

Double burden of malnutrition among female adolescents in Greater Tunis area and its associated factors

Background:

As with many countries undergoing rapid economic growth, Tunisia is facing the “double burden of malnutrition”, defined as the coexistence of both under-nutrition and over-nutrition within individuals, households and populations, and across the life-course. Most studies focus on high prevalence of underweight or stunting and overweight in the same population, or on households with both obese and stunted or underweight individuals. Individuals may experience a dual burden of malnutrition, with overweight and obesity coupled with micronutrient deficiencies. Although initially documented in adults, this emerging disaster has been also observed in children and adolescents.

Objective:

The objective of this study is to assess the prevalence of double burden of malnutrition (overweight and anaemia) among Tunisian female adolescents and to understand the role of sociodemographic factor, dietary intake and physical activity in this regard.

Methods:

In cross-sectional surveys representative of the region of Greater Tunis area, we randomly selected 1258 adolescents aged 10-19 years including 585 male and 673 female participants. We assessed the magnitude of the double burden of malnutrition among Tunisian female adolescents, as defined by the coexistence of overweight and anaemia. The BMI status was determined in accordance with the sex- and age-specific percentiles of the national reference standards. BMI status was defined as follows: underweight (BMI<5th percentile), normal (BMI≥5th percentile, and <85th percentile), overweight (BMI≥85th percentile and <95th percentile), and obese (BMI≥95th percentile). Female adolescents younger than 12 years who had an Hb concentration <11.5 g/dL and those older than 12 years who had an Hb concentration <12 g/dL were considered as anaemic. The association between anaemia and overweight, and socio-demographic and lifestyle factors were estimated by multinomial regression.

Results:

The prevalence of overweight and anaemia was 23.3% and 17.7 % respectively, illustrating the double burden of malnutrition among female adolescents. The coexistence of overweight and anaemia was found in 3.7% of female adolescents. Generally, associated sociodemographic factor, dietary intake and physical activity differed from those usually associated with overweight or anaemia. The double burden of malnutrition “anaemia and overweight” was associated with energy intake and sedentary lifestyle.

Conclusion:

The significant prevalence of the double burden “anaemia and overweight” among Tunisian female adolescents requires special attention, e.g. through interventions, which simultaneously target both types of malnutrition within the same subject.

Keywords:

Overweight, Anaemia, Double burden of malnutrition, female adolescents, Greater Tunis Area

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