Contraception and mobile reproductive health services in India: an intervention study on mHealth

Minna Säävälä, Arundhati Char and Sangita Kulathinal
(08.01.2016, last updated 30.07.2016)

Contents
- Introduction
- Aims of the study
- Study design and methods
- Sampling: selection of villages and study subjects
- Survey tools
    - Questionnaire for married men and women (English and Marathi)
    - Questionnaire for unmarried adolescents (English and Marathi)
- Implementation of the study
- Acknowledgements

Introduction
The research study examines men's and women's experiences and desires with regard to family planning and contraceptive services, in order to help improve sexual and reproductive health service access and availability by developing a mobile-connect.

Aims of the study
The study aims to understand people's perceptions on using mobile technology to discuss about, and get linked to, family planning and sexual and reproductive health services. Further, the study aims at understanding whether there is an increase in the use of family planning methods based on counseling through a call centre (which is referred as mHealth service) after its introduction in the area.

Study design and methods
Study design. An intervention study is designed to achieve the above aims and targeted at rural and tribal areas. Two similarly profiled districts, Thane and Nashik of Maharasthra state, India are chosen for the study. The study design aims to widen the call centre facility to more remote parts of the intervention district, Thane, where the call centre has already been set up and is operational for three years (December 2013 onwards) in one block, Shahpur of the same district. Nashik is the adjacent district which is a comparable non-intervention area and is the control group for the study. While the call centre has been running in since December 2013 in the rest of Shahpur which is also supported with inter-personal campaigns (IPC) and mid-media campaigns (MMC) on issues pertaining to sexual and reproductive health/family planning (SRH/FP) and broadcasting the call centre number, Khardi area having 29 villages has had no such specific intervention of IPC and MMCs.
Study method. An interview-based baseline survey has been planned in March 2015 in both the study areas, in order to gather data on knowledge, attitudes and practices related to reversible contraceptive methods, needs related to sexual and reproductive health and willingness to accept the mHealth services. After the baseline survey (in June-July, 2015), a call centre providing counseling and information on the use of reversible contraception (focusing on spacing methods)

and also any issues related to reproductive and sexual health will be set-up in the intervention area of Thane district, supported by IPC and MMC.

To assess the impact of such mHealth services, a follow-up survey is planned in September 2016. The follow-up survey will be conducted a little over a year after the availability of mHealth services in the intervention area. The follow-up survey will be conducted in Thane as well as in Nashik areas. Nashik will not receive any such services and hence, any changes observed could be due to influences external to the intervention for example, the traditional government intervention. The change in sexual and reproductive health and rights (SRHR) in Thane before and after the intervention, and Nashik will be detected. Part of the change in the Thane intervention area may be due to general socio-economic and health service changes and not necessarily due to the mHealth services. Nashik study (baseline and follow-up) will provide a depiction of changes in SRHR that has taken place even without intervention. Changes in the control area between baseline and follow-up data provide the level of general change in SRHR that will be controlled in the analysis of change in the intervention area. Thus, we will be able to show the actual impact of mHealth services on SRHR, after controlling for general change in the area. For direct assessment of the impact of mHealth services, efforts will be made to reach the same study subjects who will be interviewed in the baseline survey. At the end of the intervention, the service statistics register data will be analysed to determine the frequency with which various topics of the sexual and reproductive health issues were asked according to sex and age.

Apart from the project impact assessment, the survey data can be used for studying fertility preferences, contraceptive patterns and decision making thereof, as well as other issues related to SRHR in the study population.

Sampling.
Target population: Married men and women in the age group of 15-35 years, and unmarried adolescent boys and girls in the age group of 15-19 years.

Sample size: From each study area, 100 married men and women each and 50 adolescent boys and girls, each. The sample size is determined based on the availability of funds and feasibility of carrying out the survey.

Sampling plan: Sampling is carried out in three stages in both study areas. The first stage involves selection of a primary health centre (PHC), the second stage is selection of villages, and the third stage is selection of households.

Stage 1: selection of PHC
One PHC per study area is selected. The selection criteria for PHC are: i) mostly tribal population, ii) no influence of industry and any other family planning program except the governmental programs, and iii) convenience of travelling.

Based on the above criteria, Khardi PHC area from Shahpur in Thane district, and Khed PHC area from Igatpuri in Nashik district are selected.

```
                    ┌─────────────────────────┐
                    │   mHealth sampling plan  │
                    └─────────────────────────┘
                                 │
                  ┌──────────────┴──────────────┐
                  ▼                             ▼
STAGE 1   ┌──────────────────┐        ┌──────────────────┐
          │ Thane /Shahpur/  │        │ Nashik/Igatpuri/ │
          │   Khardi PHC     │        │     Khed PHC     │
          └──────────────────┘        └──────────────────┘
                  │                             │
STAGE 2   ┌──────────────────┐        ┌──────────────────┐
          │   Selection of   │        │   Selection of   │
          │     villages     │        │     villages     │
          └──────────────────┘        └──────────────────┘
                  │                             │
STAGE 3   ┌──────────────────┐        ┌──────────────────┐
          │   Selection of   │        │   Selection of   │
          │    households    │        │    households    │
          └──────────────────┘        └──────────────────┘
```
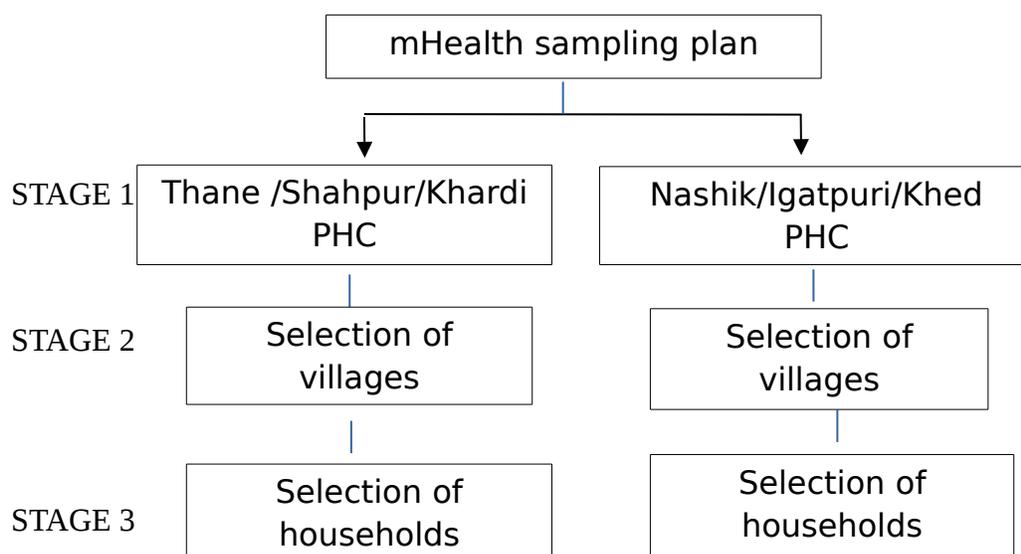
Stage 2: selection of villages under the selected PHC

The number of villages with over 500 population under the selected PHC in the two study areas, Khardi and Khed are 21 each. Since the sample size is 100 per target population, we have restricted the number of villages to 10 (about 50% of the total villages). Ten villages are randomly selected from each selected PHC using systematic sampling with a random start. The process for selection of the villages is as follows –

- Arrange the villages in ascending population sizes (from lowest to highest).
- Ten villages are to be selected out of 21 or 22 villages (with at least 500 population).
- Every 2nd village is selected after starting randomly (using random number start) under the systematic sampling since the ratio is $21/10 \approx 2$.

Selection of villages from Khardi PHC area, Shahapur taluka, Thane: starting from a random start 7, the villages selected are 7, 9, 11, 13, 15, 17, 19, 1, 3, 5 (Table 1). Selection of villages from Khed PHC area, Igatpuri taluka, Nasik: The random starting point is 4, and every second village is selected. Selected villages are marked with * in the Table 2.

Stage 3: Selection of households

The number of men and women to be selected from each village is 10 each, while the number of adolescents is 5 boys and 5 girls per selected village. This is because 10 villages are selected and the target sample sizes are divided by 10. From each sampled village, about 30 households are selected to recruit 10 each of men, women, and adolescents (5 boys and 5 girls). The households are selected using the left hand rule. One house is selected randomly as the starting point and then the second house on the left of that house is selected next, and so on. Only one respondent per household is recruited for the study. If a household has an eligible subject of each target population then one is selected randomly. For example, a selected household has an eligible man, woman and an adolescent girl. One of these three is selected randomly (say a woman). The next household also has similar eligible subjects then either a man or a girl is selected.

Table 1: List of villages from Khardi PHC area in Shahpur block of Thane district.
(Sampled villages are marked with *)

No	Village name	Population		
		total	men	women
1*	Balwandi	510	256	254
2	Kukambhe	538	274	264
3*	Varaskol	539	288	251
4	Umbarkhand	559	295	264
5*	Pendhari	575	288	287
6	Jarandi	627	320	307
7*	Dhamani	642	330	312
8	Kanvinde	652	320	332
9*	Palshin	739	373	366
10	Talwada	746		
11*	Pendharghol (N.V.)	932	602	330
12	Belwad	987	493	494
13*	Sakharoli	1001	494	507
14	Ambivali	1166	555	611
15*	Kalamgaon	1237	678	559
16	Lahe	1471	774	697
17*	Dalkhan	1551	764	787
18	Tembhe	1772	864	908
19*	Dahigaon	1798	899	899
20	Birwadi	4308	2249	2059
21	Khardi	4707	2484	2223

Table 2. List of villages, number of households, population, scheduled tribe population, and literates from Khed PHC area, Igatpuri taluka, Nashik. (* indicates the selected villages for mHealth study)

No.	Village name	No. HH	Population			Scheduled tribe			Literate		
			total	men	women	total	men	women	total	men	women
1*	Sherawadi	103	513	265	248	495	257	238	303	182	121
2	Ramnagar	125	615	306	309	607	304	303	433	246	187
3	Ghodewadi	113	617	315	302	617	315	302	384	211	173
4*	Maidara Dhanoshi	160	870	453	417	691	358	333	599	375	224
5	Manjargaon	177	889	453	436	864	438	426	548	322	226
6*	Sonoshi	187	934	489	445	877	461	416	665	385	280
7	Bambalewadi	189	1100	547	553	1073	533	540	758	429	329
8*	Adsare Kh	212	1102	560	542	712	366	346	739	423	316
9	Rahulnagar	236	1106	548	558	1082	537	545	613	352	261
10*	Taked Kh	220	1120	582	538	541	282	259	732	434	298
11	Indore	323	1591	817	774	1473	758	715	1036	586	450
12*	Barshingave	374	1649	823	826	1049	525	524	1055	592	463
13	Khadked	267	1778	900	878	1695	860	835	1158	644	514
14*	Pardeshiwadi	289	1820	933	887	1513	763	750	1208	688	520
15	Khed	361	1973	999	974	427	223	204	1345	753	592
16*	Kanadwadi	338	2132	1089	1043	1778	911	867	1104	663	441
17	Wasali	459	2141	1056	1085	1989	978	1011	1434	817	617
18*	Ambewadi	380	2183	1111	1072	1808	931	877	1180	691	489
19	Adharwad	388	2193	1088	1105	620	295	325	1496	845	651
20*	Taked Bk	406	2389	1303	1086	1476	814	662	1887	1109	778
21	Adsare Bk	511	2837	1444	1393	2736	1397	1339	1825	1054	771

Survey tools

This study will use quantitative research tools by way of a questionnaire for data gathering. A detailed questionnaire is developed keeping in mind the objectives of the study. Specifically in the married people's questionnaire, besides the background socio economic and demographic details, the study tool contains questions on mobile phone ownership and use, union status and hygiene practices, KAP about family planning, children and decision making, current fp use, intent for further use, and a contraceptive tracking sheet showing dynamics of contraceptive use among each selected men and women.

The questions asked to adolescents focused more on knowledge levels, and access of information and services pertaining to SRH and HIV, besides their mobile phone access and use. Questions to adolescent girls also included menstrual health and hygiene practices.

Annexe 1 gives the details of the baseline questionnaire for both married and adolescent study participants.

Consent. A written consent is obtained from the respondents after explaining the need for the study. They are assured that responses will be used only for study purposes and will be kept highly confidential at all times. If the respondent happens to be below 18 years of age then a written consent is obtained from a parent or a guardian.

Implementation of the survey

Local organisations. U-Respect Foundation (http://www.urespect.org), a non-governmental organisation (NGO) based at Mumbai will be responsible for implementing the study in the intervention area Shahpur. After the baseline survey, the NGO will expand its existing program of call-centre to the study area. This NGO has experience from a reproductive mHealth project, *An ecosystem to achieve high contraceptive prevalence rates among rural communities – An integrated family planning mhealth model*. Vachan (http://www.vachan.co.in), a NGO based at Nashik will be responsible for implementing the study in Igatpuri area.

Training of the surveyors. A team of surveyors always include both a man and woman. A man and an adolescent boy are interviewed by a man while a woman and an adolescent girl are interviewed by a woman. When possible, the interviews are conducted in private without anyone's presence. All questionnaires are translated in Marathi.

Training of the surveyors. A three day intensive training will be organised in Shahpur for investigators belonging to both the Shahpur and Igatpuri teams. Question by question training will be given in the local language (Marathi). On the third day of the training, each of the investigators (six from Shahpur and eight from Igatpuri) will be sent to the villages not included in our sample, to carry out mock interviews, at least one of married and unmarried respondents. They will be again brought back to the training centre after half a day and all their queries with regard to actual field work and data collection will be discussed. The two supervisors, one from each team will also be trained on sampling and selection of households, and checking of questionnaires including the need to check for range and consistencies between questions.

Timing of the baseline survey. The idea is to involve both school going and out-of-school adolescents, and to ensure this, the timing of the interview will be adjusted.

Timing of the follow-up survey. The follow-up survey is envisaged in the same area among the same respondents in Sept-Oct 2016. The same methodology will be used to keep both data sets (baseline and follow-up) comparable.