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# ICT Based Interventions for Anganwadi Healthcare Workers in Mumbai

Biju Thankachan<sup>1</sup>, Sumita Sharma<sup>1</sup>, Markku Turunen<sup>1</sup>, Juhani Linna<sup>1</sup>, Heli Väättäjä<sup>2</sup>, Reinier Kortekaas<sup>3</sup>, Tom Gross<sup>4</sup>

<sup>1</sup>TAUCHI, University of Tampere, Tampere, Finland

<sup>2</sup>Tampere University of Technology, Tampere, Finland

<sup>3</sup>Siemens Healthineers, Germany

<sup>4</sup>University of Bamberg, Germany

## Abstract.

Anganwadi workers [1] form the core of healthcare system for a large section of rural and semi-urban population in India. They provide care for newborn babies and play an important role in immunization programs, besides providing health related information to pregnant women. Traditionally these Anganwadi workers use paper based information leaflets as a part of their job to spread awareness among the people. Although mobile phones have made their inroads into the day to day life of these workers for basic communication (making a call), however it is yet to be seen how a mobile device is being used as a technological aid for their work. There are enormous challenges in addressing these issues especially in developing regions owing to numerous reasons such as illiteracy, cognitive difficulties, cultural norms, collaborations, experience and exposure, motivation, power relations, and social standing [2]. The purpose of this field visit would be to enquire the role of mobile devices in their day-to-day work; and if being used as a technological intervention, then in what manner and form is it being used? The methodology used to conduct the study would involve contextual enquiry, open-ended interviews and observing the Anganwadi workers using ICT solutions and other informational artefacts.

**Keywords:** low-literate users, emergent users, healthcare workers, ICT4D, HCI4D, Anganwadi, Mitansins.

## 1 Project Description

Anganwadi worker are involved in spreading healthcare information, contraceptive counselling and nutrition education in rural and urban areas across India. We have been conducting a similar study with Mitansins [3] (Community Healthcare Volunteers in Chhattisgarh State), who can be considered as counterpart of Anganwadi workers in the state. As both Mitansins and Anganwadi workers have a similar job profile (like door-to-door household visits to spread health and nutrition related information), it would be interesting to study what and how technological interventions are being used by the Anganwadi workers in their work life; for example, to observe how a mobile

phone is used to spread information and educating people. As many of these volunteers are low literate (both Anganwadi workers and Mitans), heavily text based ICT solution for them would be futile. This study would provide us with valuable information as to how they use mobile devices, what applications are being used, how they make sense of the written material/information. Interactive videos, animations (instead of paper leaflets) and simple games related to health and nutrition could be used to educate the mothers of new-born babies and children. This in turn would help us in developing text free user interfaces for low literate users. Novel and innovative adaptation of technology by one user groups could be easily adapted by the other groups, and would provide insight on developing newer solutions.

### 1.1 Methodology

One-day field visit to interact with the Anganwadi workers of Mumbai.

- Contextual Enquiry, Semi-structured Interviews (open ended), Observations.
- Data would be collected as field notes, and audio recorders with permission, as well as photos and video-clips are shot in case the participants agree to capture their device use and relevant other informational or other artifacts used.
- Quick comparison and juxtaposing the profiles of Mitans and Anganwadi workers.
- Observing the ICT interventions being used.
- Probably, a rapid prototyping, or at least paper/sketch solution.

### 1.2 Expected Outcomes

Based on the above study, we will analyze and gain insight on the differences and similarities between Anganwadi workers and Mitans, and what ICT interventions are being used by them? We would analyze, what approach and solutions used by one group could be successfully used/adapted by the other and what opportunities arise for novel solutions to be developed? Although currently, mobile devices are seldom used for spreading health related information by Anganwadi workers/Mitans, yet in the days to come, it is expected that these devices will be adopted for educating people. Our focus is on using mobile devices is to understand how these devices can act as a tool in educating and spreading information to the general population. We are also in the process of collaborating with the stakeholders in the government, so that new interventions developed through this research.

## 2 Team

The team consists of *Prof. Markku Turunen*, Head of the Masters Programme in Human-Technology Interaction, the Speech-Based and Pervasive Interaction Research

Group and the India Network at the University of Tampere. He is also the principal research investigator for the INCEPT India project.

**Prof. Heli Väättäjä** who is involved in the INCEPT India project from the Tampere University of Technology.

**Doctoral Student Biju Thankachan** whose focus is on developing text-free user interfaces for low-literate users, for societal impact.

**Researcher Juhani Linna** who focuses on the in varying industry and societal contexts, from a sustainable business perspective.

**Researcher Sumita Sharma**, whose doctoral thesis work on designing novel interactive educational application for under-served Indian children aligns with the study.

**Reinier Kortekaas** is involved with user interface designer at Siemens Healthineers, Germany.

**Tom Gross** is professor and chair of Human-Computer Interaction at University of Bamberg, Germany. He is the official representative of Germany in the TC.13 on Human-Computer Interaction of IFIP.

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