



FIGIJ Advocacy Statement: Nutrition and Reproductive Health in Childhood and Adolescence

Introduction /Purpose

While nutrition is important during the whole life span, for children and adolescents adequate nutrition is of utmost importance for growth and development. During adolescence, the nutritional needs are the greatest. These nutritional needs relate to the fact that adolescents gain up to 50% of their adult weight, more than 20% of their adult height, and 50% of their adult skeletal mass during this period.

In low and middle income countries (LMIC) each year nearly 6 million deaths among children under-five years of age are associated with malnutrition. The world's adolescent population, about 19% of the total population, faces serious nutritional challenges not only affecting their growth and development but also their health and livelihood as adults.

The World Health Organization (WHO) identified the main nutritional problems affecting adolescent populations worldwide, they include:

- undernutrition in terms of stunting and severe underweight, with subsequent catch-up growth leading to obesity,
- perpetuation of intergenerational undernutrition through intrauterine growth retardation of the fetus in undernourished pregnant adolescent girls;
- iron deficiency and anemia, exacerbated by the onset menstruation
- deficiencies in vitamin and mineral intake necessary for physical and mental health, especially of vitamin A, iodine, calcium, folate, zinc and other micronutrients;
- obesity, especially due to intake of high calorie, low nutrient foods and sedentary behavior.

Worldwide, the prevalence of being overweight has increased, however the prevalence of being underweight has remained the same in recent decades. As a result, the global distribution of BMI has widened. However, it remains important to realize that the global burden of being moderately or severely underweight is still

higher than that of being overweight. This Statement focuses on the gynecological consequences of over- and undernutrition. For undernutrition due to eating disorders, see FIGIJ Statement *Eating disorders*.

Undernutrition

The global prevalence of being underweight among children and adolescents is 8.4% for girls. It is important to understand that undernutrition goes along with poverty, but also with family structure. Gender bias in child care, which often puts females at a greater disadvantage in terms of nutrition, means that female children may be served last in disadvantaged families.

The prevalence of being moderately and severely underweight is highest in South Asia. While the lowest mean BMIs for children (aged 5–9 years) are found in East Africa and the lowest mean BMIs in adolescence in South Asia.

The consequences of chronic malnutrition, in early infancy and childhood mainly and to a lesser extent inadequate nutrition in adolescence, can potentially retard growth and sexual maturation. When using maximum growth spurt or menarche as an indicator, the onset of puberty can be delayed in malnourished girls by an average of two years. In addition, the delayed growth and maturation in girls attributed by malnutrition further increases the risks associated with adolescent pregnancy, as biological age lags behind chronological age, for example leading to increased maternal morbidity. Adolescent pregnancy exposes both the stunted or undernourished mother and her child to adverse health and socioeconomic consequences. Decreased bone mineralization occurs when puberty is delayed and there is inadequate energy availability for bone development. Low iron intakes alone do not fully account for the high prevalence of anemia. A 12% menorrhagia rate was found among menstruating girls aged less than 20. Heavy menstrual bleeding was suspected to be an important contributor to the high rate of anemia (40%, see also FIGIJ Statement *Menstrual Health*).

Overnutrition

A massive global epidemic of obesity is emerging in children and adolescents. Globally, the prevalence of obesity has risen from <1% in 1975 to more than 5% in girls. Obesity has increased in all regions of the world, with the largest proportional increase in southern Africa. At the moment, 10% of school children have obesity in (high income countries) HIC.

The increase in sedentary lifestyle, largely due to the increase in the time spent in front of screens added to bad eating habits, with excessive consumption of fast foods, quickly leads to overweight and obesity. Mandatory COVID isolation and school closures further contributed to decreased activity. The lack of correct labeling of food products, providing information on food content, added to the poor food education of adolescents, are two serious issues that aggravates this problem and should be addressed.

Obesity, and poor metabolic profile in adolescence are associated with non-communicable diseases, e.g. hypertension and diabetes mellitus, and mortality later in life. Obesity is increasing globally in LMIC undergoing a nutrition transition from food insecurity and undernutrition problems, to overnutrition with high caloric low-nutritional value food..

Obesity may be brought about by poor nutritional choices of adolescents (poverty, access to healthy food, education (school/families)). In high-income countries overnutrition can focus more on life-style interventions, whereas for LMIC access to healthy food and education are more important.

We, as healthcare providers, should be concerned about adolescent overnutrition because we are already observing the impact and it's gynecologic consequences amongst our patients. Childhood obesity leads to earlier pubertal onset which can put the child at risk of sexual abuse. Overnutrition leads to cycle disturbances like, oligomenorrhea and amenorrhea. As a consequence of obesity, there is an increased risk of developing PCOS, fertility disorders, and increasing the risk of endometrial cancer later on in life.

Closing remarks

- Adolescence is a vulnerable period and provides a window of opportunity for nutrition education and prevention of non-communicable disease
- When a patient with early puberty, delayed puberty, or cycle disturbance comes to the office, nutrition status should be assessed.
- Adolescents are usually open to new ideas and many habits acquired during adolescence will last a lifetime. With increasing age, adolescents' personal choices and preferences gain priority over eating habits acquired in the family, and have progressively more control over what they eat, when and where. For these reasons, adolescents are an ideal target for nutrition education.

Call for action

1. All healthcare providers should screen nutritional health status in the adolescent population in order to prevent negative reproductive health consequences of nutritional problems.
2. Legislation for adolescent nutrition programs (IEC, screening, program intervention) and support for healthy school-based meals.
3. Stakeholders (national gynecologic societies, (social) media, schools, families) should advocate for healthy evidence-based nutritional policies in schools, cafeterias and clinics.
4. FIGIJ supports and endorses the WHO and UNICEF statements for proper adolescent nutrition.

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