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Socioeconomic Factors Associated with the Double Burden of Malnutrition among Women in Mozambique: A Cross Sectional Analysis of Demographic and Health Surveys from 1997 to 2011

Background

A comprehensive analysis of the malnutrition status of Mozambican women of reproductive age to guide nutrition-related policy-making is needed. This study aimed to estimate the prevalence and trends in overweight, underweight, and overweight and anemic in Mozambican women. Geographical clusters of overweight women were identified. In addition, socioeconomic factors associated with overweight and underweight were analyzed.

Methods

Data from the 1997, 2003 and 2011 Mozambican DHS of women 15 –49 years were used in this study. Pregnant women were excluded. Body mass index (BMI) was coded as <18kg/m2 for underweight, 18.5kg/m2 – 24.99kg/m2 for normal weight, ≥ 25/kg/m2 for overweight. Hemoglobin levels was categorized as 120 g/l or higher for non-anemic and <120 g/l for anemic. Descriptive statistics were used to estimate prevalence whereas, logistic regression models were used to analyze the association between household wealth and education and BMI categories in SAS adjusting for other confounding sociodemographic factors like age. Finally, the Getis-Ord Gi* statistic was calculated with the hotspot analysis tool in ArcGIS to identify districts in Mozambique with a clustering of overweight women.

Findings

3,485, 10,535, and 12,202 women were included in our analysis of the 1997, 2003 and 2011 MDHS, respectively. From 1997-2011, underweight prevalence declined from 10.9% to 8.5%. Contrastingly, overweight prevalence increased from 9.2% in 1997 to 16.4% in 2011. These trends were statistically significant (p <0.001). The prevalence of overweight and anemic was estimated at 7.3% for 2011 (no data for other years). Clusters of overweight women were found in districts located in Panda and Chibuto districts in Gaza and Inhambane Province. Household wealth and education had a positive and negative statistically significant association with overweight and underweight respectively. Individuals from richest wealth quintile were 11 times as likely to be overweight (OR 10.56; 95% CI 7.04 - 15.83) and had a 40% decreased odds of being underweight (OR 0.60; 95%CI 0.43 -0.85) compared to those in the poorer wealth quintile. Individuals from middle wealth quintile were twice as likely to be overweight (OR 2.18; 95% CI 1.53 - 3.11) and had a 39% decreased odds of being underweight (OR 0.61; 95% CI 0.47 - 0.79). Women with secondary or higher education had a 38% increased odds of being overweight (OR 1.38; 95 CI 1.11 - 1.71) and a 32% decreased odds of being underweight (OR 0.68; 95 CI 0.51 - 0.90) compared to those with no education.

Interpretation

Our study reveals the existence and location of a double burden of malnutrion in Mozambique and the sociodemographic drivers such as household wealth and education. Although underweight prevalence is plummeting, overweight prevalence is increasing. Increasing socioeconomic status may place Mozambican women at increased risk of overweight and obesity due to access to surplus or unhealthy foods and sedentary behaviors. Targeted interventions for this at-risk group is warranted.

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