Author’s response to reviews

Title: Intra-cluster correlation coefficients in adults with diabetes in primary care practices: The Vermont Diabetes Information System Field Survey

Authors:

Benjamin Littenberg (benjamin.littenberg@vtmednet.org)
Charles D MacLean (charles.maclean@vtmednet.org)

Version: 5 Date: 26 April 2006

Author's response to reviews: see over
Title: Intra-cluster correlation coefficients in adults with diabetes in primary care practices: The Vermont Diabetes Information System Field Survey

Response to Reviewers’ reports

26 April 2006

Date: 26 April 2006
Reviewer: Patty Chondros

Background

1) “To estimate statistical power or required sample size in a study, an estimate of the minimal important effect and the standard error of the effect.”

The statement above infers that we need to estimate the standard error of the effect, rather than the standard deviation of the outcome. Though it is a subtle distinction, it is important to be technically correct. When calculating the sample size or determining the power of the study for a fixed sample size, it is the standard deviation of the population for a continuous outcome that needs to be estimated, not the standard error of the sample. The standard error for binary outcomes will depend the value of the proportion ie se(p)=sqrt(p(1-p)/n). Suggest modifying statement, example given below.

“To estimate statistical power or required sample size in a study based on simple random sampling or allocation, one requires to assume the minimal important effect size and for continuous outcomes, also estimate the standard deviation of the outcome in the population studied.”

Done.

Statistical analysis

2) 1st paragraph.

“In the random effects model, the ICC is the proportion of the total variance that is between clusters (practices) rather than between individuals.”

Delete the last phrase of the sentence ie “rather than between individuals”, not required and confusing to reader.

Done.

3) Statistical analysis (page 6): Point 5 from the 2nd review, regarding the equations from the Stata manual for estimating the SE for ICC. I agree that the authors do not need to reproduce the formula from the Stata manual. There are various formulas used to estimate the standard errors for the ICC. What is required for the paper is a reference for the method used by loneway command in Stata to estimate the standard errors of the ICC. In this case it is Smith’s method which calculates asymptotic standard errors. The method is described in Donner’s paper (1986): Review of inference procedures for the ICC in the one-way random effects model. International Statistical Review 54: 67-82.

Done.
Last paragraph, first sentence: Only report standard deviations when the mean is presented for numerical (continuous or discrete) variables.
Add the phrase “for numerical variables” after the “standard deviation (SD)”.
Add the phrase “(or percentages)” after the “estandard error of the mean”.

Done.

Results & Tables

Table 1: Delete the standard deviations for all the dichotomous variables where the percentages are presented as they are not appropriate for proportions (percentages). The standard deviations should be left only for the numerical variables that have been summarised as means. The standard deviation describes the spread of values of the numerical variable in the sample. The SE should remain for all the variables in the table as it relates to the precision of the estimated proportion (percent) or mean.

Done.

Footnote: Omit “or percent” from the footnote “SD=standard deviation of the mean or percent”

Done.

For consistency and to simplify the table, lower bound of the CI for the ICCs reported as 0.0000 should also be reported as 0. Even though the estimated ICCs were not zero (such as functional status variables), if the lower bound of the CI crossed zero, Stata’s loneway command truncates the lower bound of the CI to zero as the ICC cannot be negative.

Done.

Date: 12 April 2006
Reviewer: Martin Gulliford

In the present version, Table 1 includes standard deviations for binary variables. In my view, the SD should only be given for the continuous variables. This is one reason why I would have preferred to see the data for continuous and binary variables presented separately. However, the present version could still be modified by omitting the SDs for binary variables.

Done.