
Health Service Research

Perceptions of overweight in a Caribbean population: the role of health professionals

Philippe Carrère^{a,b,c,*}, Nycrees Moueza^a, Vanessa Cornely^d,
Véronique Atallah^e, Jeannie Hélène-Pelage^a, Jocelyn Inamo^{b,e},
André Atallah^{c,f} and Thierry Lang^b

^aDepartment of General Medicine, University of the French West Indies and Guiana, Pointe-à-Pitre, France, ^bLaboratory of Epidemiology and Analysis in Public health, UMR 1027, INSERM, Paul Sabatier University, Toulouse, France, ^cRéseau HTA-Gwad, Basse-Terre, France, ^dGuadeloupe Regional Health Observatory, Baie-Mahault, France, ^eDepartment of Cardiology, University of the French West Indies and Guiana, Fort-de-France, France and ^fCardiology Unit, Hospital of Basse Terre, Basse-Terre, France.

*Correspondence to Philippe Carrère, Département de Médecine Générale, Faculté de Médecine Hyacinthe Bastaraud, Université des Antilles, Campus Universitaire de Fouillole, BP 250, 97157 Pointe-à-Pitre Cedex, Guadeloupe, France; E-mail: philippe.carrere@gmail.com

Abstract

Background. The prevalence of obesity and its complications is particularly high in the Caribbean. Underestimation of weight status could explain the failure by subjects concerned to adopt behaviours complying with medical recommendations. Little research is available on the role of health professionals in overweight perception.

Objective. To examine relationships between overweight underestimation and lack of communication on overweight diagnosis by health professionals in a multicultural Caribbean population.

Methods. A cross-sectional study, lead in 2014 on a sample representative of the population of Saint-Martin (395 subjects, 25–74 years). Overweight perception was assessed on Likert scale. Corpulence was assessed from measured waist circumference (WC). Individuals with excess abdominal adiposity (WC \geq 80 cm for women, \geq 94 cm for men) but stating they did not feel overweight were considered to underestimate their weight status. Patient-reported lack of communication on their diagnosis by health professionals was likewise explored. Respondents' first language defined cultural community. Multivariate analysis used logistic regression.

Results. Among individuals presenting excessive WC, 4 out of 10 did not perceive themselves as overweight. Six out of 10 said they had never been told about their weight by a health professional, whether or not they had their weight and waist measured by their referring physician in the preceding year. Independently from WC, overweight underestimation was associated with lack of communication on overweight diagnosis for both sexes. For women, overweight underestimation was associated with belonging to the Creole community.

Conclusion. Greater care is required when giving a diagnosis of overweight, particularly in social-cultural contexts where weight norms differ.

Key words: Body image, Caribbean, obesity, primary health care, screening, socioeconomic factors.

Background

In 1997, the World Health Organization ranked obesity as an epidemic (1). Despite a number of costly public health campaigns, obesity has remained a public health problem, and it is getting worse and worse (2). Its many health complications are well known. In the Caribbean population for instance, there is a high rate of obesity (2), high blood pressure (3) and diabetes (4), as well as a high incidence of stroke (5). Weight loss in patients with obesity could decrease their blood pressure and the risk of cardiovascular events. Any factor that could help reduce obesity is of considerable interest.

Several studies have shown that overweight perception is a major factor in weight control (6,7). However, the relationship between a person's 'real' corpulence, as defined by the anthropometric indicators available, and the mental representation of that corpulence, is complex. Indeed, the percentage of overweight subjects who consider themselves as such varies over time and according to the different communities under consideration. In 2007, among British people with obesity problems, one out of two women and three out of four men did not see themselves as being overweight. In 2012, the percentage of women underestimating their weight had increased yet again (8). In the USA, this underestimation is higher in the African-American population than it is in the European-American population, and this tendency is increasing with time (9). In the same way, people from a lower social rank are more likely to underestimate their weight (10). In fact, the notion of overweight seems to involve a variety of standards.

Screening is one of the most fundamental tasks for health professionals. Beyond diagnostic assessment criteria, in order to carry out screening, there has to be a clear communication of the assessment results. By referring to biomedical norms, a diagnosis can be given in such a way as to change people's representations. Few studies have explored the role played by health professionals in overweight perception (11).

Our aim was to study the relationship between underestimation of weight status and lack of communication on the diagnosis of overweight by professionals among patients from a multi-cultural Caribbean population.

Methods

Study design

We used data from the CONSANT-2 health survey, the aim of which was to collect data regarding major diseases and risk factors. This cross sectional study was carried out in 2014 on the island of Saint-Martin in the French West Indies, on a representative sample of the adult population, gathered by pseudo-random sampling. Its protocol was similar to the one used for the CONSANT study carried out in Guadeloupe in 2007 (3). Inclusion criteria were: age (25–74 years old), place of residence (in Saint-Martin for more than 12 months), and free informed consent from the participants.

Data collection and definitions

Data collection was carried out in respondents' homes by pairs of pre-trained interviewers using a questionnaire and measurements of the participants' waist, height and weight. The questionnaire was available in French, English, Spanish or Creole languages, depending on the linguistic preferences of respondents.

Weight perception was measured by the following question: 'How do you consider your weight, your corpulence?' with the following choice of possible answers: '(i) below normal, (ii) normal, (iii) a little above normal, (iv) above normal and (v) well above normal'. We considered that the subjects choosing 'a little above', 'above' or 'well above normal', considered themselves as overweight.

Their actual corpulence was assessed according to their waist circumference (WC) and their body mass index (BMI). For analyses based on WC, the threshold defining excess abdominal adiposity was set at 80 cm in women or 94 cm in men. According to the European Society of Cardiology (12) and the European Association for the Study of Diabetes (13), this threshold defines a level 1 increase in cardiovascular risk. At this level, lifestyle changes should be implemented in order to limit any additional weight gain and patients should be informed by professionals. For analyses based on BMI, the threshold defining overweight was set at 25 kg/m² in both sexes. Overweight underestimation was considered present in subjects who estimated their corpulence as normal or below the norm despite presenting excess abdominal adiposity or being overweight.

Any previous overweight diagnosis and patient information received on the subject was explored by the following question: 'Has a health professional already told you that you had a weight problem?' with the following choice of possible answers: '(i) No, (ii) Yes, I think so and (iii) Yes, definitely'. The last two categories were grouped together for the purposes of the analysis. Consultation with the referring physician and measurement of weight and WC in the preceding year were also assessed.

Two social status indicators were used: educational and income levels. Educational levels could either be: (i) primary school, (ii) above primary school but below or equal to junior high school diploma (15 year olds), (iii) above junior high school (16 year olds) but below or equal to senior high school diploma level and (iv) above senior high school diploma level. Taking into account the available data, the educational level variable was dichotomized into: > junior high school diploma, or ≤ junior high school diploma. Income level was derived from taxation status declared by the participants: taxable or tax exempt income. Briefly, in the French West Indies as in mainland France, adults who earn less than 10 000€ per year are exempt from income tax.

The participants' linguistic and cultural community was assessed by a question on the language mostly spoken at home or with friends. The population of the Saint-Martin Island is the result of migratory movements from the Caribbean islands and Europe. The local population speaks European languages (mainly French) or French, Spanish, Dutch or English Creole languages. We hypothesized that the everyday language might determine whether or not a person is able to grasp a biomedical representation of the body. This everyday language can also delineate a social group, characterized by common cultural traits and social norms, whatever the geographical origin or skin phototype. Taking account of the data available, the language variable was dichotomized into: Creole languages or French.

Statistical analysis

Statistical analysis was carried out on the data available, using Stata v.13 software. The characteristics of the population under study, previous overweight diagnoses and weight perception in subjects presenting excess adiposity or abdominal obesity were described in the usual way (mean or SD for quantitative variables with normal distribution, number and percentage for qualitative variables). Bivariate analyses of the factors associated with overweight underestimation were carried out using chi-square or Fisher tests. Multivariate analyses were performed using logistic regression. The multivariate models were subjected to a search for any interactions and to an analysis of residuals. The significance threshold of the statistic tests was 5%.

Results

The sample comprised 395 subjects including 54.9% women (Table 1). Mean age was 43.9 years old (SD = 11.6), 43.3 (SD = 11.6)

for women and 44.6 (SD = 11.7) for men. WC was 80 cm or more in 66.8% of the women and 94 cm or more in 42.7% of the men. Seven out of 10 participants had a BMI greater than or equal to 25 kg/m².

Among the individuals with excess abdominal adiposity (WC of 80 cm or more in women and 94 cm or more in men), 55.5% of women and 69.6% of men stated they had never been given a previous overweight diagnosis by a health professional (Table 2). These figures did not vary significantly among subjects who had seen their referring physician and had their weight and WC measured in the course of the year (data not shown).

Among the individuals with excess abdominal adiposity, 39.6% of the women and 48.6% of the men did not consider themselves as overweight.

In both sexes, overweight underestimation was very significantly associated with a lack of previous overweight diagnosis (Table 3). Among the subjects presenting excess abdominal

adiposity, 55.3% of the women and 66.7% of the men who stated they had never been informed about their weight by a health professional underestimated their weight status, against 19.7% of the women and 9.5% of men who had been diagnosed previously ($P < 10^{-3}$).

The effect of the cultural community was limited to women. Among subjects with excess abdominal adiposity, 50% of the Creole-speaking women did not consider themselves as being overweight, compared to 16.7% of the women speaking a European language ($P < 10^{-3}$). The relationship between weight underestimation and the Creole community persisted for women who had previously been told about their weight ($P = 0.042$).

In multivariate analyses (Table 4), the relationship between overweight underestimation and the absence of diagnosis and patient information on their excess weight remained strong and significant, particularly for men [odds ratios (OR) = 10.40 – 95% confidence interval (CI): 1.88–57.22] however excessive their WC. The risk of overweight underestimation strongly increased in Creole-speaking women (OR = 10.66 – 95% CI: 3.53–32.18), irrespective of WC and any previous overweight diagnosis.

The results of the bivariate (Appendix 1) and multivariate analyses (Appendix 2) based on BMI were similar.

Table 1. Population characteristics (pseudo-random sample of the Saint-Martin inhabitants)—CONSANT Saint-Martin 2014

	Men and women, (n) %	Women, (n) %	Men, (n) %
Gender			
Female	(217) 54.9		
Age, years			
25–34	(102) 25.9	(63) 29.2	(39) 21.9
35–44	(101) 25.6	(52) 24.1	(49) 27.5
45–54	(125) 31.7	(68) 31.5	(57) 32.0
55–74	(66) 16.8	(33) 15.3	(33) 18.5
Education level			
≤Junior High School Diploma	(212) 57.3	(109) 53.2	(103) 62.4
Income level			
Tax exempt	(278) 71.8	(157) 74.1	(121) 69.1
Place of birth			
Caribbean Islands	(333) 84.7	(189) 87.5	(144) 81.4
Linguistic community			
Creole	(232) 59.0	(127) 58.8	(105) 59.3
Waist circumference			
≥Level 1 ^a	(209) 56.2	(139) 66.8	(70) 42.7
Body mass index			
≥Level 1 ^b	(261) 70.0	(146) 71.2	(115) 68.5

Due to missing data, population size varies across variables.

^aWaist circumference ≥80 cm for women and ≥94 cm for men.

^bBody mass index ≥25 kg/m² for women and men.

Discussion

In this multi-cultural Caribbean population, 4 out of 10 individuals presenting excessive abdominal adiposity did not consider themselves as overweight. Six out of 10 said they had never been informed about their weight status by a health professional, whether or not they had consulted their referring physician or their weight/WC had been measured in the past year. Whatever the corpulence of individuals, underestimation of weight status was strongly linked to the lack of medical information about their weight status. For women only, belonging to a Creole community increased the risk of overweight underestimation considerably.

Our study has several limitations. The interactions between interviewers and patients could lead the participants to not mention that they feel overweight (social desirability bias and/or self-preservation bias). Data on earlier diagnosis of overweight was based on respondent report, and this exposes to recall bias. As a result, possible classification errors could be systematic and lead to overestimation of the link between informing the patients of the diagnosis and overweight perception.

In the USA in 2003–2008, one-third of the adults with abdominal obesity considered their weight to be normal (11), and more

Table 2. Access to screening, overweight diagnosis and overweight perception in subjects with excess abdominal adiposity^a or overweight^b—CONSANT Saint-Martin 2014

	Waist circumference ≥ Level 1 ^a		Body mass index ≥ Level 1 ^b	
	Women, (n) %	Men, (n) %	Women, (n) %	Men, (n) %
Reported consultation with referring physician in the preceding year				
No consultation reported	(14) 10.1	(14) 20.3	(15) 10.3	(25) 22.1
Reported weight or waist circumference measurement by a health professional in the preceding year				
No measurement reported	(37) 26.8	(26) 37.7	(37) 25.5	(47) 41.2
Stated having been informed of overweight status by a health professional				
No information reported	(76) 55.5	(48) 69.6	(77) 53.5	(88) 77.2
Perceived corpulence				
Normal or below normal	(55) 39.6	(34) 48.6	(56) 38.6	(65) 56.5

^aWaist circumference ≥80 cm for women and ≥94 cm for men.

^bBody mass index ≥25 kg/m² for women and men.

Table 3. Bivariate analyses of factors associated with underestimation of weight status in subjects with excess abdominal adiposity^a—CONSANT Saint-Martin 2014

	Underestimation of weight status			
	Women		Men	
	(n) %	P	(n) %	P
Stated having been informed of overweight status by a health professional				
Yes	(12) 19.7		(2) 9.5	
No	(42) 55.3	<10 ⁻³	(32) 66.7	<10 ⁻³
Linguistic community				
European	(7) 16.7		(14) 50.0	
Creole	(48) 50.0	<10 ⁻³	(20) 47.6	0.845
Education level				
>Junior High School Diploma	(13) 25.5		(8) 33.3	
≤Junior High School Diploma	(36) 45.0	0.024	(23) 54.8	0.093
Income level				
Taxable	(6) 21.4		(12) 50.0	
Tax exempt	(49) 44.6	0.026	(22) 47.8	0.863
Place of birth				
Outside the Caribbean	(3) 27.3		(6) 50.0	
Caribbean Islands	(52) 40.6	0.385	(28) 48.3	0.913
Age, years				
18–34	(16) 41.0		(5) 45.5	
35–44	(8) 28.6		(10) 50.0	
45–54	(19) 43.2		(10) 43.5	
55–74	(12) 44.4	0.583	(9) 56.3	0.879

^aWaist circumference ≥80 cm for women and ≥94 cm for men.

Table 4. Multivariate analyses of the relationships between underestimation of weight status and lack of communication on overweight diagnosis, waist circumference and linguistic community among subjects with excess abdominal adiposity^a—CONSANT Saint-Martin 2014

	Risk of underestimation of weight status					
	Women (n = 136)			Men (n = 69)		
	OR ^b	95% CI	P	OR ^b	95% CI	P
Stated having been informed of overweight status by a health professional						
Yes	1			1		
No	3.31	[1.37–8.02]	0.008	10.40	[1.88–57.22]	0.007
Waist circumference						
Per cm	0.94	[0.91–0.98]	0.003	0.85	[0.76–0.94]	0.002
Linguistic community						
European	1			1		
Creole	10.66	[3.53–32.18]	< 10 ⁻³	1.02	[0.28–3.73]	0.972

^aWaist circumference ≥80 cm for women and ≥94 cm for men.

^bLogistic regression of the variable underestimation of weight status with the explicative variables lack of communication on overweight diagnosis, waist circumference and linguistic community. Age, place of birth, education and income were excluded from the model because of the lack of significance of their effect.

than half reported they had never been screened for overweight. Our results are comparable and confirm the strong link suspected between medical screening for overweight and overweight perception. They also confirm that, whatever their access to care, a large

proportion of overweight subjects seem to be not properly informed on their weight status by health professionals. Beyond recall bias, several hypotheses can be put forward to explain this apparent discrepancy. It could be that certain doctors overestimate their patients' ability to perceive their weight. Referring physicians who are overweight themselves may be less likely to develop prevention strategies and overweight treatment (14). Health professionals may doubt their patients' ability to change their lifestyle and to control their weight in the long term (15), especially those who have been confronted with care failure. Others may be afraid of upsetting their patients by mentioning their overweight, for which today's connotations tend to be negative (16). And finally there may be an inadequate communication between health professionals and patients. We know that misunderstandings could arise from consultations and persist, particularly in cardiovascular prevention messages (17). These communication problems could alter an overweight diagnosis to such an extent that it would make any accompanying information ineffective. Expressions such as 'obese' and 'fat' may not be well accepted (18) because of their derogatory and stigmatizing characteristics. The meaning that is given to medical vocabulary may vary according to the social and cultural contexts (19). Some patients find it impossible to identify with the overweight or obesity qualification they have been given.

The relationship between overweight perception and linguistic community demonstrated in our sample has not yet, to our knowledge, been described in the literature. As we hypothesized, in the French Antilles a poor command of the French language could be an obstacle to accessing the biomedical conception of an overweight body. Belonging to the Creole community could also, as a corollary, lead to weight norms that are different from the ones embraced by the scientific community, particularly among women. This complies with the results of the few available studies on overweight perception that have been carried out among Caribbean adults. In Barbados in 2001, the ideal body image in women seemed to conform to the medical norm and to be below the perception these women had of their own body size. However, the body size they thought was appealing to men was significantly larger (20). This normalization of excess weight could be explained by the historical, anthropological and social constructions of Black femininity. A large body is thus thought to be a strong body, desirable because of its ability to resist many forms of adversity, including illnesses (21). In all events, ethnic group and social class can overlap. In our population, the Creole-speaking subjects often came from a low social background (data not shown, but available on demand). Underestimation of overweight is more widely observed in women with low educational or income level (10), and the drastic increase of overweight prevalence in these disadvantaged groups could also contribute to the normalization of overweight (9). Moreover, perceived or ideal body image as a social construction could stem from an opposition/resistance to medical opinion/power (21). The clash between social-cultural and medical injunctions makes things even more difficult when informing the patient of an overweight diagnosis.

Conclusion

Numerous overweight subjects appear not to be aware of their overweight status. Efficient diagnosis of overweight could correct these mistaken perceptions. Health professionals should bear in mind that detection of overweight is the first essential step in providing appropriate care. Announcing the diagnosis requires careful management, adapting discourse and devoting sufficient time for the message to be

understood by the patient. There is also a need to take better account of the representations and expectations of patients, and of the cultural environment in which they live, so as to make the message not only understandable but also acceptable.

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Declaration

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Ethical approval: Informed consent was obtained for each participant. The study protocol was submitted to the National Commission on Informatics and Liberty.

Conflict of interest: The authors declare that they have no competing interests.

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Appendix 1. Bivariate analyses of factors associated with underestimation of weight status in subjects with overweight^a—CONSANT Saint-Martin 2014

	Underestimation of weight status			
	Women		Men	
	(n) %	P	(n) %	P
Stated having been informed of overweight status by a health professional				
Yes	(13) 19.7		(4) 15.4	
No	(42) 54.6	<10 ⁻³	(61) 69.3	<10 ⁻³
Linguistic community				
European	(6) 14.3		(24) 57.1	
Creole	(50) 49.0	<10 ⁻³	(41) 56.2	0.919
Education level				
>Junior High School Diploma	(13) 24.1		(14) 38.9	
≤Junior High School Diploma	(37) 45.1	0.013	(44) 63.8	0.015
Income level				
Taxable	(6) 22.2		(16) 51.6	
Tax exempt	(50) 42.7	0.049	(47) 57.3	0.586
Place of birth				
Outside the Caribbean	(2) 20.0		(6) 42.9	
Caribbean Islands	(54) 40.3	0.316	(28) 58.4	0.271
Age, years				
18–34	(12) 33.3		(13) 65.0	
35–44	(9) 31.0		(20) 58.8	
45–54	(21) 41.2		(16) 43.2	
55–74	(14) 50.0	0.426	(16) 66.7	0.229

^aBody mass index ≥ 25 kg/m² for women and men.

Appendix 2. Multivariate analyses of the relationships between underestimation of weight status and lack of communication on overweight diagnosis, body mass index and linguistic community among subjects with overweight^a—CONSANT Saint-Martin 2014

	Risk of underestimation of weight status					
	Women (n = 136)			Men (n = 69)		
	OR ^b	95% CI	P	OR ^b	95% CI	P
Stated having been informed of overweight status by a health professional						
Yes	1			1		
No	2.51	[1.04–6.06]	0.041	9.15	[2.58–32.41]	0.007
Body mass index						
Per kg/m ²	0.84	[0.76–0.92]	<10 ⁻³	0.85	[0.73–0.98]	0.031
Linguistic community						
European	1			1		
Creole	12.98	[4.14–40.66]	<10 ⁻³	0.66	[0.26–1.72]	0.400

^aBody mass index ≥ 25 kg/m² for women and men.

^bLogistic regression of the variable underestimation of weight status with the explicative variables lack of communication on overweight diagnosis, body mass index and linguistic community. Age, place of birth, education and income were excluded from the model because of the lack of significance of their effect.