Author's response to reviews

Title: Utility of telephone survey methods in population-based health studies of older adults: An example from the Alberta Older Adult Health Behavior (ALERT) Study.

Authors:

Jeff K Vallance (jeffv@athabascau.ca)
Dean T Eurich (deurich@ualberta.ca)
Paul Gardiner (p.gardiner@sph.uq.edu.au)
Lorian M Taylor (lmtaylor@ualberta.ca)
Gillian Stevens (gillian.stevens@ualberta.ca)
Steven T Johnson (sjohnson@athabascau.ca)

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Author's response to reviews: see over
Response to Reviewers
(changes in manuscript highlighted in **yellow**)

Editor

1. What is novel or useful about your report? CATI is quite common in market research so what does your paper offer to our readers?

Random digit dialing and CATI are indeed common data collection tools in market research. However, with respect to the health context, random digit dialing and CATI use among specific samples of older adults is limited. Our manuscript provides readers with information on logistics and feasibility of recruiting older adults into similarly designed studies. Our data provides information in which readers can use to plan and budget for related research initiatives [we now also include a cost component (i.e., cost per participant) in our Results section on p. 12]. Further, there are no examples of random digit dialing and CATI use among older adults in combination with collection objective health data via distance (i.e., post). Our study suggests that it is feasible to ask older adults to complete objective measures (i.e., pedometer steps and waist circumference) via post, after the telephone interview is complete. The older adults in our sample certainly demonstrated they were able to conduct these two assessments without any difficulties.

To further highlight the novelty and significance of our report, we have now included parts of the above paragraph in our Conclusions section on p. 15.

2. You use the terms 'random digit dialing' and 'CATI' in your paper- are these the same thing?

Random digit dialing and CATI are two different procedures. We now make this more clear in our manuscript. Random digit dialing is the method in which potential participants were identified (by the generation of random telephone numbers. CATI is the method used to collect the survey data. To accommodate Reviewer 1, point #1, we have now inserted a new section on p. 5-6 titled Random Digit Dialing, where explicitly discuss in more detail how this procedure works.

3. What are your recommendations for other researchers wishing to use CATI- are there particular caveats or scenarios where CATI should/should not be used

Based on our experience with this study, we can’t offer any particular caveats or scenarios where random digit dialing and CATI should/could not be used with older adults. We have added one suggestion regarding call attempts that may facilitate cost savings. In particular, on p. 15, we now state:

“The majority of completed interviews (60.3%) were achieved on the first two call attempts. Researchers utilizing similar approaches to data collection may consider making only two call attempts for possible cost savings given the diminished benefits of making >2 call attempts.”
Reviewer 1

1. It would be informative to have a better description of the random digit dialing. Where are these numbers from? Are they dialed electronically?

We have now inserted a new section titled Random Digit Dialing where we detail how this procedure works and where the numbers come from. Specifically, we now state on p. 5-6:

“A Random-Digit Dialing (RDD) approach was used to ensure that households in each health zone had an equal chance to be contacted whether or not their household was listed in a telephone directory. The sampling frame updated to 2012 of telephone numbers was based on land-lines and excluded businesses, unlisted cell phone exchanges, and government exchanges. The typical structure of a telephone number in the province in the recent era is: Area code (NPA)-Prefix/Exchange (NXX)- Phone Number (XXXX). Since 1986, the Population Research Laboratory has maintained a set of eight digit working banks (NPA-NAA-XX) for the province of Alberta. The PRL works with a vendor to update our list regularly to add in new area codes (3 digits), new exchanges (3 digits assigned to certain geographies in the province) and observed densities of residential and business telephone numbers assigned at the two-digit level. The last two digits in the phone number are then randomly-seeded and generated in the range 00-99 and appended with replacement to the working bank file based on the number of telephone numbers projected to reach the sample size desired. Within the 10 digit numbers generated the PRL purges the duplicate phone numbers. However, even at the two-digit level of generation, a substantial number of not-in service numbers and business numbers are still generated. The sample of numbers is sent out to a vendor for pre-dialing (screening) to filter out these numbers before data collection projects that require interviewer dialing. The main strength of random-digit dialing is the ability to sample all telephone households in the province, not simply households on a particular directory or commercial list [8].”

The random phone numbers are generated electronically after which the interviewer dials the number. When the respondent answers the phone, the interviewer verifies the phone number with the prospective participant. We now make this more clear on p. 9 where we now state:

“After making contact, interviewers identified themselves, verified the telephone number, and then asked the screening questions for selecting the respondent.”

2. At times I was confused, e.g. in the Discussion: 85% of participants returned objective data…next sentence say's 100%?

We recognize the confusion and have now provided more clarity in the sentence. We now state:

“Indeed, of the final sample, 85% of participants (n=1,081) completed and returned the objective assessments (step pedometer and waist circumference). Of these participants,
data quality was excellent as 100% of participants provided step data on all three days and three waist circumference measurements.”

**Reviewer 2**

1. It states that a total of 1081 subjects (85%) submitted self-measured ambulatory results. This is in-fact 83.4%. All the other percentages are rounded to 1 decimal place, except for this statistic.

   The reviewer is correct, the percentage is indeed 83.4%. We now state:

   “A total of 1,081 subjects (83.4%) also submitted self-measured ambulatory…”

2. The authors state that a total of 7013 were deemed eligible for the study, and that 4913 refused to participate, and that 1296 completed the telephone interviews. There is 804 subjects unaccounted for in this breakdown.

   The Reviewer is correct and we apologize for this oversight. There are indeed 804 participants unaccounted for in the Abstract. In the Results section, we document where these 804 participants are. In the results section we state:

   “…290 individuals refused participation as they did not want to wear the pedometer. Further, there were 222 households in which the potential respondents were difficult to contact (e.g., away for the duration of the survey, unable to participate due to illness, or unwilling to participate due to illness or death in the family). Further, 182 were not eligible due to full quote (i.e., region), 79 were reached via cellular phone and did not want to be disturbed, 19 claimed to be on the National Do Not Call List which does not apply to health research, and 12 indicated they would call back but never did.”

   We now account for the 804 individuals in the abstract. In particular, we now state in the Abstract on p. 2:

   “Finally, 804 (11.4%) participants were not included due to a variety of call dispositions (e.g., difficult to reach, full quota for region).”

3. The authors state the number of times the waist circumference should be measured, which should also be included in the abstract, because the number of times the pedometer has to be used is stated. If space is at a premium then remove the number of measures from both in the abstract.

   In the Abstract on p. 2, we now state:

   “After completing the CATI, participants were also invited to receive a step pedometer and waist circumference tape measure via mail to gather objectively derived ambulatory activity and waist circumference assessments.”
4. The authors also seem to the term ‘subjects’ but sometimes they use the term ‘patients’.

We thank the reviewer for bringing this to our attention. We have changed our terminology throughout the manuscript. We no longer use the term subject (the use of patient was an error on our part). We now use the terms individuals (for the larger group that was approached for the study), and participants (for those who participated in the study).

Background

5. The authors state that details regarding the recruitment procedures and results are often limited and not described at all, as well the methods used to recruit and enrol older adults. However it is not clear how this gap was identified as there is no literature cited by the authors to support this stance, or whether this gap was identified from there literature review. The cited literature is somewhat dated. I seem to remember a few recent papers on CATI in one of the BMC journals/

We have completely rewritten the paragraph the reviewer is referring to in the Background section. We now identify (with research examples) the limited detail that accompanies descriptions of random-digit dialing among older adults. We have also updated the sources we reference. We now state on p. 4:

“Researchers have utilized a variety of sampling/recruitment strategies including social media, health registry/database/chart review, print media, and public service announcements [3]. In the context of older adults, several studies have used random digit dialing and subsequent computer-assisted telephone interview (CATI) methods to establish a study sample. However, details regarding the recruitment procedures (e.g., data completeness, reasons for refusal, number of call attempts) and call dispositions (e.g., average number of call attempts, reasons for refusal) are limited [4-7]. Providing details regarding the procedures (and challenges) related to characteristics of telephone recruitment using random-digit dialing and CATI survey methods for study recruitment, and the outcomes of such methods, may assist other researchers in their planning and execution of older-adult health-related initiatives utilizing these methods.”

Methodology

6. The authors mention the use of a newly developed tool designed to assess total past year sitting behaviours using a several domain to measure this. Because this tool is new and unknown to readers, it might be that the authors should have explained the background, and perhaps the strength of adopting this tool.

We are happy to provide more information on this new and useful measure (a manuscript documenting the development and validation of the measure is currently under review with BMC Public Health). We now state on p. 6-7:
“Sitting (i.e., sedentary behavior) was assessed using a newly developed tool designed to assess total past year sitting behaviors and time in the following domains; sleeping and napping, transportation, work and volunteering, and light leisure and relaxing. It was designed for use in epidemiologic studies, and can be administered by interviewer of by written questionnaire.”

7. No ethics procedures are described.

On p. 5 we do state:

“The ALERT Study was approved by the University of Alberta’s Health Research Ethics Board as well as the Athabasca University Research Ethics Board.”

However, we are assuming the reviewer would like us to include more specific information regarding ethical procedures such as confidentiality assurances and the right to withdraw. We now state on p. 5:

“Prior to initiating the survey portion of the telephone interview, participants were assured that their participation is voluntary and that their answers are confidential and stored in a secured database and used only for study purposes. Participants were also informed they had the right to end the interview at any time.”

Results

8. Though the authors include p values which are measures of significance, these are not discussed in the results section. What is being tested?

In Table 3, we examined whether there were differences on the demographic variables across men and women. The results suggested there were differences between men and women on the marital status, education, income, employment status, and some comorbidities. We now make reference to these data in the Results section. In particular, we now state on p. 11:

“Statistically significant differences (using chi square tests) between men and women were observed for marital status, education, income, employment status, and some comorbidities (i.e., asthma, fibromyalgia, osteoarthritis, heart disease, thyroid condition, and mood disorder).”

9. The tables are clear to follow but some of the data may have been presented as graphs or figures, for example Table 1 would have been more understandable as a flow chart.

We agree that flowcharts are optimal. However, our team has discussed this recommendation and we are unsure of how to present Table 1 in a flowchart format. We feel Table 1 is simple, concise, and self-explanatory. For example, for completed interviews, 426 were completed on the first call attempt, 355 on the second call attempt, etc. We don’t feel a flowchart would convey this data any better. Of course we are open
to suggestions from the Review and the Editor if it is believed these data would be better suited in a flowchart format.

Discussion

10. I find it difficult to believe that income, education and race/ethnicity are not available from census data for subregions of Alberta. Given the high proportion with post-secondary education this is unlikely to be a representative sample for this age group.

With the assistance of Statistics Canada, we were able to pull some data in which to compare our sample to. We have now added this information in the Discussion section on p. 14. Specifically, we now state:

“There is no information regarding study non-responders to compare with study participants. However, using Statistics Canada 2012 census data we compared our sample to the general population on education and employment status. Our sample was representative of the population based on these variables as census data indicated 50.8% of Albertans over the age of 55 years had completed college or university [22], 44.9% were currently employed part or full time [23], and 59% were classified as overweight/obese (compared to 63.6% in our sample) [24]. We were unable to compare the samples on income as our study asked participants for combined household income as opposed to census data that collects individual respondent income.”

11. The discussion would benefit from a short paragraph giving advice about the technique. For example,

- CATI is most useful in groups which still have landlines (older people).
- the maximum number of calls before there were diminishing returns.

We agree with the reviewer that this information would strengthen the Discussion. We have now added on p. 14-15:

“Our study suggests that older adults are interested in and willing to participate in telephone-based health surveys using random digit dialing and CATI. Further, our study suggests that these methods can be expanded to include not only traditional telephone-based collection of information but also objective measures of health behaviors and anthropometrics including walking and waist circumference via post. The majority of completed interviews (60.3%) were achieved on the first two call attempts. Based on comparison to national census data, older adults that participated in our study were fairly representative of the general population of older adults living in the province of Alberta. Researchers seeking to conduct studies of a similar design with older adults can expect an ~18.5% response rate of those eligible and ~3.6% of all random numbers called.

Random digit dialing and CATI are indeed common data collection tools in market research. However, with respect to the health context, random digit dialing and CATI use among specific samples of older adults is limited. Our manuscript provides readers with information on logistics and feasibility of recruiting older adults into
similarly designed studies. Our data provides information in which readers can use to plan and budget for related research initiatives. Our study suggests that it is feasible to ask older adults to complete objective measures (i.e., pedometer steps and waist circumference) via post, after the telephone interview is complete. The older adults in our sample certainly demonstrated they were able to conduct these two assessments without any difficulties.”