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Relationship between perceived quality of life and obesity in gynecological patients of reproductive age

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Abstract

Introduction: Obesity is related to a decrease in the quality of life in the general population due to the morbidity and mortality it entails. There are multiple studies on the relationship between obesity and gynecological conditions but there are few that relate obesity in women of reproductive age with the perception of their quality of life. Methods. Observational, descriptive, and cross-sectional study carried out in patients who attended a general gynecology consultation. The self-administered WHOQOL-BREF quality of life survey was delivered consecutively to patients in our healthcare area. Sociodemographic variables were collected as well as the patients' body mass index. Results. 210 responses were obtained. The mean age was 36.06 years (95% CI 34.83-37.29). The mean BMI was 27.36 kg/m2 (95% CI 26.37-28.35). A total of 59 patients (28.1%) had obesity (BMI≥30 kg/m2). Both the global score of perceived quality of life satisfaction, as well as the one divided by subscales (physical, psychological, social relationships, and environment) were significantly lower in patients with obesity. 94.7% of the patients with obesity considered that they had to lose weight. Conclusions: There is an inversely proportional relationship between obesity and patients' self-perceived global satisfaction according to the WHOQOL BREF survey in all subscales.

Keywords:

- Obesity
- Gynecology
- Quality of life
- WHOQOL-BREF

Introduction

The World Health Organization (WHO) defines obesity in adults as having a body mass index (BMI) of BMI ≥ 30 kg/m^2. It is determined by multiple factors, notably genetics or socioeconomic status, particularly diet. According to the INE (National Statistics Institute), obesity is present in 16% of the Spanish population, rising to 17.5% in the Canary Islands (1).

Quality of life is defined by the WHO as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns, all moderated by their physical health, psychological state, level of independence, social relationships, environmental factors, and personal beliefs" (2).

Currently, numerous scientific research works use the concept of "health-related quality of life" (HRQOL) to refer to the patient's perception of the effects of a disease or treatment on various areas of their life (3).

One of the studies on the impact of obesity on HRQOL, with a sample of 18,682 adults from the 2011-2012 Spanish National Health Survey, observed lower HRQOL in women compared to men in all BMI ranges except for cases of BMI < 18 kg/m^2, implying that a high BMI affects women to a greater extent. "Compared to their respective normal-weight groups, obese women lost 0.185 Quality Adjusted Life Years

(QALY) per year versus 0.063 in men" (4).

The study by Kolotkin RL et al., which includes 67.4% women, concludes that obesity-specific HRQOL was more affected for those with high BMI, Caucasians, and women. To assess this health-related quality of life, they used the Impact of Weight Quality of Life-Lite questionnaire (5).

In quality of life, besides physiological determinants, self-perception or mood also play a role. The deterioration in quality of life that obesity entails can be as severe as its effects on morbidity and mortality. Thus, losing a small amount of weight is not related to clinical-analytical improvement, but to a better perception of oneself and, therefore, a better quality of life (6).

WHOQOL-BREF is a validated survey developed by the WHO that assesses different aspects of patients' quality of life, considering it as multidimensional (7).

The economic crisis and sociocultural level have influenced the development of obesity, with an increase in women's BMI compared to men in lower social classes. Education could be considered a protective factor against obesity, especially in women. Education can protect against obesity by itself and in the context of socioeconomic status, as higher status is associated with greater knowledge about nutrition and health, access to resources, less stress, and better mental health (8).

There are many scientific articles associating obesity in gynecological patients with reproductive difficulties, adverse perinatal outcomes, or an increased prevalence of certain pathologies, as well as higher healthcare costs in these patients (9-12). However, there are not many articles linking obesity in young women with their perceived quality of life (5, 13).

Our objective is to assess whether there is an impact of obesity on perceived quality of life (using the WHOQOL-BREF survey as a tool) among young (premenopausal) patients who visit the gynecology clinic for any reason. Secondarily, it was analyzed whether women with obesity do not recognize their condition and if they are aware of the convenience of losing weight.

Material and methods

This observational, descriptive, and cross-sectional study was conducted with prior informed consent in women recruited from the general gynecology clinic at the Health Area of the University Hospital of the Canary Islands (Tenerife) from January 2022 to October 2022. Minors under 16 and postmenopausal patients were excluded.

The "Personal Quality of Life Survey" (a validated Spanish model of the WHOQOL-BREF survey) was given to this study population, and the results were related to BMI. The survey consists of 26 questions that are answered by scoring from 1 to 5, with 1 corresponding to "not at all" and 5 to "completely." Therefore, the minimum possible global health score is 26 points and the maximum is 130 points. The survey is divided into subscales considering physical and psychological health, social relationships, environmental health, and global health. The total score and the score divided by subscales were calculated.

To know the characteristics of the surveyed population, various demographic variables were collected: age, education level, marital status, parity, BMI, self-perception of overweight/obesity, desired weight loss, and reason for the gynecological consultation.

The information was coded and stored in an anonymized data sheet. Statistical analysis was performed with the SPSS program (Version 25.0, IBM Corp, Armonk, NY). Statistical significance was established with $p < 0.05$ and 95% CI. Student's t-test was used to compare means between groups for normal variables. Correlation analysis was performed using Pearson's correlation coefficient. Descriptive analysis of variables was performed using mean measures and 95% confidence interval (CI95%). For comparing qualitative variables, the Chi-square test and contingency tables were used, and ANOVA for those with more than two categories. The study received favorable opinion from the local Ethics Committee.

Results

A total of 210 consecutive responses were obtained, with all recruited patients responding, 28.1% of responses from patients with obesity (n = 59) and 71.9% from patients without obesity (n = 151). The mean BMI was 27.36 kg/m² (95% CI 26.37-28.35).

No significant differences were observed in demographic variables between the two groups, except for the number of children and perceived weight loss, which were higher in the obese group (Table 1). No differences were observed in the reason for gynecological consultation

between the two groups (p>0.05), with the reasons for consultation in patients with and without obesity being: breast pathology 17.3% vs. 16.1%; lower genital tract pathology 22.7% vs. 16.1%; bleeding 28% vs. 32.1%; polycystic ovary syndrome 3.3% vs. 7.1%; and family planning 28.7% vs. 28.6%.

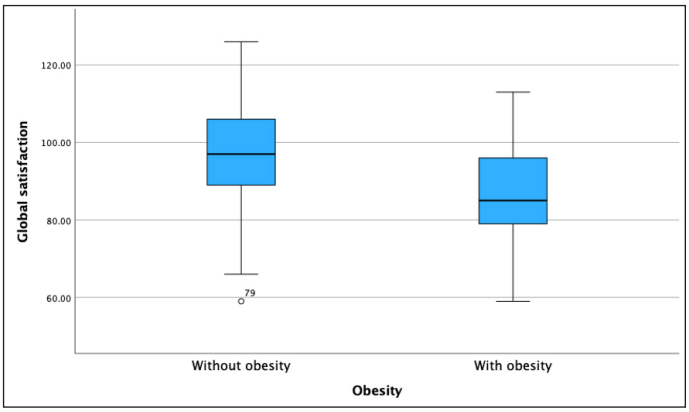
Variables	Sin obesidad n=151	Con obesidad n=59	Valor p
Age (mean, 95% CI)	35,89 (34,46-37,32)	36,36 (33,92-39,79)	0,71
Average number of children (mean, 95% CI)	0,74 (0,60-0,88)	1,04 (0,74-1,33)	0,03*
Higher education (n, %)	110 (72,4%)	42 (27,6%)	0,86
Living with a partner (n, %)	63 (67,7%)	30 (32,3%)	0,23
Perceived weight to lose (mean, 95% CI)	2,41 (1,63-3,19)	29,14 (24,71-33,56)	0,00*

** Statistically significant*

Table 1. Demographic and clinical characteristics of the sample patients.

The average global satisfaction score of the sample was 93.92 points (95% CI 92.02-95.83) with a range of 59 to 126. The results of the global satisfaction score in relation to obesity are shown in Figure 1.

Figure 1. Difference in overall score between patients with obesity and without obesity (p<00001).



In relation to the division of the WHOQOL-BREF survey into subscales, there is a significant relationship between the variable obesity and the score of all subscales, all statistically significant (Table 2).

	Without obesity (mean, 95% CI)	Con obesidad (Media e IC 95%)	p (t-Student)
Global satisfaction score	97 (94.91-99.10)	85.9 (82.45-89.34)	p<0.0001
Physical health subscale	26.42 (25.73-27.10)	23.50 (22.35-24.64)	p<0.0001
Psychological health subscale	22.19 (21.62-22.75)	19.28 (18.25-19.34)	p<0.0001
Social relationships subscale	11.62 (11.27-11.95)	10.76 (10.12-11.39)	p=0.0125
Environmental health subscale	25.50 (24.78-26.20)	22.61 (21.55-23.51)	p<0.0001
Global health	7.40 (7.19-7.62)	6.24 (5.85-6.61)	p<0.05

Table 2. Global satisfaction score and subscale scores in patients without obesity and with obesity.

Responses to the WHOQOL-BREF questions divided by subscales (physical, psychological, social, environmental, and global health) show significant differences between the two groups (ANOVA) in the responses to the following questions: How much do you need any medical treatment to function in your daily life? Do you have enough energy for daily life? Are you able to get around easily? How satisfied are you with your ability to perform daily activities? How satisfied are you with your capacity for work? How much do you enjoy life? To what extent do you feel your life has meaning? Are you able to accept your physical appearance? How satisfied are you with yourself? How often do you have negative feelings such as sadness, hopelessness, anxiety, depression? How satisfied are you with your personal relationships? How satisfied are you with the support you get from your friends? How safe do you feel in your daily life? Do you have enough money to meet your needs? How available is the information you need in your daily life? To what extent do you have opportunities for leisure activities? How satisfied are you with the conditions of the place where you live? How would you rate your quality of life? How satisfied are you with your health? The scores are shown in Table 3 (a-e).

WHOQOL-BREF Question	Without obesity	With obesity
	n(%)	n(%)
To what extent do you feel that physical pain prevents you from doing what you need? p=0.064		
Not at all	1(0,7%)	2(3,4%)
A little	19 (12,6%)	14(23,7%)
Moderately	43(28,5%)	12(20,3%)
Quite a lot	48(31,8%)	20(33,9%)
Extremely	40(26,5%)	11(18,6%)
How much do you need any medical treatment to function in your daily life? * p=0.01		
Not at all	0(0%)	1(1,7%)
A little	13(8,6%)	10(16,9%)
Moderately	26(17,2%)	10(16,9%)
Quite a lot	43(28,5%)	21(35,6%)
Extremely	69(45,7%)	16(27,1%)
Do you have enough energy for everyday life? * p=0.002		
Not at all	3(2,0%)	1(1,7%)
A little	13(8,6%)	10(16,9%)
Moderately	40(26,5%)	26(44,1%)
Quite a lot	72(47,7%)	19(32,2%)
Totalmente	23(15,2%)	3(5,1%)
Are you able to get around by yourself? * p=0.003		
Not at all	1(0,7%)	0(0,0%)
A little	4(2,6%)	5(8,5%)
Moderately	16(10,6%)	13(22,0%)
Quite a lot	62(41,1%)	25(42,4%)
Extremely	68(45,0%)	16(27,1%)
How satisfied are you with your sleep? p=0.08		
Very dissatisfied	12 (7,9%)	5 (8,5%)
Dissatisfied	30 (19,9%)	18 (30,5%)
Moderately	53 (35,1%)	24 (40,7%)
Quite a lot satisfied	47 (31,1%)	8(13,6%)
Very satisfied	9 (6,0%)	4(6,8%)
How satisfied are you with your ability to perform your daily living activities? * p<0.001		
Very dissatisfied	0(0,0%)	0(0,0%)
Dissatisfied	8(5,3%)	10(16,9%)
Moderately	57(37,7%)	32(54,2%)
Quite a lot satisfied	57(37,7%)	16(27,1%)
Very satisfied	29(19,2%)	1(1,7%)
How satisfied are you with your capacity for work? * p=0.001		
Very dissatisfied	0(0,0%)	6(10,2%)
Dissatisfied	7(4,6%)	2(3,4%)
Moderately	38(25,2%)	19(32,2%)
Quite a lot satisfied	70(46,4%)	24(40,7%)
Very satisfied	36(23,8%)	8(13,6%)

Table 3a Frequency of responses in the Physical Health subscale grouped by obesity. (ANOVA * statistically significant)

WHOQOL-BREF Question	Without obesity	With obesity
	n(%)	n(%)
How much do you enjoy life? * p=0.003		
Not at all	2(1,3%)	0(0%)
A little	3(2,0%)	6(10,2%)
Moderately	44(29,1%)	27(45,8%)
Quite a lot	77(51,0%)	19(32,2%)
Extremely	25(16,6%)	6(10,2%)
To what extent do you feel your life has meaning? * p=0.03		
Not at all	0(0%)	1(1,7%)
A little	5(3,3%)	4(6,8%)
Moderately	27(17,9%)	14(23,7%)
Quite a lot	70(46,4%)	25(42,4%)
Extremely	49(32,5%)	14(23,7%)
How well are you able to concentrate? * p=0.03		
Not at all	1(0,7%)	0(0%)
A little	19(12,6%)	12(20,3%)
Moderately	68(45,0%)	25(42,4%)
Quite a lot	53(35,1%)	19(32,2%)
Extremely	10(6,6%)	3(5,1%)
Are you able to accept your bodily appearance? * p<0.001		
Not at all	0(0,0%)	5(8,5%)
A little	13(8,6%)	17(28,8%)
Moderately	34(22,5%)	24(40,7%)
Quite a lot	62(41,1%)	10(16,9%)
Totalmente	42(27,8%)	3(5,1%)
How satisfied are you with yourself? * p<0.001		
Very dissatisfied	0(0,0%)	3(5,1%)
Dissatisfied	8(5,3%)	4 (6,8%)
Moderately	39(25,8%)	30 (50,8%)
Quite a lot satisfied	64(42,4%)	16 (27,1%)
Very satisfied	40(26,5%)	6(10,2%)
How often do you have negative feelings such as blue mood, despair, anxiety, depression?* p<0.001		
Never	4(2,6%)	8(13,6%)
Rarely	30(19,9%)	18(30,5%)
Moderately	56(37,1%)	18(30,5%)
Often	55(36,4%)	14(23,7%)
Always	6(4,0%)	1(1,7%)

Table 3b Frequency of responses in the Psychological Health subscale grouped by obesity. (ANOVA * statistically significant)

WHOQOL-BREF Question	Without obesity	With obesity
	n(%)	n(%)
How satisfied are you with your personal relationships? * p=0.02		
Very dissatisfied	1(0,7%)	0(0,0%)
Dissatisfied	8(5,3%)	5(8,5%)
Moderately	29(19,2%)	17(28,8%)
Quite a lot satisfied	69(45,7%)	29(49,2%)
Very satisfied	44(29,1%)	8(13,6%)
How satisfied are you with your sex life? * p=0.02		
Very dissatisfied	4(2,6%)	3(5,1%)
Dissatisfied	10(6,6%)	6(10,2%)
Moderately	48(31,8%)	18(30,5%)
Quite a lot satisfied	50(33,1%)	20(33,9%)
Very satisfied	39(25,8%)	12(20,3%)
How satisfied are you with the support you get from your friends? * p=0.01		
Very dissatisfied	2(1,3%)	4(6,8%)
Dissatisfied	8(5,3%)	6(10,2%)
Moderately	37(24,5%)	17(28,8%)
Quite a lot satisfied	58(38,4%)	18(30,5%)
Very satisfied	46(30,5%)	14(23,7%)

Table 3c Frequency of responses in the Social Relationships subscale grouped by obesity. (ANOVA * statistically significant)

WHOQOL-BREF Question	Without obesity	With obesity
	n(%)	n(%)
How would you rate your quality of life? * p<0.001		
Very poor	0 (0%)	0 (0%)
Poor	6 (4%)	7 (11,9%)
Neither poor nor good	45 (29,8%)	28 (47,5%)
Good	77 (51,0%)	20 (33,9%)
Very good	23 (15,2%)	4 (6,8%)
How satisfied are you with your health? * p<0.001		
Very dissatisfied	0 (0%)	0(0%)
Dissatisfied	16 (10,6%)	21(35,6%)
Moderately	50 (33,1%)	27(45,8%)
Quite a lot satisfied	60 (39,7%)	8(13,6%
Very satisfied	25 (16,6%)	38(5,1%)

Table 3e Frequency of responses in the Global Health subscale grouped by obesity. (ANOVA * statistically significant)

WHOQOL-BREF Question	Without obesity	With obesity
	n(%)	n(%)
How safe do you feel in your daily life? *p=0.04		
Not at all	1(0,7%)	3(5,1%)
A little	11(7,3%)	8(13,6%)
Moderately	54(35,8%)	24(40,7%)
Quite a lot	71(47,0%)	22(37,3%)
Extremely	13(8,6%)	2(3,4%)
How healthy is your physical environment? * p=0.01		
Not at all	1(0,7%)	0(0%)
A little	8(5,3%)	8(13,6%)
Moderately	53(35,1%)	27(45,8%)
Quite a lot	64(42,4%)	18(30,5%)
Extremely	25(16,6%)	6(10,2%)
Do you have enough money to meet your needs? * p<0.001		
Not at all	3(2,0%)	4(6,8%)
A little	22(14,6%)	22(37,3%)
Moderately	68(45,0%)	28(47,5%)
Quite a lot	39(25,8%)	4(6,8%)
Totalmente	19(12,6%)	1(1,7%)
How available is the information you need in your daily life? * p=0.03		
Not at all	1(0,7%)	1(1,7%)
A little	8(5,3%)	3(5,1%)
Moderately	41(27,2%)	25(42,4%)
Quite a lot	71(47,0%)	24(40,7%)
Totalmente	30(19,9%)	6(10,2%)
To what extent do you have the opportunity for leisure activities? * p<0.001		
Not at all	3(2,0%)	4(6,8%)
A little	24(15,9%)	19(32,2%)
Moderately	58(38,4%)	21(35,6%)
Quite a lot	47(31,1%)	14(23,7%)
Totalmente	19(12,6%)	1(1,7%)
How satisfied are you with the conditions of your living place? * p=0.003		
Very dissatisfied	0(0,0%)	1(1,7%)
Dissatisfied	7(4,6%)	4(6,8%)
Moderately	32(21,2%)	22(37,3%)
Quite a lot satisfied	60(39,7%)	21(35,6%)
Very satisfied	52(34,4%)	11(18,6%)
How satisfied are you with your access to health services? *p=0.04		
Very dissatisfied	3(2,0%)	0(0,0%)
Dissatisfied	16(10,6%)	3(5,1%)
Moderately	53(35,1%)	30(50,8%)
Quite a lot satisfied	47(31,1%)	21(35,6%)
Very satisfied	32(21,2%)	5(8,5%)

Table 3d Frequency of responses in the Environmental Health subscale grouped by obesity. (ANOVA * p<0.05)

Regarding the global satisfaction scale, patients with higher education scored significantly better, with an average of 88.74 for patients without higher education compared to 95.91 for those who have it (p=0.001).

Among women with a BMI ≥ 30 kg/m^2, 91.5% believe they are overweight or obese, 3.40% respond "I don't know," and 5.1% believe they are not overweight/obese (ANOVA p<0.005).

Of the women living with obesity, 94.7% considered that they needed to lose weight compared to 24.2%, who also considered that they needed to lose it (p<0.005). In response to the question "how many kilos do you think you should lose," the minimum was 0 kilos and the maximum 70. In the studied sample, a higher body mass index was significantly associated with a higher number of kilos considered to lose (positive correlation, Pearson index: 0.9; p<0.05).

Discussion

Patients with obesity have lower global satisfaction regarding their quality of life than patients without it, both in the overall survey score and in the subscale analysis. This is evidenced by the scores obtained in the survey, highlighting lower scores in terms of the ability to accept their physical appearance, satisfaction with their health and themselves, the ability to perform daily and leisure activities, as well as the presence of negative feelings such as sadness, hopelessness, anxiety, or depression.

Furthermore, there are variables whose result was contrary to the expected. A negative correlation was observed between pain and the need for medical treatment in relation to daily life activities. 26.5% of those without obesity reported that physical pain impedes daily activities, compared to 18.6% of those with obesity, contrary to the expectation that obesity would condition a higher number of pain-causing pathologies. However, this could be explained by the fact that we are dealing with a young sample without time to develop certain pathologies, or because endometriosis, the most prevalent and pain-causing pathology in young women, and a cause for gynecological evaluation, is not related to obesity. Similarly, 45.7% of patients without obesity reported needing medical treatment for pain to perform daily activities, compared to 27.1% of those living with obesity.

Regarding disease awareness, 91% of patients with obesity recognize it, but it is noteworthy that 3.4% do not know and 5.1% do not believe they are. Although the vast majority are aware of their situation, there is still a percentage that does not recognize it, which could increase the probability of severe obesity-related diseases. Disease awareness is a little-studied and difficult-to-address topic, but of great importance, as it can negatively influence treatment adherence and clinical outcomes. Despite increasing public awareness about obesity and its consequences (14), there is still a significant percentage of people who do not recognize their situation. Published studies have evaluated how to obtain more accurate data on this; with the development and use of certain scales, it is possible to measure this effect more precisely (13).

The percentage of women with obesity in our sample was 28.1%, much higher than the recorded rate in the Canary Islands according to the Canary Islands Statistics Institute (ISTAC) for women in 2021 (17.9%) (1). This could be justified by a heterogeneous distribution of obesity across different islands or regions of the Canary Islands, not analyzed in the present study, or by the presence of more frequent gynecological pathologies in women with obesity, or by the higher percentage of IUD or implant placement as a reason for consultation in patients living with obesity due to the cardiovascular risk associated with oral contraceptive use in this patient group who attended the specialized care center.

The studied sample presents a homogeneous distribution of variables related to the sociocultural level between patients with and without obesity. Although patients with higher education present a better overall perceived quality of life score, patients with obesity, regardless of education level, score lower than patients without obesity.

Regarding the relationship between quality of life and obesity, P. Serrano-Aguilar et al. conducted a study on the Canarian population in which this relationship was analyzed using a different questionnaire, the EuroQol-5D. The conclusions were that a higher BMI increases the likelihood of having a low self-perception of health status and there is a significantly lower HRQOL than in people with normal BMI. This same conclusion is observed in our study using the WHOQOL-BREF, with the difference that Serrano's work analyzed different age ranges and both sexes (15).

Another study, conducted on a Turkish population with a high prevalence of obesity, also analyzed this relationship, noting that "even after controlling for potential confounders

such as age, education, and the presence of comorbid diseases, people with obesity had lower WHOQOL scores in three of the four subscales." It concludes that the physical domain is more affected by obesity than the psychological one, consistent with the results found in our study (mean score in patients without obesity of 26.42 for the physical health subscale, compared to a mean of 23.5 in patients with obesity with $p<0.05$) (16).

Limitations of our study include the observational design and the fact that employment status, socioeconomic level, physical exercise, or diet were not evaluated. It is unknown if there are other factors, in addition to obesity, that have influenced the difference between women living with and without obesity regarding overall satisfaction. Given the importance of perceived quality of life and the rise of obesity in the young female population, more studies are needed.

Conclusions

There is an inversely proportional relationship between obesity and the self-perceived global satisfaction of women of childbearing age according to the WHOQOL-BREF scale, which persists across all subscales of the survey (physical, psychological, social, and environmental). Women living with obesity are aware of it (91.5%), with a direct relationship between BMI and the kilograms patients consider losing, although a significant percentage of women with obesity believe they do not need to lose weight (5.3%). Population measures aimed at reducing obesity in women of reproductive age (primary prevention programs, expanding the care capacity of health services involved in the direct treatment of obesity, etc.) are prioritized as they could increase the quality of life of this population.

Conflict of interests

The authors declare no conflicts of interest or financial or personal relationships that could bias the work.

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