

Assessing the Impact of Mobile-based Intervention on Health Literacy among Pregnant Women in Urban India

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Introduction

Every year, more than a fifth of the half million global maternal deaths occur in India.¹ In 2012-13, almost half of the pregnant women in Mumbai received complete antenatal care (ANC) including three ANC visits, one tetanus toxoid injection and 100 iron folic acid supplements.² Over 2/3rd of the pregnant women (15-49 years old) in Mumbai suffer from anemia. Only 69.2% of the children under 2 years of age received complete immunizations as recommended by the World Health Organization.³

Methods

This quasi-experimental study involved a single group, pre-post evaluation design. Of the 400 women recruited at Lokmanya Tilak Municipal General Hospital, 247 responded to the follow-up survey at 9 months. The intervention through Project mMitra was a free mobile voice call service that sends timed and targeted preventive care information messages directly to the mobile phones of enrolled women throughout pregnancy and infancy in their preferred language and time. The messages were developed by expert group of physicians from FOGSI (Federation of Obstetrics and Gynaecological societies in India), IAP (Indian Association of Pediatrics), and NNF (National Neonatology Forum) and modified based on focus groups studies. For this study, the voice messages included information regarding anemia and nutrition during pregnancy, breastfeeding, and immunization. The baseline and follow-up surveys were conducted by research staff to assess women's awareness and understanding of health care during pregnancy and infancy. Chi square tests were performed to compare the changes in health literacy.

Results

At baseline, only half of the women had their own mobile phones, whereas over a third used a family member's phone. A majority of women were skilled in receiving calls but only 56% knew how to send a text message. The proportion of women aware that iron folic acid supplementation is to be taken for ideally 100 days ($p < 0.01$) and minimum 90 days ($p < 0.01$) improved significantly after the intervention. Awareness regarding ideal duration for exclusive breastfeeding ($p < 0.01$) and importance of colostrum ($p < 0.01$) also improved drastically. Almost 97% of women were aware about the importance of immunization during pregnancy upon follow-up compared to the 61% at baseline. About 93% respondents were aware about immunization schedule during infancy during the follow-up compared to 71% at baseline. Over 95% of the respondents were satisfied with the frequency, timeliness and relevance of the voice messages.

Discussion and Conclusion

This study demonstrates the feasibility and value of delivering mhealth messages to pregnant women in order to improve health literacy regarding preventive care during pregnancy and early childhood in urban India. One of the major limitations for this study is the potential for respondent bias. We have attempted to overcome this shortcoming by adopting the randomized controlled trial design in future studies.

References

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