

## Body size, Mental health and Inequalities: The burden of obesity in South Africa

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### Background:

Given the substantial burden of obesity in South Africa, it is important to understand how specific aspects of socio-economic position influence the risk of unhealthy weight in different gender or ethnic groups.

### Methods:

We investigated body mass index distributions among subjects aged 15+ years from the South African National Health and Nutrition Examination Survey. Determinants of underweight, overweight and obesity were studied in 1655 (73%) men and 3104 (74%) women who had data available on social and mental health characteristics. Logistic and multinomial regressions were used to study associations with weight categories.

### Results:

Less than half of the subjects had healthy weight, 22% were overweight and 29% were obese. The proportion of healthy weight decreased and the risk of obesity increased with age up to 65 years. African women had a particularly high risk of overweight and obesity compared to men (age adjusted OR 4.65, 95% CI 3.94-5.50). The effect of gender was smaller in non-Africans (age adjusted OR 3.02, 95% CI 2.41-3.79; test for statistical interaction  $p = 0.004$ ). Employment and higher education were associated with higher risk of overweight and obesity and a lower risk of underweight. Married subjects were at a higher risk of overweight and obesity. In men, higher income was associated with overweight and obesity. We found weak evidence of poor mental health being associated with unhealthy BMI.

### Conclusions:

There are social gradients and gender and ethnic differences in how underweight, overweight and obesity are distributed in the South African population. A high prevalence of obesity among women and positive associations of education, employment and income with overweight and obesity call for investments into health literacy. Action is also needed to prevent undernutrition among socially disadvantaged groups, and men in particular.

### Key messages:

- There are strong social gradients and important gender and ethnic differences in how underweight, overweight and obesity are distributed in the South African population.
- High prevalence of obesity in women and positive associations of socioeconomic position with obesity indicate poor health literacy. Undernutrition needs to be reduced among socially disadvantaged.