

CORRESPONDENCE



Dismantling five decades of public health policy with spurious interpretation of a single study may relapse nutritional blindness among vulnerable children in India

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Response to Letter to the Editor:

A Letter to the Editor is a powerful forum that allows researchers to discuss a study's relative strengths and deficits that may have been overlooked by the original authors and reviewers [1]. As members of a scientific community, authors of the letters should be professional and avoid personal attacks, colloquial words, and impolite language [2]. The collective efforts of the authors, as a rebuttal [3] to my published paper [4], are of little surprise. Those authors share a speculative view that India's national vitamin A supplementation (VAS) programme is not required and should be dismantled. Clearly, the content of their letter (2) does not appreciate the scientific discussion raised in my perspective [3]. I differ from the speculative views of the Expert Committee of Sub-Group on Vitamin A Policy (SGVAP) and those of Reddy et al [5], as they persistently deny the facts published in the Comprehensive National Nutrition Survey (CNNS) report [6]. I, therefore, presented my viewpoints and raised my concerns in my Letter to the Editor [7] and perspective [4] regarding their speculative recommendations to discontinue universal VAS based on a single study with a gross deficit in sample size. Sachdev et al. claim that the data presented in my perspective is flawed, outdated and inflated. The data I presented concerning the prevalence of vitamin A deficiency (VAD) in different states of India is based on state representative studies with adequate sample sizes. Those data represent what is presented in Table 2.6 (Page 39) & Table 7.4 (Page 196) of the original CNNS report [6] and National Nutrition Monitoring Bureau (NNMB) published Technical reports.

The CNNS reported in Table 7.4 (page 196) that the total number of 1–4-year children with serum retinol measured was only 6,694 as against the originally planned sample size of 20,350 (page 39). However, Sachdev HS and his colleagues, in their communication [5], came up with an inflated figure of 9,563, and this magic number is not seen anywhere in the CNNS original report!

To say I am cynical and dismissing the CNNS data is personal derogatory and misleads the scientific community. In fact Sachdev et al. have consistently denied and have conveniently ignored making any reference to the original sample size planned (Table: 2.6) in the methodology and the actual sample covered for national and state levels (Table: 7.4) by the CNN study [6]. Why

ignore and why make such a simple observation so complex? Are they being scientifically honest?

Statistical analysis to justify the poor coverage (6,694) of the CNNS national sample size is directed at manipulating and adjusting the numbers to achieve the desired precision to indicate the national representativeness of the study. Sachdev et al. have not undertaken a similar exercise for all 30 states; however, they tried to convince the scientific community and MoHFW with their misleading and biased calculations by manipulating the original numbers. Why do these authors avoid revealing the actual state-wise sample size in their reply to my Letter to the Editor [8] and their Letter to the Editor? [3].

Additionally, the CNNS did not cover all 28 states and seven union territories, and it reported that VAD data are unavailable for the states of Nagaland and Rajasthan (Fig7.2a and Table7.4). Likewise, the alarmingly low coverage of children for the States of Madhya Pradesh (37 against 600), Maharashtra (134 against 1000) and Haryana (127 against 600) have been totally ignored by the authors. Despite this fact, the SGVAP and Sachdev et al., in their communication, manipulated the information available with totally unscientific arguments such as “neighbouring states” and recommended the discontinuation of VAS in Nagaland and Rajasthan and a few Union Territories where CNNS was not carried out.

Additionally, Sachdev et al. seem confused about the appropriate usage of the nutrient requirements, Estimated Average Requirements (EAR) and Recommended Dietary Allowances (RDA). EAR refers to the amount of a nutrient estimated to meet the requirement for a specific criterion of the adequacy of half of the “healthy individuals” of a specific age, sex, and life stage. The EAR is not helpful as an estimate of nutrient adequacy in individuals because it is a mean requirement for a group, and the variation around this number is considerable. At the EAR, 50% of the individuals in a group are below their requirement, and 50% are above it. Thus, a person whose usual intake is at the EAR has a 50% risk of an inadequate intake during the reporting period [9]. It is also reiterated here that none of the EARs calculated for nutrients is based on studies conducted among the healthy Indian population. Unfortunately, all the EARs calculated for various nutrients were based on Western data [10].

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The scientific evidence from developing countries emphasised the beneficial effect of VAS on child survival. The recent meta-analysis by Baye et al. reported that 100,000–230,000 child deaths would have been averted in sub-Saharan African (SSA) countries if the coverage of children with vitamin A supplementation (VAS) was 90% [11].

This letter by Sachdev et al. [3] is an excellent example of misdirecting the readers and policymakers with speculations, data manipulation, and statistical jugglery aimed at opposing the universal VAS programme in India. Article 47 of the Indian constitution emphasises the state's responsibility to raise its population's nutritional standards and standard of living. Such irresponsible views from some of these authors with national reputations appear to be against public health and the interest of the poor, marginalised, and vulnerable children under five years.

The latest National Family Health Survey (NFHS-5) results revealed no desired improvement in the nutrition indicators among children under five over five years from NFHS-4. At the same time, some states have even performed poorly in this regard [12]. Therefore, considering this fact, coupled with the adverse effects of the COVID-19 pandemic on the nutritional status of children under five with disrupted supplementary feeding programmes and the absence of recent data on the Global Alliance for Vitamin A (GAVA) recommendations related to vitamin A status [13], it is detrimental to revise the existing VAS policy in India.

DATA AVAILABILITY

Comprehensive National Nutrition Survey (CNNS) National Report 2016–18. <https://nhm.gov.in/WriteReadData/l892s/1405796031571201348.pdf>.

REFERENCES

- Baethge C, Seger G. Our readers' voice: Letters to the Editor are an important component of the discussion of scientific articles, in *DeutschesArzteblatt* as in Other Journals. Our correspondence pages reflect a diversity of opinion thanks to the love of debate among our readers—and thanks to a few rules. *DeutscheArzteblatt Int.* 2009;106:207–9.
- Falavarjani KG, Kashkouli MB, Chams H. Letter to Editor, a scientific forum for discussion. *J Curr Ophthalmol.* 2016;28:1–2.
- Sachdev HS, Reddy GB, Pullakhandam R, Ghosh S, Rajkumar H, Kurpad AV. Flawed analyses and historical data inflate vitamin A deficiency in India to misdirect policy. *Eur J Clin Nutr.* 2022. <https://doi.org/10.1038/s41430-022-01164-9>.
- Arlappa N. Vitamin A supplementation policy: a shift from universal to geographical targeted approach in India considered detrimental to health and nutritional status of under 5 years children. *Eur J Clin Nutr.* 2022;28:1–6.
- Reddy GB, Pullakhandam R, Gosh S, Boiroju NK, Tattari S, Laxmaiah A, et al. Vitamin A deficiency among children younger than 5 y in India: an analysis of national data sets to reflect on the need for vitamin A supplementation. *Am J Clin Nutr.* 2021;113:939–47.
- Comprehensive National Nutrition Survey (CNNS). CNNS National Report 2016–18. New Delhi, India: Ministry of Health and Family Welfare (MoHFW), Government of India, UNICEF and Population Council, 2019. <https://nhm.gov.in/WriteReadData/l892s/1405796031571201348.pdf>.
- Arlappa N. Sample size covered for serum vitamin A is not nationally representative: data are not suggestive for Targeted Vitamin A Supplementation Programme in India. *Am J Clin Nutr.* 2021;113:1708–9.
- Reddy GB, Pullakhandam R, Ghosh S, Boiroju N, Tattari S, Laxmaiah A, et al. Reply to J Sheftel et al. and N Arlappa. *Am J Clin Nutr.* 2021;113:1709–11.
- Dwyer J. Dietary Requirements of Adults, Editor(s): Benjamin Caballero, Encyclopedia of Food Sciences and Nutrition (Second Edition), Academic Press, 2003, p. 1863–8. <https://www.sciencedirect.com/science/article/pii/B012227055X003503>.
- Nutrient Requirements for Indians: Recommended Dietary Allowances and Estimated Average Requirements for Indians –A Report of the Expert Group, 2020.
- Baye K, Lailou A, Seyoum Y, Zvandaziva C, Chimanya K, Nyawo M. Estimates of child mortality reductions attributed to vitamin A supplementation in sub-Saharan Africa: scale-up, scale-back, or re-focus? *Am J Clin Nutr.* 2022;116:426–34.
- International Institute of Population Science. National Family Health Survey India 2019–2021: India fact sheet. Mumbai: Ministry of Health and Family Welfare, Government of India; 2021.
- GAVA. Conditions for scaling back universal preschool vitamin A supplementation: policy brief. The Global Alliance for Vitamin A; 2019.

AUTHOR CONTRIBUTIONS

All contributions were from the single author.

COMPETING INTERESTS

The author declares no competing interests.

ADDITIONAL INFORMATION

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