Author’s response to reviews

Title: Practical considerations for sensitivity analysis after multiple imputation applied to epidemiological studies with incomplete data.

Authors:

Vanina Héraud-Bousquet (v.bousquet@invs.sante.fr)
Christine Larsen (c.larsen@invs.sante.fr)
James R Carpenter (James.Carpenter@lshtm.ac.uk)
Jean-Claude Desenclos (jc.desenclos@invs.sante.fr)
Yann Le Strat (y.lestrat@invs.sante.fr)

Version: 4 Date: 26 April 2012

Author’s response to reviews: see over
Dear Mr. Christopher Morrey,

Thank you for the opportunity to resubmit our paper titled "Practical considerations for sensitivity analysis after multiple imputation applied to epidemiological studies with incomplete data" for publication in BMC Medical Research and Methodology.

We have provided a response to the reviewer’s comments below in italic and have incorporated changes in a revised manuscript. These changes are highlighted in the main text in yellow.

All authors have declared that they have no competing interests. We have also included a detailed Title page, and an Authors’ contributions section before the Acknowledgements and Reference list as requested.

We hope that the manuscript is now suitable for publication in BMC Medical Research and Methodology.

With best regards,

Vanina Héraud-Bousquet
On behalf on all authors
Reviewer's report

Title: Practical considerations for sensitivity analysis after multiple imputation applied to epidemiological studies with incomplete data.
Version: 3 Date: 26 March 2012
Reviewer: Michel Chavance

Reviewer's report:
The authors appropriately modified their manuscript which can now be published in BMC Methodology.

However, I strongly suggest a last change, which I should have recommended earlier. On page 2, lines 9-11, they state "However, if the missingness mechanism depends on the outcome, given the covariates, a complete-case analysis will be systematically biased, even under the MAR assumption". It would be more correct to write "However, if the missingness mechanism depends on the outcome, given the covariates, a complete-case analysis can be biased, even under the MAR assumption"

We agree with the reviewer and the text has been revised accordingly.

If the missingness process only depends on the outcome, the situation is identical to a case control design which is known to provide unbiased estimates of the odds ratios. If this process depends, independently on the outcome and on some covariates, the complete case analysis will also provides unbiased estimates. In the example studied by Vach and Blettner and referenced by the authors, the four probabilities of complete observations in the four strata defined by the outcome and the exposure were 0.10, 0.20, 0.30 and 0.50, when identical marginal probabilities of complete observations would imply probabilities of .073, 0.187, 0.247, 0.633 with an observation process depending independently on the outcome and the exposure.