

**Obesity, body self-perception and major depression:
Differentials by sex in Brazil**

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Abstract

The objective of this paper is to examine the association between obesity, body self-perception and major depression among men and women in Brazil. This study uses data from the National Survey on Social Inequality (2008) conducted by the Center for the Study of Wealth and Social Stratification (CERES), the Institute of Social and Political Studies (IESP). This survey collected information from 8,048 households and 12,326 individuals throughout Brazil. The Body Mass Index (BMI) (underweight ≤ 18.5 , normal weight = 18.5-24.9, overweight = 25-29.9 and obesity = BMI of 30 or greater) and self-perception will be used as the main independent variables. The dependent variable is the presence or absence of depression, which is attested by a health professional. Our results indicate the existence of an association between obesity, overweight and depression among men and an association between body self-perception and major depression among women.

Keywords: Obesity, body self-perception, Major depression, Brazil.

INTRODUCTION

The objective of this study is to determine whether there is an association between obesity, body self-perception and depression by sex.

MATERIAL AND METHODS

Population

This study used data a survey named "The social dimensions of inequality, 2008," which was coordinated by the Center for the Study of Wealth and Social Stratification (CERES), the Institute of Social and Political Studies (IESP). The research involved 25 researchers from 16 institutions in seven states of the country, in an attempt to understand and follow the dynamics of inequality and social mobility in Brazil. This research visited 8,048 permanent households in all regions of Brazil and collected information from 12,425 individuals, namely the head of household and spouse (8754), or just the head (3671), if there were no spouse.

Measurements

The incidence of major depression was self-reported by the respondent. It was asked to each individual if he had been diagnosed with the disease by a doctor or any other professional. The body mass index (BMI) was calculated from anthropometric measurements performed at the time of the interview (height and weight). BMI was defined using the following criteria: (≤ 18.5 underweight, normal weight = 18.5-24.9, overweight = 25-29.9 and obesity ≥ 30 or higher). The self-perception was measured from a question that the interviewee wondered how he felt his body, from the following options: slim, normal, overweight and fat.

We used the following covariates: age group, marital status, geographic region, household situation, use of cigarettes and alcohol, self-rated health, and the logarithm of income. Statistical analyzes were performed using multivariate logistic regression using Stata 10.

PRELIMINARY RESULTS

Table 1

Major depression, sex and BMI

BMI	Depression %	
	Men	Women
Underweight	11,1	15,2
Normal weight	6,1	16,0
Overweight	8,0	17,8
Obese	9,4	18,0
Total	7,5	17,0
N	5154	6971

Source: As dimensões sociais das desigualdades, 2008

Table 2

Major depression, sex and body self-perception

Body self-perception	Depression %	
	Men	Women
Thin	7,8	18,3
Normal weight	6,3	13,2
Overweight	8,7	20,2
Fat	11,4	20,2
Total	7,5	17,0
N	5225	7098

Source: As dimensões sociais das desigualdades, 2008

Table 3
Odds Ratio of Major depression by BMI
(Men)

Variables	B	Exp(B)	Sig	95,0% C.I. for EXP(B)	
BMI					
Normal weight		1,00			
Underweight	0,49	1,63	0,11	0,89	2,97
Overweight	0,37	1,44	0,01	1,10	1,89
Obese	0,50	1,66	0,00	1,19	2,31
Age,y					
Up to29		1,00			
30-39	0,72	2,05	0,02	1,13	3,72
40-49	0,73	2,07	0,01	1,16	3,69
50 +	0,70	2,02	0,01	1,15	3,55
Color/race					
Black		1,00			
White	0,39	1,48	0,00	1,16	1,89
Marital status					
Single		1,00			
Married	-0,74	0,48	0,00	0,32	0,72
Divorced / Widowed	-0,37	0,69	0,16	0,42	1,15
Self-rated health					
Very good		1,00			
Good	0,36	1,43	0,14	0,89	2,30
Reasonable	1,69	5,40	0,00	3,37	8,64
Bad	2,49	12,04	0,00	6,95	20,86
Very bad	3,05	21,07	0,00	9,34	47,54
Alcool					
Do not drink		1,00			
Moderate drinkers	0,15	1,16	0,30	0,88	1,53
Hard drinkers	0,38	1,46	0,02	1,06	2,01
Smoke					
Do not smoke		1,00			
Former smoker	0,01	1,01	0,94	0,76	1,35
Smoker	0,45	1,56	0,00	1,16	2,11
Log income	0,17	1,18	0,01	1,04	1,35

Source: As dimensões sociais das desigualdades, 2008

Table 4
Odds Ratios of Major depression by BMI
(Women)

Variables	B	Exp(B)	Sig	95,0% C.I. for EXP(B)	
BMI					
Normal weight		1,00			
Underweight	-0,08	0,93	0,68	0,65	1,33
Overweight	0,05	1,05	0,53	0,90	1,24
Obese	-0,06	0,94	0,51	0,78	1,13
Age,y					
Up to29		1,00			
30-39	0,34	1,41	0,01	1,07	1,86
40-49	0,16	1,17	0,26	0,89	1,53
50 +	-0,06	0,94	0,64	0,72	1,22
Color/race					
Black		1,00			
White	0,49	1,62	0,00	1,41	1,88
Marital status					
Single		1,00			
Married	-0,04	0,96	0,77	0,76	1,23
Divorced / Widowed	0,23	1,25	0,09	0,97	1,62
Self-rated health					
Very good		1,00			
Good	0,94	2,56	0,00	1,81	3,60
Reasonable	1,93	6,86	0,00	4,86	9,68
Bad	2,67	14,37	0,00	9,78	21,11
Very bad	2,92	18,58	0,00	10,38	33,25
Alcool					
Do not drink		1,00			
Moderate drinkers	0,15	1,16	0,09	0,98	1,38
Hard drinkers	0,45	1,57	0,01	1,12	2,19
Smoke					
Do not smoke		1,00			
Former smoker	0,21	1,23	0,02	1,03	1,46
Smoker	0,41	1,50	0,00	1,25	1,81
Log income	0,10	1,11	0,01	1,03	1,20

Source: As dimensões sociais das desigualdades, 2008

Table 5
Odds Ratio of Major depression by Body self-perception
(Men)

Variables	B	Exp(B)	Sig	95,0% C.I. for EXP(B)	
<i>Body self-perception</i>					
Thin		1,00			
Normal weight	-0,07	0,93	0,66	0,68	1,27
Overweight	0,22	1,24	0,15	0,92	1,67
Fat	0,34	1,40	0,12	0,91	2,16
<i>Age,y</i>					
Up to29		1,00			
30-39	0,73	2,07	0,02	1,14	3,76
40-49	0,73	2,07	0,01	1,16	3,70
50 +	0,72	2,06	0,01	1,17	3,63
<i>Color/race</i>					
Black		1,00			
White	0,40	1,49	0,00	1,17	1,90
<i>Marital status</i>					
Single		1,00			
Married	-0,72	0,49	0,00	0,32	0,73
Divorced / Widowed	-0,35	0,71	0,18	0,43	1,17
<i>Self-rated health</i>					
Very good		1,00			
Good	0,38	1,46	0,12	0,91	2,35
Reasonable	1,70	5,48	0,00	3,42	8,79
Bad	2,51	12,33	0,00	7,10	21,43
Very bad	3,06	21,23	0,00	9,35	48,24
<i>Alcool</i>					
Do not drink		1,00			
Moderate drinkers	0,14	1,15	0,33	0,87	1,52
Hard drinkers	0,35	1,42	0,03	1,03	1,96
<i>Smoke</i>					
Do not smoke		1,00			
Former smoker	0,00	1,00	0,99	0,75	1,33
Smoker	0,43	1,54	0,00	1,14	2,07
<i>Log income</i>	0,18	1,20	0,01	1,05	1,36

Source: As dimensões sociais das desigualdades, 2008

Table 6
Odds Major depression by Body self-perception
(Women)

Covariáveis	B	Exp(B)	Sig	95,0% C.I. for EXP(B)	
<i>Body self-perception</i>					
Thin		1,00			
Normal weight	0,24	1,27	0,02	1,04	1,57
Overweight	0,41	1,51	0,00	1,28	1,80
Fat	0,33	1,40	0,00	1,14	1,72
<i>Age,y</i>					
Up to29		1,00			
30-39	0,32	1,38	0,02	1,04	1,81
40-49	0,14	1,15	0,32	0,88	1,50
50 +	-0,05	0,95	0,68	0,73	1,23
<i>Color/race</i>					
Black		1,00			
White	0,48	1,61	0,00	1,39	1,86
<i>Marital status</i>					
Single		1,00			
Married	-0,06	0,94	0,63	0,74	1,20
Divorced / Widowed	0,22	1,25	0,09	0,96	1,62
<i>Self-rated health</i>					
Very good		1,00			
Good	0,93	2,53	0,00	1,80	3,57
Reasonable	1,88	6,54	0,00	4,64	9,23
Bad	2,60	13,48	0,00	9,17	19,83
Very bad	2,84	17,03	0,00	9,50	30,55
<i>Alcool</i>					
Do not drink		1,00			
Moderate drinkers	0,14	1,15	0,12	0,96	1,36
Hard drinkers	0,44	1,55	0,01	1,11	2,17
<i>Smoke</i>					
Do not smoke		1,00			
Former smoker	0,18	1,20	0,04	1,00	1,42
Smoker	0,42	1,52	0,00	1,26	1,82
<i>Log income</i>	0,09	1,10	0,02	1,02	1,18

Source: As dimensões sociais das desigualdades, 2008