

Letter to the editor.

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Dear sir,

We appreciate the comments in the letter to editor written by Anirban Mandal, and Puneet Kaur Sahi as relates to our published article entitled "Iron status of apparently healthy pre- school children in Lagos, Nigeria". I wish to hereby acknowledge that the questions and comments raised by them are apt and necessary for clarity.

The point by point responses to the comments are as follows:

1. The prevalence of 69% was the estimated prevalence for the whole Nigeria country, of which Lagos is a state.

Proposed sample size was determined using the standard statistical formula for sample size.¹

$$N = z^2 p (1-p) / a^2$$

Where:

N = estimated sample size

z = the fraction of area under a normal distribution curve covered by two standard deviations (2SD) on either side of the mean. It is equal to 1.96 (at 95% confidence limits) in a two-tailed test.

p = the estimated or known prevalence of iron deficiency anaemia among Nigerian children. In this study, the rate of 69% (0.69) reported in the Vitamin and Mineral Deficiency, A Global Progress Report. UNICEF and Micro-nutrient Initiative² was used.

a = the absolute tolerable sampling error. For this study it

was fixed at 10.0% (0.1) around the reference prevalence figure of 69%.

2. The exclusion criteria for the study subjects a. Denial of consent.

b. Children who had received a blood transfusion in the three months preceding the study.

a. Children who have received iron supplementation within 3 months prior to recruitment.

c. Children with a history of prematurity or low birth weight d. Children with acute illness.

3. Blood specimen was transferred into Na-EDTA containing tubes and plain tubes. After centrifugation the plasma was separated from the clotted blood sample in the plain vacuum tubes and the serum samples were analysed for serum iron concentration and unsaturated iron binding capacity (UIBC). The fresh blood samples collected in EDTA containing tubes were used for complete blood count (CBC), haemoglobin concentration, mean corpuscular volume (MCV), red blood cell count, mean corpuscular haemoglobin (MCH) and mean corpuscular haemoglobin concentration (MCHC) determination on the same day of collection.

4. The samples were protected from light at all times using sheets of black plastic to prevent photo reduction of serum ferritin.

5. The age and data in Table 2 have been represented using median \bar{A} Interquartile range.

Overall, the age of the subjects ranged from seven months to five years, with a median of 26.00 months and interquartile range of 53.

Table 2 – Mean values of iron status indicators among study subjects

Iron metabolism abnormalities	≤2 years	>2 – 5 years	p-value
	Median (IQR)	Median (IQR)	
Haemoglobin concentration (g/dL)	9.40 (13.70)	9.80 (4.10)	0.207+
Serum Iron (mcg/dL)	60.00 (325.00)	70.00 (390.00)	0.281*
TIBC (mcg/dL)	283.00 (544.00)	257.00 (558.00)	0.069*
Serum ferritin (ng/dL)	31.50 (233.00)	55.00 (272.00)	0.007*
Transferrin saturation (%)	22.19 (77.74)	31.04 (85.59)	0.025*
MCV (fl)	71.40 (25.70)	75.20 (24.10)	0.008+

* = Mann-Whitney *U* test

+ = Student t-test

IQR = interquartile range

6. The study was conducted with the aid of a structured questionnaire administered by the researcher. The questionnaires covered key thematic areas relevant to the aetiology of iron deficiency anaemia. The socio-demographic (such as age, family size, birth order, parental age, parental occupation and highest educational qualification e.t.c) and physical findings on examination of the subjects were entered into the questionnaire.

7. The data data regarding breast feeding would have been invaluable in the age group ≤ 2 years. The importance of this was evident in the recommended cited article by Maguire et al³ in the letter to the editor. Maguire et al³ showed that increased total breastfeeding duration is associated with decreased iron stores. However, they concluded that this finding has a clinical importance but that this association still warrant additional investigation. It will have pro-

vided an opportunity to either corroborated or otherwise this findings by Maguire et al³.

Reference

1. Araoye MO. Research Methodology with Statistics for Health and Social Science. 1st ed. Ilorin: *Nathadex* (publ); 2003.
2. UNICEF/Micronutrient Initiative. Estimated Prevalence (%) of Micronutrient Deficiencies Among pre-school children in Sub-Saharan African Countries. Vitamin & Mineral Deficiency, A Global Progress Report. New York: UNICEF; 2006.
3. Maguire JL, Salehi L, Birken CS, Carsley S, Mamdani M, Thorpe KE, et al. Association between total duration of breastfeeding and iron deficiency. *Pediatrics*. 2013;131: e1530-7.