Author's reply

Thanks for the critical review of our manuscript entitled "Correlates of physical disability in the elderly population of rural North India." Two comments raised by the reader have been responded as follow

1. With respect to comment no. 1 raised on the estimation of the sample size for the study, we took the relative precision of 20%, which agrees with the literature in which 10%–20% is considered the relative precision for the estimation of sample size. The reference[1] which the reader gives in support of his view deals with absolute precision, not relative precision

Sample size may be estimated by using either absolute precision or relative precision as follows:

a. Formula using absolute precision:

$N = Z^2p\,(1-p)/E^2$
where N = Sample size
$Z = 1.96$
p = Anticipated prevalence
E = absolute precision

b. Formula using relative precision:

$N = Z^2p\,(1-p)/(pd)^2$
where N = Sample size
$Z = 1.96$
p = Anticipated prevalence
d = relative precision.

In our study, we estimated the sample size on the basis of relative precision and as we took 20% relative precision for the anticipated prevalence of 23.4% in our study, the absolute precision for our study would be 4.68%, which is in agreement with the reference[1] mentioned by the reader.

According to the reference[1] cited in his letter, the reader indicated that most authors have recommended 5% precision (absolute) when prevalence was between 10% and 90%. If prevalence was 10%, a 5% absolute precision would be equal to 50% relative precision which would be too high. Going by the relative precision method, 20% relative precision for 10% prevalence equals 2% absolute precision (10% relative precision for this prevalence will give an absolute precision of 1%), which gives a valid sample size. Therefore, it is preferable to use relative precision to estimate the sample size to avoid any issues about the estimate by the relative anticipated prevalence

2. We appreciate the reader's comment on the use of scoring in the Barthel scale to assess disability. However, we aimed to find the prevalence of disability in the elderly, which is a qualitative assessment. The use of scoring would have given a quantitative assessment of disability of the individuals which can be used to evaluate improvement in the disability such as a comparison of the score before and after any treatment or rehabilitation. Thus, if the respondent had a disability in any of the 10 items on the Barthel index, he/she would be considered physically disabled. Besides, this scale itself does not give any cutoff point at which a person can be described as disabled.

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Conflicts of interest
There are no conflicts of interest.

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