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RESEARCH LETTER

Misperception of body weight among overweight or obese adults in Mauritius

KEYWORDS

Weight misperception;
Africa;
Obesity

Summary

Background/objectives: In the African region, little is known about weight misperception among overweight or obese adults. We assessed the prevalence of weight misperception and predictors of weight misperception among overweight or obese adults in Mauritius. Height, weight, and self-perception of weight status data from 5736 adults (≥ 19 years of age), sampled in a population-based survey in 2009 were analysed. Weight status was defined using BMI calculated on the basis of measured height and weight. Information regarding self-perceived body weight, socio-demographic and self-rated health data were collected using a questionnaire. **Results:** Overall 41% of overweight or obese adults misclassified their own weight status. Among adults who were overweight or obese, weight misperception was increasingly less likely among those with increasing education (men: $p = 0.02$; women: $p \leq 0.001$) but was more likely among those who perceived their overall health as good or excellent (men: PR = 1.29, 95% CI 1.10–1.52; women: PR = 1.42, 95% CI 1.26–1.60). Adults who were overweight or obese, weight misperception was increasingly less likely with increasing income (men: $p = 0.025$; women: $p \leq 0.001$). Among women who were overweight or obese, weight misperception was increasingly more likely with increasing age ($p \leq 0.001$) and those who self-reported Chinese ethnicity (PR = 1.48, 95% CI 1.22–1.78).

Conclusion: A large proportion of adults in Mauritius misperceive their own weight status, with variation by socio-demographic characteristics and self-rated health. Future studies are needed to examine if correcting misperceptions of weight status may support obesity prevention and control efforts in Mauritius.

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Introduction

In the African region, little is known about weight misperception among overweight or obese adults or its correlates [1,2]. We assessed the prevalence of weight misperception among overweight or obese individuals in Mauritius. We also examined the association between socio-demographic factors

and self-rated health with weight misperception among overweight or obese adults.

Methods

We used population-based cross-sectional data from the 2009 Mauritius Non-Communicable Disease

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Table 1 Sample characteristics ($n = 5736$): The Mauritius Non Communicable Diseases Survey 2009.

Characteristics	All	Men	Women	<i>p</i> -Value
Age, median (25th–75th percentile), y	46.0 (35.4–56.3)	46.2 (36.0–55.9)	45.8 (35.0–56.7)	0.929
Ethnicity <i>N</i> (%)				
Indian	4257 (74.2)	2008 (74.0)	2249 (74.4)	0.130
Afro-Malagasy	1317 (23.0)	618 (22.8)	699 (23.1)	
Chinese	162 (2.8)	88 (3.2)	74 (2.4)	
Education, <i>N</i> (%)				
None or 1–3 y	561 (9.8)	148 (5.5)	413 (13.7)	<0.001
4–6 y	2090 (36.4)	904 (33.3)	1186 (39.3)	
7–9 y	607 (10.6)	315 (11.6)	292 (9.7)	
10–12 y	1977 (34.5)	1036 (38.2)	941 (31.0)	
Tertiary	501 (8.7)	311 (11.5)	190 (6.3)	
Monthly family income ^a , <i>N</i> (%)				
<5000	1148 (20.1)	296 (10.9)	852 (28.3)	<0.001
5000 to <10,000	2015 (35.1)	972 (35.8)	1043 (34.6)	
10,000 to <15,000	1088 (19.0)	572 (21.1)	516 (17.0)	
≥15,000	1485 (25.9)	874 (32.2)	611 (20.1)	
Perception of overall health				
Poor or average	2057 (35.9)	847 (31.2)	1210 (40.0)	<0.001
Good or excellent	3679 (64.1)	1867 (68.8)	1867 (68.8)	
BMI classification <i>N</i> (%)				
Underweight	296 (5.2)	148 (5.5)	148 (4.9)	<0.001
Normal weight	2532 (44.1)	1335 (49.2)	1197 (39.6)	
Overweight	1981 (34.5)	932 (34.3)	1049 (34.7)	
Obese	927 (16.2)	299 (11.0)	628 (20.8)	

BMI = body mass index.

^a Mauritian rupees.

Survey. The study was approved by the local ethics committee.

BMI was calculated from measured weight (kg) divided by the height squared (metres). Overweight was defined as BMI 25–29.9 kg/m² and obesity as BMI ≥30 kg/m². Perceived healthy weight was assessed through the following question: “Do you think your current weight is?” Participants provided one of the following responses, “Too low”, “About right”, “A little too high”, or “Much too high”. Misperception of weight status among overweight and obese adults was defined by discordance between the actual weight category and the perceived weight as evidenced by answering “Too low”, or “About right” to the question on weight status perception.

The Kappa coefficient with 95% confidence intervals (CI) was calculated to measure agreement between perceived body weight status and measured weight status. The association of socio-demographic characteristics (age, ethnicity, education level, and monthly family income), and self-rated health to weight misperception prevalence among overweight or obese adults was examined in a multivariable Poisson regression model to estimate adjusted prevalence ratios (PRs) and 95% CI.

Results

Of the 6318 participants aged 20–74 years, who were non-pregnant and had complete data on ethnicity, we excluded those with missing information on age ($n = 36$), education level ($n = 64$), income level ($n = 281$), self-rated health ($n = 19$), weight perception ($n = 131$) and BMI ($n = 51$). Our analytic sample was 5736 participants (90.8% of the eligible sample).

On the basis of calculated BMI, 50.7% of the total participants were overweight or obese (Table 1). The overall percentage of agreement among those who judged their own weight status correctly was 67.2%. In both sexes, the Kappa coefficient indicated weak agreement (0.40–0.41) between perceived weight status and actual BMI. Overall, 40.8% of overweight or obese adults misclassified their own weight status (men: 45.3% vs. women: 37.5%; $p = 0.0001$). Among adults who were overweight or obese, weight misperception was increasingly less likely among those with increasing education (men: $p = 0.02$; women: $p \leq 0.001$) but was more likely among those who perceived their overall health as good or excellent (men: PR = 1.29, 95% CI 1.10–1.52; women: PR = 1.42, 95% CI 1.26–1.60). Adults who were overweight or obese,

Table 2 Correlates of misperceived weight status among overweight or obese Mauritian adults: Mauritius Non Communicable Diseases Survey 2009.

Characteristic	Adjusted prevalence ratio (95% CI)	
	Men	Women
Age group, years		
19–39	1 [reference]	1 [reference]
40–59	1.10 (0.92–1.31)	1.44 (1.23–1.69)
60–79	1.18 (0.95–1.46)	1.89 (1.59–2.23)
<i>p</i> for trend	0.086	<0.001
Ethnicity		
South Asian	1 [reference]	1 [reference]
Afro-Malagasy	0.97 (0.85–1.10)	0.97 (0.85–1.1)
Chinese	1.27 (0.93–1.72)	1.45 (1.27–1.65)
Education		
None or 1–3 y	1 [reference]	1 [reference]
4–6 y	0.95 (0.73–1.22)	0.96 (0.79–1.16)
7–9 y	0.79 (0.61–1.01)	0.68 (0.51–0.91)
10–12 y	0.80 (0.58–1.10)	0.53 (0.38–0.75)
Tertiary	0.72 (0.52–0.99)	0.24 (0.09–0.67)
<i>p</i> for trend	0.021	<0.001
Monthly family income (rupees)		
<5000	1 [reference]	1 [reference]
5000 < 10,000	0.90 (0.75–1.09)	0.93 (0.81–1.06)
10,000 < 15,000	0.88 (0.70–1.10)	0.73 (0.58–0.92)
≥15,000	0.73 (0.55–0.97)	0.65 (0.51–0.83)
<i>p</i> for trend	0.025	<0.001
Perception of overall health		
Average or poor	1 [reference]	1 [reference]
Good or excellent	1.34 (1.16–1.57)	1.48 (1.30–1.69)

weight misperception was increasingly less likely with increasing income (men: $p=0.025$; women: $p \leq 0.001$). Among women who were overweight or obese, weight misperception was increasingly more likely with increasing age ($p \leq 0.001$) and those who self-reported Chinese ethnicity (PR = 1.48, 95% CI 1.22–1.78).

Discussion

The high prevalence of weight misperception among overweight or obese Mauritian adults may reflect the increases in obesity prevalence during the past 22 years [3], where socially accepted “normal” weight may have also shifted accordingly. Women who were overweight or obese tended to misperceive their weight status less than men, similar to findings that suggest that women are more aware of their weight status than men [4,5]. Socio-cultural pressures to maintain a thin body weight are reported to affect women more than men [6] and therefore may be more sensitive of their weight and perceive their weight more accurately. Weight misperception is also known to increase with age in high-income countries [7], and might suggest the tendency of older adults to

consider weight gain as a normal aspect of ageing [8]. We found that Chinese women who were overweight or obese were more likely to misperceive their weight status compared to Indian women. Historically, Chinese societies have discouraged a preoccupation with physical appearance and thinness [9]. Western concepts and ideals of thinness could have been less fully internalised among Chinese women in Mauritius. We also found among overweight and obese adults, weight misperception was less prevalent for those with higher socioeconomic status. This may be because they have better access to health related information that raises awareness of their BMI [10]. Both men and women who were overweight or obese and who rated their overall health as good or excellent were more likely to misperceive their weight status. An explanation for this might be that adults who feel healthy and have no apparent disease or physical health limitations, may not believe that public health messages about excess weight apply to them (Table 2).

Our study has limitations. The cross sectional study design limited our ability to confirm the direction of any association between the identified correlates and weight misperception. Also, we were only able to assess body weight perception, which is a component of body image.

Conclusion

Further research is needed to investigate if correcting weight misperceptions may be a useful strategy to support adult obesity prevention and control in Mauritius.

Conflicts of interest

None.

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