

Micronutrient Status and Select Characteristics of Adolescents: Results From a School Nutrition Program in Bangladesh

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Objectives: To describe select characteristics of adolescent girls and boys and micronutrient status of adolescent girls at baseline prior to starting a school nutrition intervention.

Methods: Girls (n = 2244) and boys (n = 773) in grades 8–9 attending 74 schools participated in a baseline survey including questions on individual and household characteristics, nutrition knowledge and experience and dietary diversity. Venous blood was collected from girls for micronutrient status assessment. Iron status was assessed using inflammation-adjusted serum ferritin. Vitamin A status was based on retinol binding protein. Folate status was defined using serum and red blood cell folate (RBCF). In-school observations of WASH infrastructure resources and drinking water quality testing were conducted. All estimates accounted for clustering.

Results: Girls and boys, respectively, had ever heard of anemia 34% and 27%, iron-folic acid (IFA) tablets 31% and 14%, deworming tablets 84% and 85% and worm infestation 49% and 52%. Reported IFA use in the last month and deworming tablet intake in the last 6 months were 4% and 1% and 81% and 86%, among girls and boys, respectively. Mean dietary diversity score suggested adequacy among girls (5.2) and boys (5.3) with 63%–68% having scores > 5, and 36%–39% consuming rich sources of heme iron. Adolescents perceived the existence of iron in household tubewell (21%–24%), with 5–9% describing the taste, smell, or color of rust in drinking water. The prevalence of micronutrient deficiencies and severity varied: anemia 24.7%, iron deficiency 9.1%, iron deficiency anemia 3.9%, vitamin A deficiency 3.3%, RBCF insufficiency 76.1%, risk of RBCF deficiency 8.9%, RBCF deficiency 2.5%, and serum folate deficiency 9.5%. In schools, 70% met the sustainable development goals (SDG) indicator for basic drinking water service, 59% of all sampled drinking water sources complied with WHO standards for *E. coli*, 42% met the SDG indicator for basic sanitation service, and 3% met the SDG indicator for basic hygiene service.

Conclusions: The baseline results show variable awareness and coverage of interventions, adequate dietary diversity, micronutrient deficiencies among girls, and room for improvement to achieve SDG basic WASH services and reduce *E. coli* contamination of drinking water sources in schools.

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