

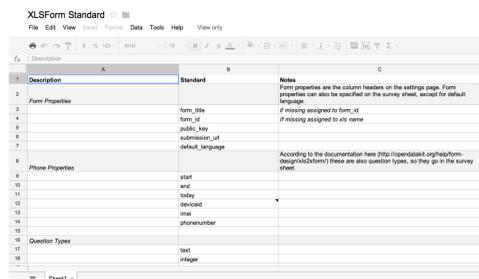
Acceptability of data collection on mobile phones using ODK software for self-administered sexual behaviour questionnaires

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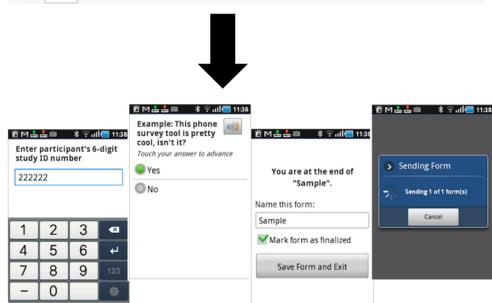
BACKGROUND

Previous studies in Africa and Latin America have shown that conducting surveys with mobile devices saves time and money compared to traditional pen-and-paper surveys. Studies have also shown that audio computer-assisted self-interviewing (ACASI) yields better data quality in sexual behaviour surveys than face-to-face interviews. Open Data Kit (ODK) is a free, open-source application for building, collecting and managing data using Android-enabled phones or tablets. Like ACASI, ODK enables complex skip patterns, multi-language implementation, multimedia (audio, photos, diagrams, etc), collection of GPS coordinates and secure web-based data storage.



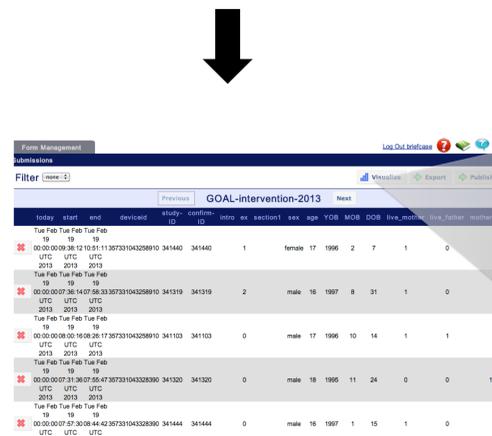
1. Design survey

Forms are built in XML but tools like XLSForm help lay users design surveys. Forms can be designed in Microsoft Excel or with user-friendly web tools such as ODK Build and converted to XML for use on ODK.



2. Collect data

ODK Collect renders questions, screen by screen, through prompts on the Android device and can save the submission at any point.



3. Analyse & manage data

ODK Aggregate provides secure data storage and export in local servers or the cloud.

METHODS

Two sexual behaviour surveys were conducted on mobile phones using ODK: one with adolescents in Cape Town and Port Elizabeth, South Africa (n=4485, median age = 15 years, 146-item questionnaire); the other with male members of adult football teams in Bulawayo, Zimbabwe (n=672, median age = 25 years, 77-item questionnaire). Groups of participants completed the questionnaire simultaneously on Samsung Galaxy Gio mobile phones (approximate cost = R1150) with the SIM card removed, that were provided by the study. The surveys were confidential, with participants being identified only by a study ID number. Ten focus group discussions (FGDs) were conducted with participants and survey teams to assess acceptability. Participants were asked survey questions related to their comfort, understanding, and honesty with survey items on a 5-point likert scale: e.g., "How well do you feel you understood the questions on the survey?" ("Not at all" to "I understood all questions") as well as whether they preferred this method of questionnaire administration (note: participants did not complete a comparison paper-based questionnaire). On all questions, participants were given the option to select "I do not want to answer". Non-response rates were analysed for selected sensitive questions asked on both questionnaires.



Secondary school learners in Khayelitsha, Cape Town complete ODK surveys.

RESULTS

No cases of distress were observed during data collection. FGDs found that the participants and facilitators were comfortable and engaged when using the mobile phones. There was a strong feeling that using the mobile phone provided increased privacy and confidentiality when answering sensitive questions, compared to self-administered paper-based sexual behaviour surveys.

"I felt comfortable and I was happy. It was like talking to someone that I trust."

– Female GOAL Trial participant; Port Elizabeth, South Africa

"I was honest with all the questions because I know no one will read my answer and I get private."

– Male GOAL Trial participant; Port Elizabeth, South Africa

"What I liked about this process is it's private and confidential. You're the only one on the phone."

– Male MCUTS Coach; Bulawayo, Zimbabwe

In all, 4015 (78.1%) participants reported preferring the mobile-phone-based survey to pen-and-paper survey, while 716 (13.9%) reported preferring pen-and-paper. Low non-response was observed in both studies for reported HIV testing (SA: 2.7%; Zim: 1.8%), condom use ever (SA: 8.7%; Zim: 2.0%), and previous STI experience (SA: 8.1%; Zim: 2.6%).

Table 1: Study information and acceptability (n=5157)

Item	Overall		South Africa		Zimbabwe	
Survey information						
Participants	5157		4485		672	
Survey Items			146 items		77 items	
Median Age			15 years		25 years	
Survey preference						
	n	%	n	%	n	%
Prefer phone	4015	78.1	3441	76.8	574	86.8
Prefer paper	716	13.9	665	14.8	51	7.7
No preference	410	7.3	374	8.4	36	5.5
Non-response						
	n	%	n	%	n	%
Ever tested for HIV	132	2.6	120	2.7	12	1.8
Ever used a condom	211	7.4	200	8.7	11	2.0
Ever had an STI	213	7.1	189	8.1	14	2.6
Acceptability						
	Mean	SD	Mean	SD	Mean	SD
Reported understanding*	3.4	1.4	3.3	1.5	4.1	1.1
Reported comfort*	3.6	1.5	3.5	1.5	3.9	1.4
Reported honesty*	3.6	1.4	3.5	1.4	4.3	1.1

* On five-point Likert scale

CONCLUSIONS

Capture of data about sexual behaviour on mobile phones using ODK had high acceptability among both South African adolescents and Zimbabwean men. Non-response rates were lower and acceptability was higher in the Zimbabwean study than in the South African study, perhaps due to participant demographic differences such as age and sex or the differences in questionnaire length (South Africa's was nearly twice as long) or sensitive content (South Africa's contained questions related to depression, alcohol use, and intimate-partner violence that were not asked in the Zimbabwe study).

A limitation was that participants' reported survey preferences were hypothetical, as they did not complete equivalent questionnaires on paper. Further research should compare acceptability, cost, time duration, non-response rates of an ODK survey with an equivalent survey using traditional pen-and-paper methods, well established survey tools such as ACASI, and other phone-based data capture software such as Mobenzi, Episurveyor, and/or FrontlineSMS Forms.

Researchers conducting sexual behaviour surveys should consider self-administered data collection on mobile phones using ODK software.

ACKNOWLEDGEMENTS

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