Author’s response to reviews

Title: Contraceptive Use before First Pregnancy by Women in India (2005-2006): Determinants and Differentials

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Version: 2 Date: 14 Oct 2015

Author’s response to reviews:

To

The Managing Editor-in-Chief

BMC Public Health

Subject: Submission of revised manuscript in BMC Public Health

Dear Sir,

Attached herewith, please find the revised version of our paper whose manuscript number is PUBH-D-15-00454, for possible publications in your reputed journal BMC Public Health. I have gone through comments of both the reviewers and immensely thankful for their valuable suggestions. Most of the suggested revisions have been performed. Almost all the revisions in the text have been highlighted by italicizing the changes made. Given below are the point wise responses to reviewer’s comments:

1. Respecting the reviewers’ suggestion change in reporting of odds ratio interpretation has been made. But given the value of Exp(B) for a category of an independent variable is 1.33 the statement that respondent is 33% more likely to exhibit the study characteristic is correct and have been used widely in interpreting the logistic regression analysis in research literature. This can be justified as (1.33 - 1.000 = .33, .33*100=33), similarly for OR= .90 a decrease of 10% follow as (.90-1.00= .1 and .1*100= 10), or if OR= 2.33 this implies that respondent is 133 % more likely to exhibit the study characteristic.

2. Before finalizing the model, linearity of logit link function was considered to be verified. But all of our explanatory variables are categorical say with category k, and for performing
the logistic regression analysis each of these explanatory variables has been further recoded into k-1 dichotomous variables (taking values 0 and 1). Therefore, most general approach Box-Tidwell transformation can’t be used here to verify the linearity of logit link function since logarithm of 0 is not defined. In such cases, though not perfectly, the Hosmer and Lemeshow test is considered to take fair care of non linearity of logit link function as Hosmer and Lemeshow test is basically a way of ascertaining how well the data fits the model. Also the prediction accuracy for logistic model for our data is 92.2 percent which very high.

3. It can be found in literature easily that increasing sample size is a way of dealing with multicollinearity (for example https://www3.nd.edu/~rwilliam/stats2/l11.pdf ). But as suggested by the reviewer, authors found the matrix of correlations while performing the logistic regression analysis and each correlation value was very less than .80; also, none of the independent variables in the final “variables in the equation” table had standard error greater than 2.0. Both of these checks leave us with no evidences of multicollinearity. The correlation matrix and standard error values can be provided to the reviewers, if they ask for it.

4. Being in agreement with reviewers, authors replaced the term multivariate with multivariable.

5. Keeping in view reviewers’ suggestion authors have tried to avoid the statistical detailing. However, anyone using any statistical or any other scientific method in his/her study not only should be capable of performing that analysis in a software but must also be aware about the statistical or any other scientific logics behind this tool. The motive of offering the statistical details about the underlying procedures was only to make the future readers of this paper, who also may be from non-statistical background, aware about the complete phenomenon.

Further, following the valuable suggestion of reviewer figure 3 has been omitted and table 3 has been formatted to maintain the consistency in presentation.

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