Acute respiratory infection in under five children

Sir,

We read with great interest the article by Temani et al. [1], published in the latest issue of Indian Journal of Child Health. First, we would like to commend the authors for their endeavor. We have the following comments regarding the methodological issues, which require further clarification by the authors for the benefit of the readers of the journal:

1. The authors do not specify the definition/diagnostic criteria of acute respiratory infection (ARI) used in the study and also who (researchers or the Anganwadi workers) made the diagnosis. This is of immense importance as a recent systematic review of RI cases in South Asia [2] revealed that there is a substantial variation in ARI case definition among studies reported in the last 15 years. It was further emphasized that even within the same study the incidence of ARI changed with change of case definition; this was true even when the criteria differed by a single clinical feature.
2. No exclusion criteria are mentioned in the study. This makes one curious whether children with recurrent respiratory tract infection and those with an underlying condition/ disease which predispose them to respiratory infection (e.g., congenital heart disease, airway abnormalities, etc.) were also included. These children would constitute a special population and it would not be fair to extrapolate data derived from them onto general population.
3. The methodology mentions that the sample size was 406 using prevalence of ARI 52% at a confidence level at 95% and margin of error at 5%. But calculating the sample size (n) by the given prevalence (p) and standard error (d), with the formula $n=Z^2\{P(1-P)\}/d^2$, sample size needed is actually 384 [3].
4. The authors mention that "around 29 children (total 14×29=406) were chosen by simple random sampling method from each Anganwadi center." For simple random sampling one needs to have the whole population included in a list, also termed a "sampling frame" [4]. So, it is not clear whether the authors created this sampling frame, given the tedious task it is expected to be. And if it was indeed created then if this included all the household/children under each Anganwadi center or it was made from the children visiting each Anganwadi center. Because, in the first case only the data will be truly "community based" as intended, because not all children with ARI are expected to visit the Anganwadi centers.
5. The abstract mentions the study to be "prospective, cross-sectional study" while in the main it is stated to be cross-sectional only. In a cross-sectional design the exposure/ risk factors and outcome/disease are assessed simultaneously at a given point of contact with the participants, and therefore, it cannot be a prospective as well [5].
6. The definition/criteria used for the following terminologies used are also not mentioned: Literate, illiterate, complete/ partial immunization and house close to main road.

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AUTHORS' REPLY

We thank readers for their interesting and valuable comments on our study [1] and would like to offer the following clarifications to the queries raised:

1. In the present study acute respiratory infection (ARI) was defined as per the World Health Organization criteria [2].
2. The exclusion criteria used in our study were:
   a. History of recurrent (2 episodes in 1 year or 3 during lifetime) or persistent (more than 1 month) pneumonia.
   b. Examination findings suggestive of congenital heart disease (e.g., cardiac murmur, clubbing), airway anomalies (stridor improving on prone position) or

significant gasroesophageal reflux (recurrent vomiting and failure to thrive).

3. Sample size was calculated using the cited formula and the basic sample size was indeed 384 but it was further increased by 5% to account for contingencies such as non-response or recording error {n+5%=384×1.05=403.2˜ 404}.
4. We randomly chose 29 children each from those visiting the 14 Anganwadi centers with ARI on a given day. Here all the children with ARI visiting the Anganwadi center on that day formed the "sampling frame."
5. It was a cross-sectional study but the Anganwadis were visited at different point in time.
6. Definitions used in the study:
   a. Literate - Those who had taken formal education. This category also included those who could read or write with meaning but had not taken any formal education in school [3].
   b. Illiterate - A person who could not read or write. This category also included those who could only sign or reproduce some writing mechanically without any meaning [3].
   c. Complete immunization - A child has received a Bacille Calmette-Guérin vaccination, three doses of DPT vaccine, at least three doses of polio vaccine and one dose of measles vaccine [4].

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