



Thinking Before the Journey of First 1000 Days of Life

Dimple Rawat¹ · Anshu Sharma² · Arun Kumar Yadav³ · Rinchen Zangmo¹

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Abstract

For any nation the health of its citizens especially that of the reproductive age women is critical and of paramount importance as they are the ones who usher in the new generation. Now that India is undergoing triple burden of malnutrition, if the pregnant woman is underweight, overweight, obese or diabetic both the mother and the baby are at a high risk of developing complications not only during pregnancy but also postpartum. Hence, having a good nutritional status is so important even before the woman conceives.

Keywords 1000 days · Nutrition · Pregnancy

The poor nutritional status of women during pregnancy results in higher pre-natal, antenatal complications and impacts the health of child later in life, thus continuing intergeneration cycle of malnutrition. The data from NFHS-5 show that women of the reproductive age group (15–49 years) are malnourished in India—the prevalence of underweight and overweight/obese was found to be 18.7% and 24.0%, respectively. A high percentage of Indian women (15–49 years) were found to be anaemic (57%); of those, 26% were mildly anaemic and 3% severely anaemic. The prevalence of anaemia has increased between NFHS-4 and NFHS-5 from 53 to 57% [1].

In spite of several initiatives for the five decades (National Nutritional Anaemia Prophylaxis Programme, ICDS, NACP, National Iron Plus Initiative etc.), the prevalence of low-birth-weight babies (18%), neonatal mortality (24.9%), infant mortality (35.2%), under-five mortality (41.9%),

stunting (36%), wasting (19%), underweight (32%) is still significantly high and needs to be looked into [1].

So, with this high burden of malnutrition in mother/child dyad, what are we missing out on? Adolescent health has been overlooked for too long. Lancet Series (2021) has highlighted that the health of adolescents has been neglected in the national and global plans and policies [2]. The demand for various nutrient is very high in the age group and is not met with. Thus, this age group can actually be taken as the window of opportunity to improve the nutritional status of the girls before they enter the institution of marriage and conceive. In the Indian context, it is important as nearly one in four girls get married before they turn 18.

Focus on pre-conception strategic interventions including screening and rectifying the micronutrient profile (iron, folic acid, vitamin D) before conceiving may have an effect on improving the nutritional status of mother and child. At this point, the woman should also be counselled for balanced diet and checked for high risk factors like underweight, overweight, diabetes, anaemia, etc. The adolescents who are studying in schools may be targeted with collaborative efforts of health institutions like primary health care centre, maternity home and school teachers. The dropouts from school or those who did not attend school may be involved with community participation like *Mahila Arogya Samitis*, Self-Help Groups etc. The health opportunities may also be used for imparting sexual education and increased requirements of nutrients during pregnancy and lactation.

Micronutrient deficiencies (MNDs) in women are found to be severe. Implications of these micronutrient deficiencies

Dimple Rawat, Research Fellow; Anshu Sharma, Assistant Professor; Arun Kumar Yadav, Associate Professor; Rinchen Zangmo, Assistant Professor.

✉ Rinchen Zangmo
rinchen.zn@gmail.com

¹ Department of Obstetrics and Gynecology, All India Institute of Medical Sciences, New Delhi, India

² Department of Food and Nutrition, Institute of Home Economics, University of Delhi, New Delhi, India

³ Department of Community Medicine, Armed Forces Medical College, Pune (AFMC), Pune, India

Table 1 Summary of nutrients requirements for an adolescent and female (ICMR-NIN, 2020) [4]

Age group	Body weight (kg)	Energy (*) Kcal/d	Protein (g/d)	Calcium (mg/d)	Magnesium (mg/d)	Iron (mg/d)	Zinc (mg/d)		
10–12 y	36.4	2060	33	850	250	28	8.5		
13–15 y	49.6	2400	43	1000	340	30	12.8		
16–18 y	55.7	2500	46	1050	380	32	14.2		
Women (sedentary)	55	1660	46	1000	370	29	13.2		
Women (moderate)		2130							
Women (heavy)		2720							
Iodine (µg/d)	Thiamine (mg/d)	Riboflavin (mg/d)	Niacin (mg/d)	Vit B6 (mg/d)	Folate (µg/d)	Vit B12 (µg/d)	Vit C (mg/d)	Vit A (µg/d)	Vit D (IU/d)
100	1.4	1.9	14	1.9	225	2.2	50	790	600
140	1.6	2.2	16	2.2	245	2.2	65	890	600
140	1.7	2.3	17	2.3	270	2.2	70	860	600
140	1.4	1.9	11	1.9	220	2.2	65	840	600
	1.7	2.4	14	1.9					
	2.2	3.1	18	2.4					

For people consuming cereal-based diet with low-quality protein, the protein requirements are 1 g/kg per day

The cereal-legume-milk composition of the diet should be 3:1:2.5 for good protein quality

*There is no RDA for energy. The EAR for energy is equivalent to the estimated energy requirement (EER)

includes anaemia in pregnant mothers and its effect on the fetus as well. Deficiency of vitamin D is associated with failure to conceive and polycystic ovarian syndrome, congenital anomalies along with negative effects on the fetus [3].

Fortunately, MNDs are preventable. Under the umbrella of POSHAN Abhiyaan, Anaemia-Mukt Bharat mission recommends food fortification as an important strategy to tackle MNDs. Knowledge, awareness and campaigns regarding the available fortified products, namely staples with iron, vitamin B₁₂ and folic acid; milk and edible oil with vitamins A and D; double fortified salt, and knowledge about labels should be done at maximum level using the various e-media platforms. Pre-natal counseling should be made standardised, comprehensive and be made compulsory-covering aspects of family planning, food interactions and cooking practice which retain nutrients.

As mentioned in sustainable development goal 3.7, it is important to ensure 'universal access to sexual and reproductive health-care services, including family planning, information and education, and the integration of reproductive health into national strategies and programmes by 2030'. To achieve this objective, the concept of reproductive health, planned pregnancy and parenthood has to be inculcated in youth of the country. Visit to the health system prior to conceiving for evaluation and advice and link up with nutritional program may break the cycle of intergenerational malnutrition. Rubella IgG to check for immunity against Rubella, if its negative offer vaccination with single shot of Rubella vaccine.

With advances in social media and technology in recent times, regular and routine preventive health informative programmes should be planned which should be accessible to all at the national level in the local regional languages. Policy intervention and campaign highlighting the importance of pre-conceptional planning and nutritional status should be emphasized upon and implemented, to ensure optimum benefits of the programme. Thus, investing in the most critical phase of life, that is, adolescence or before the woman, enters the institution of marriage is important for achieving optimum human potential. Hence, instead of mentioning first 1000 days, it should be framed in such a way so that it reflects the pre-conceptional phase too, mentioning some of the mandatory general advice as highlighted in the current paper (Table 1).

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Declarations

Conflicts of interest None.

Ethical Approval Not required.

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