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Cost comparison of survey data collection method for large-scale youth survey: paper versus handheld computer based

de Courten M, Moodie M, Kave C, Swinburn B
Department of Epidemiology & Preventive Medicine, Monash University, Australia

Background: Surveys employing hand-held computers for respondents are thought to be more expensive than paper-based questionnaires.

Aim: This evaluation study compared costs of two data collection methods: self-administered paper-based against hand-held computer based surveys for assessment in 3,000 adolescents in a four-year obesity prevention project.

Method: The paper-based survey costs comprise printing, storage, courier services, double-data entry and data checking. Resource utilisation was estimated based on a total of 8 double-sided A-4 paper questionnaires, a total of 3,000 respondents at both baseline and follow-up at the rate of 500 completed surveys per week. Completed surveys were stored in filing cabinets and weekly transported to data entry. Weekly batch processing facilitates early stage checking to identify any problems and ongoing monitoring. The costs of PDA-administered surveys relate to equipment, battery replacement and charging, carry cases, and time involved in loading and uploading data. Estimated resource utilisation was based on the same number of respondents, the equivalent annual costs of 50 PDAs calculated on a 5 year equipment life and a 7% interest rate; equipment use for four years shared with another project; 1.3 minutes of a Research Assistant’s time for loading the surveys and uploading each completed survey; a replacement rate of 10% of faulty PDAs; battery charging for four hours after every eighth respondent; and replacement of all batteries prior to follow-up.

The unit costs were based on 2005 market prices from relevant sources.

Results: The cost of the PDA-based survey was estimated at $11,141 ($3.71 per participant), a saving of 1.8% over the paper-based version. The key component was the initial capital cost.

Conclusion: The use of PDAs in data collection in large-scale surveys is marginally cost-saving. More extensive use of the PDAs for other projects over the 5 yr lifespan would enhance savings.

Digital versus paper entry for surveys: A comparison of data quality and preferences using a quality of life instrument with adolescents

de Courten M, Kave C, Moodie M, Galea G, Swinburn B
Department of Epidemiology & Preventive Medicine, Monash University, Australia

Background: Digital data entry in the field using PDAs (Personal Digital Assistants) should have advantages over paper entry.

Aim: The aim of this project was to compare data quality and user acceptability of PDA data collection compared to a paper-based questionnaire in adolescents.

Methods: The instrument used was the PedsQL™, a general health profile instrument designed for use with adolescents. It is a brief, one page instrument, comprising 23 items across four dimensions. It provides an index score, which is obtained through simple arithmetic addition with all dimensions weighted equally. The eSTEPS software from WHO was used for designing and implementing the questionnaire on PDAs. A group of 75 participants (12–15 years) firstly completed the PedsQL on a PDA and three weeks later repeated it on paper. A second group of 75 completed the surveys in the opposite order. The paper forms were double-entered into a database, whilst the PDA questionnaires were uploaded directly onto the computer for merging and analyses. Errors were recorded and corrected where possible.

Results: On 150 forms, there were 4 missing data items, 19 verified ‘typos’ after double entry and 5 problems with date of birth (mistaken with today’s date) which all impacted on future data linking. All these errors were avoided with PDA-based data collection. After merging, 134 complete pairs were available for analysis.

The students indicated in a separate evaluation survey (done on paper) a strong preference for PDA and fewer concerns about providing private information as when using paper.

Conclusion: PDA-based data collection is an attractive, acceptable method of administering questionnaires to adolescents and results in fewer errors compared to paper-based questionnaires.

The projected and actual costs of tracing and recruiting participants for a follow-up of the 1985 Australian Schools Health and Fitness Survey

Curry B, Dalton M, Venn A
Menzies Research Institute, University of Tasmania

Background: The 1985 Australian Schools Health and Fitness Survey (ASHFS) collected extensive data on the health and fitness of 8,484 children from 109 schools.

Aims: To trace ASHFS participants and recruit them into a follow-up study to investigate the childhood determinants of adult health.

Methods: Names, dates of birth and schools attended were available for 1985 ASHFS participants, but no addresses were recorded. Subjects were traced through current and historical electoral rolls, telephone listings and school and family networks and invited to participate in the follow up study. The project had a dedicated tracing and recruitment budget of $129,000 and 8 staff. We hoped to trace 80% of the original participants and enrol 60% of them into the study with an intensive effort over 13 weeks.

Results: Record-linkage with the current electoral roll produced matches for 3839 participants but only 50% were confirmed at current addresses. Other strategies were needed to trace the majority of participants. After 13 weeks only 2741 individuals were traced and 1929 had enrolled. At the end of one year we had successfully traced 6217 (73%) of the original participants and enrolled 4605 (54%) but had