

ORIGINAL

Relationship between self-perceived body image and excess weight among women in southern Morocco

Relación entre la imagen corporal autopercibida y el exceso de peso entre las mujeres del sur de Marruecos

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Abstract

Introduction and aim: The perception of obesity differs between societies. In developing countries, obesity was seen as a sign of high social status and a symbol of beauty and prosperity. In Western countries, obesity was viewed negatively and body control was seen as a mark of civilised society. The study, aims to describe perception womens in southern Morocco towards excess weight and the associated factors.

Methods: Study was conducted in health centres in the southern region of Morocco. Data were collected using a questionnaire. Weight and height were measured respectively by a mechanical/electronic scale and a tape measure graduated in centimetres. The perception was assessed using the Stunkard body shape assessment scale.

Results: Anthropometric data showed that 37.3% of women were normal weight, 33.9% (IC95% [30.03-37.77]) were overweight and 25.2% were obese (IC95% [21.65-28.75]). Results showed that over three quarters (76.04%; n=438) of the women were dissatisfied with their body image and 77% (n=443) of the participants considered overweight to be a disease. The study revealed that women who were satisfied with their body image (OR=0.235; CI95% [0.15-0.35]) and desire to lose weight had protective effects against developing overweight (OR=0.46; CI95% [0.30-0.70]). However, women with a positive representation of overweight women had a 1.60 risk of developing weight gain (OR=1.60; 95% CI [1.60-1.03]).

Conclusion: the study showed a change in the participants' perception of overweight. Reducing the magnitude of this public health problem requires strategies that consider this shift towards reducing the prevalence of weight gain, particularly among young women and students.

Keywords: Weight load, women, perception, overweight.

Resumen

Introducción y objetivos: La percepción de la obesidad difiere según las sociedades. En los países en desarrollo, la obesidad se consideraba un signo de alto estatus social y un símbolo de belleza y prosperidad. En los países occidentales, la obesidad se veía negativamente y el control corporal se consideraba una marca de sociedad civilizada. El estudio pretende describir la percepción que tienen las mujeres del sur de Marruecos del exceso de peso y los factores asociados.

Metodología: El estudio se realizó en centros de salud de la región sur de Marruecos. Los datos se recogieron mediante un cuestionario. El peso y la estatura se midieron respectivamente con una báscula mecánica/electrónica y una cinta métrica graduada en centímetros. La percepción se evaluó mediante la escala de evaluación de la forma corporal de Stunkard.

Resultados: Los datos antropométricos mostraron que el 37,3% de las mujeres tenían un peso normal, el 33,9% (IC95% [30,03-37,77]) tenían sobrepeso y el 25,2% eran obesas (IC95% [21,65-28,75]). Los resultados mostraron que más de tres cuartas partes (76,04%; n=438) de las mujeres estaban insatisfechas con su imagen corporal y el 77% (n=443) de las participantes consideraban que el sobrepeso era una enfermedad. El estudio reveló que las mujeres que estaban satisfechas con su imagen corporal (OR=0,235; IC95% [0,15-0,35]) y el deseo de perder peso tenían efectos protectores frente al desarrollo de sobrepeso (OR=0,46; IC95% [0,30-0,70]). Sin embargo, las mujeres con una representación positiva de las mujeres con sobrepeso tenían un riesgo de 1,60 de desarrollar un aumento de peso (OR=1,60; IC95% [1,60-1,03]).

Conclusión: El estudio mostró un cambio en la percepción del sobrepeso por parte de las participantes. La reducción de la magnitud de este problema de salud pública requiere estrategias que consideren este cambio para reducir la prevalencia del aumento de peso, en particular entre las mujeres jóvenes y los estudiantes.

Palabras clave: Carga ponderal- mujeres- percepción- sobrepeso.

Introduction

Obesity is a multifactorial public health problem. Its perception differs from one society to another. In developing countries, it is considered a sign of high social status and is a cultural symbol of beauty, fertility and prosperity. In these countries, people tended to underestimate their weight. Indeed, a study in Tanzania found that both overweight and obese men and women did not perceive themselves as such¹. In African cultures, weight is considered a sign of good health and weight loss is associated with acquired immunodeficiency syndrome (AIDS) and women are not motivated to engage in physical activity for fear of losing weight and being stigmatised as having AIDS². Among South African women, thinness is not necessarily perceived as beauty; instead, being overweight is synonymous with beauty, health and higher social status. Furthermore, black African women associate being overweight with happiness, wealth and freedom from disease (such as HIV/AIDS)³.

In contrast, a review of the literature conducted among African immigrants in Europe revealed wide variability in body image perception: African residents generally showed a preference for body weight over their immigrant counterparts, but differences in preferences emerged according to region of residence, ethnicity and social and cultural factors even within the same population. There is also evidence that subjects more aligned with Western values wanted to be thinner than those more aligned with African values⁴.

In Arab society, fatness was traditionally considered a symbol of fertility and femininity⁵.

In Morocco, a study found that the majority of women (90.4%) reported wanting to gain weight. To gain weight, Sahrawi women used a period of fattening through overeating, reduced physical activity and consumption of particular traditional meals. In addition, there was also the

use of appetite stimulants, traditional suppositories and sometimes corticosteroids to accelerate weight gain⁶.

In Western countries, obesity is a Western term, suggesting a lack of control by the individual over their own body. But such an assessment may not accurately represent the body image assessments of other cultures, or even of the Western world itself. In 19th century Europe, obesity was viewed negatively and body control was seen as a mark of civilised society. Thus, in most Western countries, people of high socio-economic status (SES) are thinner than those of low SES. In addition to lifestyle; smoking, physical activity and diet certainly have an influence on weight loss⁷.

In European Union countries, 45% of individuals were dissatisfied with their weight. 40% considered it to be very high and 5% very low. Women were more dissatisfied (51%) than men (39%), although they were generally overweight or obese. The reason for dissatisfaction among women is that being overweight is a more serious problem than being underweight. For example, 46% of women in Europe thought their weight was too high, almost as many as those who were satisfied with their weight (49%). The subjective perception of being overweight is also observed in the USA, where 38% of 'normal' weight women consider themselves to be overweight⁸.

On the other hand, adolescents and young adults are more interested in their body image due to the effect of the mass media, which emphasise the importance of having a normal body shape and that slim figures are symbols of beauty and good health.

Recent studies have shown that a large proportion of these young people tend to want to be thin. Indeed, a study conducted among students showed that 33.27% wanted to be thin⁹. This weight reduction is more desired in overweight subjects who are generally dissatisfied with their body image. Indeed, the study by Priya, D., et

al. showed that attempts to change weight depended on image perception and that all females who felt thin wanted to increase their weight; whereas females who felt overweight wanted to reduce their weight¹⁰. Thus, there is currently a change in the perception of obesity, especially among young adults and adolescents in Arab countries. Indeed, a growing proportion of Lebanese adolescents consider thinness as a sign of feminine beauty. Thinness is now valued by young urban women almost everywhere, largely due to the propagation of thin models by the media and fashion industries¹¹. This is therefore an increasingly westernised view of the ideal body image, where thinness is now considered a beautiful characteristic of women^{5,12}.

In the light of these studies, there has been a shift in the perception of overweight and a tendency for young women in particular to become slim. In this perspective of changing perceptions, this study aimed to describe the perception of women in southern Morocco towards excess weight and the associated factors.

Materials and Methods

Study participants

This is a multicentre cross-sectional study conducted among adult women attending health centres in the provinces of the southern region of Morocco.

1 Inclusion and exclusion criteria

The participants in the study were non-pregnant women over 18 years of age who consulted health centres of the region. All women who satisfied the inclusion criteria and agreed to participate in the study were retained.

A number of 576 women consented to participate in this study, validated by the ethics committee of the Faculty of Medicine and Pharmacy of Rabat N°50/20 of 28/6/2020.

Data collection instrument

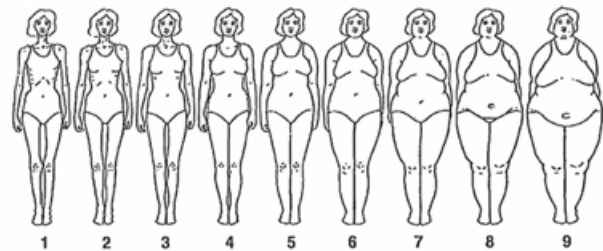
Epidemiological and socio-demographic data such as: age, sex, weight, height, ethnicity, marital status, socio-economic level was collected through a questionnaire. Weight and height were measured respectively by a mechanical/electronic scale of the SECA type and a tape measure graduated in centimetres. The body mass index (BMI) was calculated using the following formula $BMI (kg/m^2) = \text{weight (in kg)} / \text{height}^2 (\text{in } m^2)$. These measurements were made according to World Health Organization (WHO) recommendations¹³. In addition, Overweight is defined as a BMI equal to or greater than 25 kg/m^2 and obesity as a BMI equal to or greater than 30 kg/m^2 ¹⁴.

Measurement of perceived body image

Participants' perception of body image was measured by the Figure Rating Scale (Stunkard Figures)¹⁵. It consists of a series of nine figurines (or silhouettes) representing

the face of the female body from the leanest to the fattest. Each woman is asked to indicate which one corresponds best to her (perceived body) and which one corresponds to what she would like to be (ideal body). Figures 1 and 2 represent a low weight. Figures 3 and 4 represent normal weight. Overweight is represented by Figures 5 to 7, while figures 8 and 9 represent obesity¹⁶. (Figure 1).

Figure 1: Stunkard figurines representing women from the slimmest to the heaviest.



Measurement of body image satisfaction

Body image dissatisfaction was calculated as the difference between perceived weight and ideal weight (Feel minus Ideal Discrepancy (FID)). A score of 0 indicated satisfaction with body image and negative or positive scores indicated dissatisfaction with body image¹⁷.

A body size satisfaction variable was created for each participant by subtracting the number of the silhouette selected as ideal body size from the number of the silhouette selected as personal body size. Four dummy variables were created for body size satisfaction based on the difference between personal body size and ideal body size: too small (ideal size - personal size < 1), satisfied (ideal size = personal), a little too large (ideal size - personal size = 1) and much too large (ideal size - personal size > 1)¹⁶.

Statistical analyses

Data processing was done by SPSS version 13.0 statistical data processing software after coding. The qualitative variables were described in numbers and percentages and then compared by chi-square test. The quantitative variables were described as mean \pm standard deviation. Factors associated with obesity/overweight were determined by binary logistic regression through the calculation of odds ratios (OR) and 95% confidence intervals (CI). In all analyses, a $P \leq 0.05$ was considered statistically significant.

Results

Participant characteristics

A number of 576 women participated in the study. The mean age of the participants at the time of the study was 28.7 ± 10.2 years with a range of 18 to 62 years.

Table I shows that more than three quarters (79%; n=454) of the women studied were 37 years of age or younger. As for ethnicity, the survey results showed that 49% (n=284) of the participants were of Arab ethnicity and 30% (n=170) were of Sahrawi Arab ethnicity.

The study of the racial groups of the participants showed that 82% (n=471) of the women surveyed were white and 13% (n=74) were mixed race.

The distribution of participants by marital status showed that more than half (n=309) were married. The proportion of single women at the time of the survey was 37% (n=213).

The data from the study concerning the occupation of the participants revealed that housewives represented 40.1% (n=231), the proportion of students was 34.4% (n=198) while those in paid employment reached 25.5% (n=147).

The study of the monthly family income of the women studied showed that about two thirds (n=362) reported an income of at least 555.92 United State Dollar (USD), while 25% (n=144) had an income between 556.03 and 1111.95 USD and only 12% (n=70) of the participants had an income of more than 1112.06 USD. The data collected on education levels showed that 36.1% (n=208) of the women recruited had a higher level of education, and 26.6% (n=153) had no more than primary education, while 12.8% (n=74) had no education. (**Table I**).

Table I: Distribution of the population by socio-demographic characteristics.

Variables	Frequency	Percentage
Age		
[18-27]	293	50.9
[28-37]	161	28.0
[38-47]	89	15.5
[48-57]	26	04.5
Over 58 years	7	01.2
Ethnicity		
Sahrawi Arabic	170	29.5
Arabuc	284	49.3
Amazigh	122	21.2
Race		
White	471	81.8
Black	31	05.4
Metis	74	12.8
Marital status		
Married	309	53.6
Single	213	37.0
Divorced and widowed	54	09.4
Profession		
Housewife	231	40.1
Civil servant	97	16.8
Employee	50	8.7
Student	198	34.4
Monthly income (USD)		
Less than 278.02	174	30.2
[278.02-555.92]	188	32.6
[556.03-1111.95]	144	25
More than 1112.06	70	12.2
Education level		
Literate	74	12,85
Primary	153	26.56
Secondary	141	24.48
Higher	208	36.11

USD: United State Dollar

Weight status and perceived body image

The results of the survey (**Table II**) revealed that the average weight recorded in the study population was 70.84 ± 14.92 Kg and the average height was 1.63 ± 0.065 m. The mean body mass index (BMI) was 26.70 ± 5.36 Kg/m² with extremes ranging from 13.15 Kg/m² to 43.82 Kg/m².

Normal weight accounted for 37% (N=215) of the women studied, 34% (N=195) were overweight and 25% (N=145) were obese. Thus, 59% were overweight.

As for the participants' choice of image regarding their current weight, 4.34% (N=25) considered their weight to be low, 39.41% (N=227) considered their weight to be normal, 50% (N=288) considered themselves to be overweight and 6% (N=36) declared themselves to be obese.

The data collected showed that over three quarters (76.04%; N=438) of the women were dissatisfied with their body image. Only one hundred and thirty-eight women (23.96%; N=138) reported satisfaction with their body image.

The study of body size satisfaction showed that 52% (N=301) would have a small waist, 24% (N=138) would have a satisfactory waist, 15% (N=89) would have a large waist and 8%

(N=48) of the women had a much too large waist.

Concerning the representations of overweight, the results of the study showed that 77%

Table II: Distribution of women according to representations of overload.

Variables	Frequency	Percentage
Weight status		
Underweight	21	03.6
Normal weight	215	37.3
Overweight	195	33.8
Obese	145	25.2
Perception about the excess weight		
Illness	443	76.91
Sign of beauty	96	16.67
Sign of wealth	19	03.30
Sign of good health	18	03.13
Satisfaction with the body image		
Yes	138	23,96
No	438	76,04
Perception of body image		
Size little small	301	52,26
Satisfactory size	138	23,96
Size a little large	89	15,45
Size a little too large	48	8,33
Women's perceptions of excess weight		
Sick	271	47,05
Suffers from poor quality of life	172	29,86
Loved by men	79	13,72
Hated by people	21	3,65
Healthy life	33	5,73

(N=443) of the participants considered overweight to be a disease, while 17% (N=96) perceived fatness as a sign of beauty. For 3% of the women, being overweight is a sign of wealth and an indicator of good health.

Regarding the participants' representations of overweight women, the results of the study showed that 47% (N=271) of the participants think that these women are sick, and 30% (N=172) consider them to have a poor quality of life. A proportion of 14% (N=79) of the participants saw obese women as being preferred by men and only 4% felt that overweight women were disliked by men (Table II).

Binary regression analysis

Binary regression analysis between overweight and perceived body image revealed that women who were satisfied with their body image (OR=0.235; CI95% [0.15-0.35]) and desire to lose weight had protective effects against developing overweight (OR=0.46; CI95% [0.30-0.70]). However, women with a positive representation of overweight women had a 1.60 risk of developing weight gain (OR=1.60; 95% CI [1.60-1.03] (Table III).

Discussion

This study involved five hundred and seventy-six (576) women with a mean age of 28.7 ±10.2 years, almost half were of Arab ethnicity, 43% were married and more than a third had a higher level of education. Being a housewife or a student were the dominant occupations among the participants, almost two-thirds of whom had an income of less than 555.92 USD and more than two-thirds of whom had at least one child.

Anthropometric data showed that the average weight of the women was 70.84 ± 14.92 Kg and the average height recorded was 1.63 ± 0.065 m. Furthermore, the average body mass index (BMI) was 26.70 ± 5.36 Kg/m². Thus, 37% (n=215) were of normal weight, one in three women

(34%) were overweight and one in four women (25%) were obese. Therefore, 59% of the women suffered from excess weight. In general, these results confirm that this increase affects women more than men. Indeed, a study in Saudi Arabia showed an increase from 21% to 78% in women between 1992 and 2022¹⁸. Thus, the decrease in the prevalence of overweight among young women, compared to older women, may also reflect a shift in the perception of "obesity" from being a sign of beauty and prosperity among women (19,20); to a symbol of underdevelopment. This is especially true for younger, higher educated women who are more likely to adopt lower risk behaviours for obesity as a result of exposure to Western culture²¹⁻²³.

As for body image perception, 67% of dissatisfied women were overweight. Studies conducted in 2014, by El Ansari et al. and Garousi et al. affirmed these results^{24,25}.

As for the perception of the most attractive image for men according to the women studied, more than 61% of the participants had chosen images 3 and 4 that represented normal weight. These results were similar to other studies⁴. However, a study examining the interaction between weight status and perceived body image showed a preference for heavier women²⁶. This difference in perception could be explained by the fact that an individual's body image may be more a response to cultural norms than to actual physical dimensions. The process of acculturation is a psychosocial change that occurs when an individual acquires the values and norms of other cultures. It is currently known that television, for example, emphasises an ideal image of thinness, which in turn can influence the perception of body image. Magazine images, such as photographs, stories and advertisements, may also encourage dissatisfaction with body image²⁷. As a result, subjects' perceptions have shifted towards a preference for thinner body sizes as a symbol of female beauty over fat women. Thinness is now preferred by young women almost everywhere,

Table III: Binary regression analysis between overweight and perceived body image.

Variables	n	(%)	OR	IC _{95%}	P
Desire to lose weight					
Yes	44	43	0.46	[0.30-0.70]	0.0004
No	296	62	1		
Satisfaction with body image					
Yes	43	32	0.23	[0.15-0.35]	< 0.0001
No	297	67			
Perception of excess weight as a disease					
Yes	260	59	0.96	[0.65-1.43]	P = 0.86
No	80	60	1		
Positive representations of overweight women					
Yes	74	68	1.60	[1.03-2.48]	0.04
No	266	57	1		
Positive representations of overweight women					
Yes	74	68	1.60	[1.03-2.48]	0.04
No	266	57	1		

*IC: 95% confidence interval; OR : Odds Ratio.

largely due to the propagation of thin models by the global mass media, satellite channels and the propagation of top models. Women with positive representations of overweight were at risk of developing overweight, the choice of normal body images as the most attractive to men reflects the beginning of the shift from perceptions of overweight as a sign of beauty and prosperity to perceptions referring to illness and poor quality of life.

The survey results also highlighted that more than three quarters of the women considered obesity to be a disease and 21% had a positive view of it. However, the odds ratio was 1.6 times higher among these women, which put them at risk of being overweight. Although the results, in general, of body image perception are in favour of a shift towards normal or slim size preferences, culture and traditions still influence these choices.

Although this work has many advantages, it has some weaknesses: The main limitation of this study is its cross-sectional nature, which prevents a causal relationship between perceptions and overweight. In addition, there is the "social desirability bias", where participants would tend to give socially desirable answers. This is the case,

for example, when seeking to assess their perception of their body image and the perception of being overweight and the most attractive image for men.

Prospects

Conduct further prospective studies in other regions in both men and women
Conduct a similar study among university students

Conclusion

The risk factors are multiple and complex. The study showed a change in the participants' perception of overweight. Reducing the magnitude of this public health problem requires strategies that take into account this shift towards reducing the prevalence of weight gain, particularly among young women and students.

Conflicts of interest

The authors declare no conflict of interest.

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