

Exploring the experiences of using iPads for data collection in a pan-Canadian study

Background

The advancements in communication technology and health information have been explosive since the outset of the 21st century. Stakeholders at every level of healthcare, from front-line clinicians to patients to health researchers stand to yield huge gains by keeping a finger on the “technological pulse”. Translating Emergency Knowledge for Kids (TREKK) has taken on this spirit of innovation by incorporating the use of iPads as a medium for data collection. TREKK is a multiphase study spanning 35 sites across 9 Canadian provinces and 1 territory with the aim of determining the knowledge needs of parents of children seeking emergency care and health care professionals in general Emergency Departments (EDs). An iPad “app”/ electronic survey was developed and customized in order to deliver an interactive survey, designed to collect data offline and upload the data to a central server once a wireless connection is established.

As the use of iPads for data collection is a pioneering methodological step, the Needs Assessment team undertook the investigation of the experiences of those using the iPad “app” first-hand, ie: the data collectors involved in the TREKK project. It was hypothesized that engaging with these data collectors would provide not only a platform for self-reflection and feedback regarding the research process but could also yield insight as to streamlining the process should iPads be used similarly in future studies. This led the team to develop a project to answer the following research question:

Research Question

What are the experiences of data collectors involved in a national, large-scale study using iPads as a medium for data collection?

Method

In keeping with the philosophy of the seminal TREKK study, the goal was to create an engaging, accessible and convenient means of gathering data regarding the experiences of using iPads as a data collection tool. “Fluid Surveys”, an online software program, was selected to develop a multilingual and anonymous survey. The content of the survey was theoretically informed on the basis of a small scale review of previous studies employing devices for data collection as well as the National Institutes of Health’s “Usability Guideline” (a framework used to develop highly usable health websites). The survey underwent several iterations; face validity and construct validity were determined through team meetings and the survey was also piloted within the research team prior to being sent to participants.

Inclusion criteria for participants (i) hold a data collection role within the TREKK project and (ii) have collected some data in the TREKK study. Exclusion criteria (i) held another role within the TREKK project or (ii) had not yet been involved in active data collection. Recruitment was completed by sending the survey link to eligible participants via e-mail. Reminders were sent to those who had not completed the survey prior to the submission deadline.

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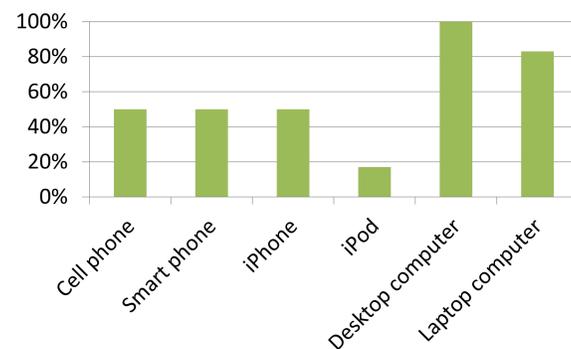
Findings

In order to yield rich and descriptive data, three main areas of inquiry were outlined related to the participant’s experiences in the TREKK project. Demographic information related to proficiency and comfort level with technology, amount of research experience, features of the iPad in relation to the data collection process and the quality of the training sessions provided were all of particular interest.

Participant Demographics

6 of a potential 8 respondents participated in our survey.
Years of research experience: Excluding graduate student experience, 1 respondent had over 5 years of experience in research; 3 had between 1-5 years and the remaining 2 had less than 1 year of experience.
Areas of research experience: 4 respondents stated they had experience in project coordination; 3 had experience in data collection and 1 had experience in data analysis
Length of time collecting data with TREKK project: 3 respondents for each- less than 1 month; 1 to 3 months and 3-5 months

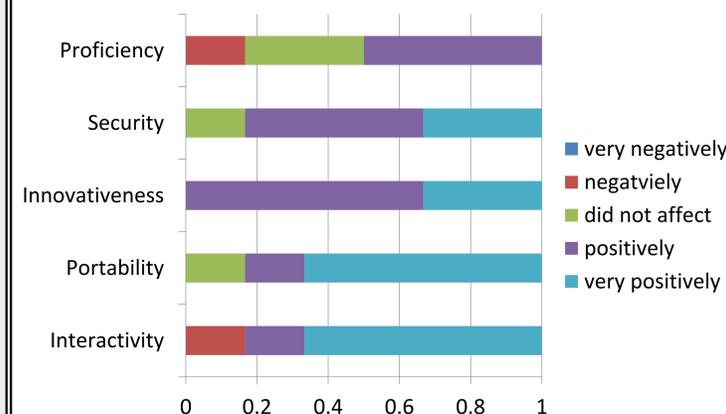
Daily use of technology



iPad Features

We also asked respondents to rank features of the iPad according to how they positively or negatively affected their experience collecting data (5 point scale, ranging from very positively to very negatively).

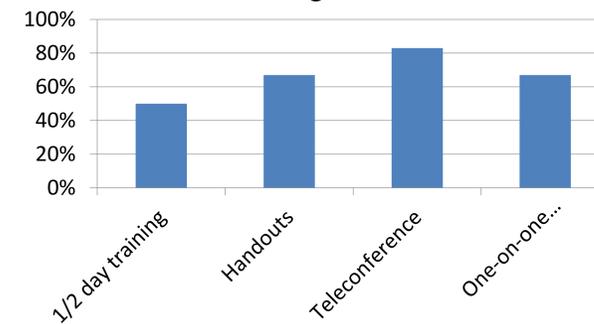
Effect of iPad features on data collection



Training

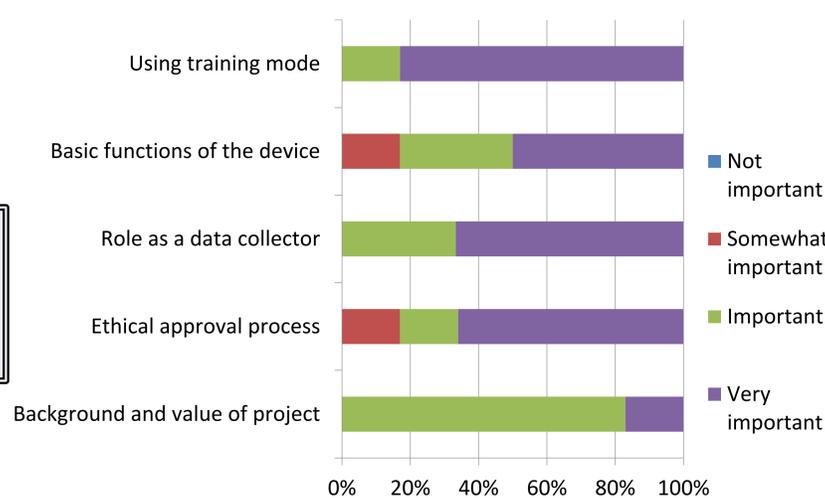
We also assessed the amount and type of training the respondents received prior to beginning data collection with participants as there had been some variability due to the multi-site nature of the TREKK project. Participants could have received any or all of the types of training

Training received



Several topics were discussed during training. We asked respondents to rate the level of importance that they perceived each topic to hold. The importance of each of the following topics was rated on a 4 point scale, ranging from very important to not important, see below.

Importance of the content of training sessions



STRENGTHS

“...appears more “high-tech” and professional”
 “with a unique online survey specific for TREKK, it appears more trustworthy as a legitimate research study, rather than having... paper surveys”
 “...younger generation proficient with using the iPad”

WEAKNESSES

“... some healthcare professionals are resistant to using technology. Generally they are older, and refuse to do the survey. This may skew the results to having more participants that say they are more open to using technology”
 “the only real negative of using the iPad relates to the survey participants level of comfort with technology, but not to such an extent that it affects participation - only initial comfort”
 “...older generation very uncomfortable”

Discussion

Participants had a great deal of positive feedback in terms of features of the iPad in practice and their overall experience. The level of interactivity and engagement with the participants of the TREKK project by using the iPad was seen as a benefit, as well as the innovativeness of incorporating this device into the research process. Portability of the iPad in contrast to previous data collection methods (i.e.: pen and paper surveys) was also perceived positively. Participants stated that this method appeared “high-tech and professional” and that the customized app allowed them to appear “more trustworthy as a legitimate research study”. These elements are clear benefits in terms of recruitment which can often prove to be a barrier in data collection. Furthermore, participants stated that iPads had great appeal for younger generations- this could be especially important in the TREKK study as we are investigating the needs of young families.

Negative feedback was minimal and related primarily to initial discomfort perceived by data collectors when recruiting among older generations.

It is important to note that several contextual factors may have influenced participant responses and experiences. Communication proved to be trialing at times due to the multiple data collection sites located across an expansive geographical area. Training and support often had to be accomplished via e-mail or teleconference and clarity and consistency were a challenge. Furthermore, because Ethical and Operational Approval had to be sought from each site, start dates for data collection varied, causing some confusion and disorganization between sites. However, in spite of all the clouding bureaucratic factors, it should be highlighted that all data collectors stated they would recommend using iPads in future studies and that they would participate in such a study again. Clearly this new methodological approach holds promise in bridging the gap between technology and practice.

The following recommendations could be of use to researchers interested in utilizing iPads in future projects:

- Incorporate practical recruitment strategies during training process (ex: for people resistant to technology)
- Ensure that all data collectors have time for hands-on training with the device prior to collecting data with participants

