Government interventions + NGO Interventions + MfM
Data	Quantitative	Quantitative	Mixed Methods: Quantitative + Qualitative
Sample size (n)	770	770	Quantitative: 770 Qualitative : 30
Sampling Method	Multi stage cluster sampling approach	Multi stage cluster sampling approach	Multi stage cluster sampling approach Purposive Sampling
Selection Criteria	Female : 15-49 years Delivered a baby in the last 12 months	Female : 15-49 years Delivered a baby in the last 12 months	Quantitative Female : 15-49 years Delivered a baby in the last 12 months Qualitative: Participated in the MfM intervention

The three major outcome variables of the project were:
- Maternal Health Knowledge
- Antenatal Attendance
- Delivery at health facilities.

RESULTS

Maternal Health Knowledge Score

Total Number of Antenatal Care Visits Attended

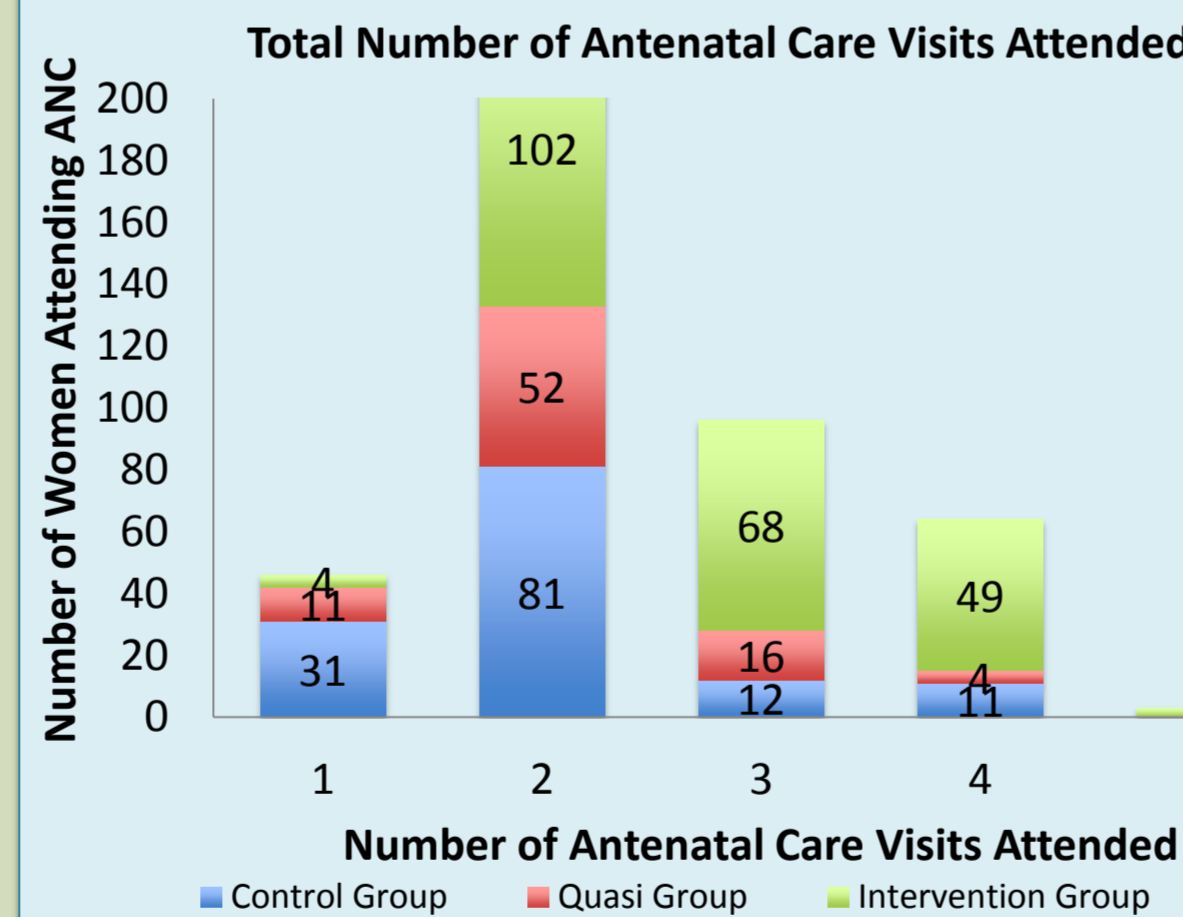**Delivery at Health Facility Among Survey Participants**

**Maternal health knowledge was measured on 5 concepts associated with the main research outcomes including: importance of visit ANC visits, reasons for tetanus injections and danger signs during delivery.

The odds of higher knowledge levels in the intervention group was 1.26 times (1.18- 1.3, p >0.01) the odds of higher knowledge levels in the control-group and 1.18 times (1.10- 1.27, p >0.01) the odds of increasing knowledge compared to the quasi-control group.
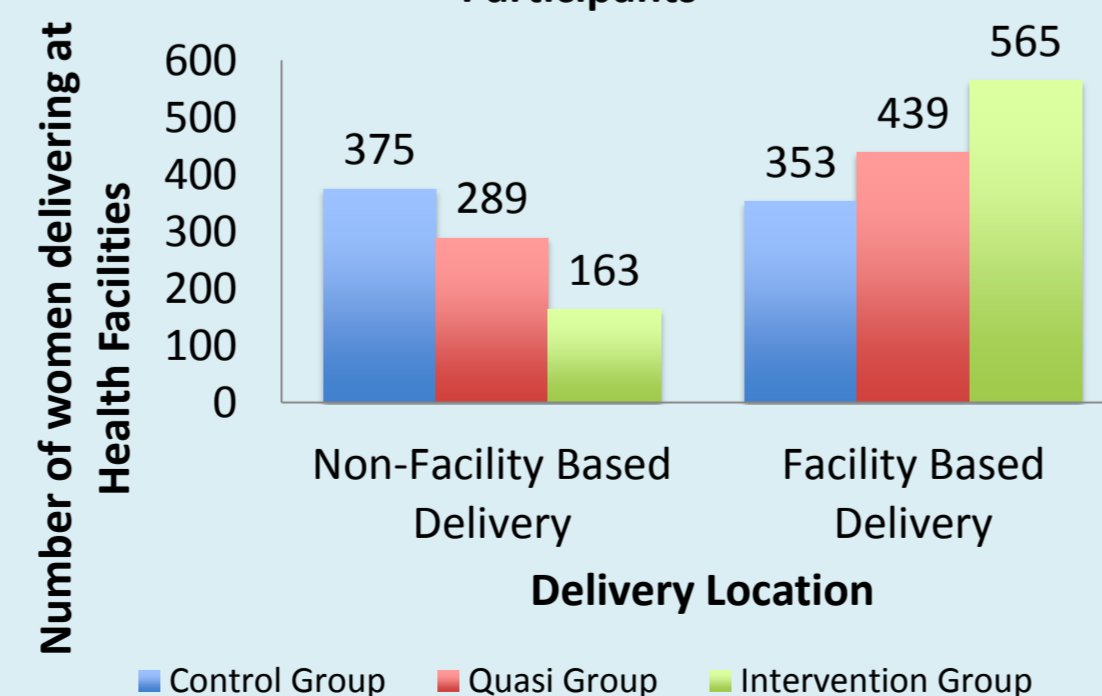
"I get the knowledge that taking medicine is necessary, it is necessary to measure the blood pressure and if we do the check-ups in every month then we will get to know that the child is increasing or not, we should get good food. So this kind of knowledge I get to know. There are many other things." (Female participant, 19 years)

Women in the intervention group were more likely to have attended between two and four ANC visits than those in the control and quasi control group (p>0.01)

"The difference is that at that time I took only injections but this time I hear all the voices and after seeing its pictures (on the phone)…and if we do the check-ups in every month then we will get to know that the child is increasing or not" (Female participant. 22 years)

Women in the intervention group were 4 times more likely to deliver at a health facility than women in the control group(OR: 3.68 , CI:2.94- 4.63, p >0.01). Women in the intervention group were also 2 times more likely to deliver in a hospital facility than women the quasi-control group (OR:2.28 , CI: 1.82- 2.87, p >0.01)

She (Sahiyya) said to go to hospital for delivery. She said me you know how the world is now days "Baby born with diseases like jaundice…" (Female participant, 22 years)

CONCLUSION

- While controlling for variables such as age of women, educational status and caste, women in the intervention group had significantly better outcomes than women in the control and quasi-control groups.

- It is important to note that women in the quasi-control group also performed better than the control group. This shows that the effects of the NGO interventions alone are beneficial to the community but the inclusion of MfM leads to an improvement.

- In qualitative interviews, women had mostly positive experiences with the intervention but raised general concerns with health services, transportation and decision making autonomy related to their maternal health.

Reflections

- The results from this intervention study show that mHealth can have positive effects on individual level factors affecting maternal health uptake.

- However, past research has highlighted that poor maternal health service uptake has multiple components, with health system factors playing an important role.

- A change in the current mHealth intervention model is required in order to fully harness the potential of this tool

SPONSORS

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