



Original / *Obesidad*

## Psychological well-being in a sample of obese patients compared with a control group

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### Abstract

**Introduction:** The literature has found that obese patients usually report more depression and anxiety than normal weight individuals. However, not many investigations have studied the relationship between obesity and quality of life from a Positive Psychology approach.

**Objective:** In this study it is analyzed if obese patients have less psychological well-being than a control group (normal weight participants).

**Method:** A total of 221 participants (111 obese individuals and 110 controls) were selected to conduct the study. To measure psychological well-being, the Spanish version of the Ryff's Scales was used. To measure mental health, the Spanish version of the mental health component of the Short Form 36 Health Survey (SF-36) was used.

**Results:** It was found that obese participants reported less psychological well-being than normal weight individuals, but that there were not statistically significant differences in the case of mental health measured with the SF-36.

**Discussion:** According to the results, it can be concluded that reports of psychological well-being problems were much more common in participants with weight problems than in the control group.

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Key words: *Obesity. Psychological well-being. Mental health. SF-36.*

### Introduction

Obesity is a medical condition in which excess body fat produces a negative effect on health, reduces life

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### BIENESTAR PSICOLÓGICO EN UNA MUESTRA DE PACIENTES OBESOS COMPARADOS CON UN GRUPO CONTROL

#### Resumen

**Introducción:** La literatura ha puesto de manifiesto que los pacientes obesos suelen padecer más depresión y ansiedad que los individuos de peso normal. Sin embargo, no son muchas las investigaciones que han estudiado la relación entre obesidad y calidad de vida a partir del enfoque de la Psicología Positiva.

**Objetivo:** En este estudio se analizó si los pacientes obesos tienen menor bienestar psicológico que los de un grupo de control (participantes de peso normal).

**Método:** Se seleccionaron un total de 221 participantes (111 individuos obesos y 110 de control) para realizar el estudio. Para medir el bienestar psicológico, se utilizó la versión española de las escalas de Ryff. Para medir la salud mental, se utilizó la versión española del componente de salud mental de la Forma Abreviada de la Encuesta de Salud (SF-36).

**Resultados:** Los participantes obesos mostraron menos bienestar psicológico que las personas de peso normal, pero que no hubo diferencias estadísticamente significativas en el caso de la salud mental medida con el SF-36.

**Discusión:** De acuerdo con los resultados, se puede concluir que la expresión de problemas acerca del bienestar psicológico es mucho más común en los participantes con problemas de peso que en los del grupo de control.

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expectancy and increases the likelihood of several illnesses, among others, heart disease, breathing difficulties during sleep, type 2 diabetes, certain types of cancer and osteoarthritis<sup>1</sup>. For all these reasons, nowadays the authorities in advanced societies (e.g. the World Health Organization, WHO) consider obesity as one of the highest risks to public health (WHO, 2011)<sup>2</sup>. For example, in Spain, the country where this study has been carried out, obesity has increased significantly in the last few years, reaching currently a prevalence rate of 23%<sup>3</sup>.

The fact that obesity is predominantly a life-long condition emphasizes the importance of quality of life research in this field. For example, obese patients have an increased risk for symptoms of depression and anxiety and some studies have shown that weight loss may lead to significant relief of such symptoms<sup>4</sup>. Additionally, several meta-analyses show that obesity is related with less quality of life. For example, it has been found that obese individuals suffer more depression<sup>5</sup> and anxiety<sup>6</sup> than normal weight people. However, according to the WHO definition<sup>7</sup>, health is considered as a state of complete physical, mental, and social well-being and not just the simple absence of disease. For this reason, it is important to study also the positive psychological human functioning, and not just focus on the negative aspects of the disease<sup>8</sup>. Unfortunately, the Positive Psychology<sup>9</sup> is not an approach very common in the obesity field<sup>10</sup>. For this reason, in this study we will focus on the positive aspects related with obesity, rather than depression and anxiety.

As we have pointed out before, although several investigations have studied the relationship between depression, anxiety and obesity, not many researchers have focused on the positive aspects related to obese patients' quality of life (see for example Böckerman et al. 2013)<sup>11</sup>. The common approach in this field of study is to measure quality of life with the Short Form 36 Health Survey (SF-36)<sup>12</sup>, one of the most widely used and evaluated generic health-related quality of life questionnaires. However, the SF-36 does not take account of the different components of well-being and it has been suggested that SF-36 is not broad enough to assess specific domains as comprehensively like other instruments<sup>13</sup>. Additionally, a meta-analysis conducted recently shows that obese patients, compared with a normal weight control group, do not report less mental health, measured with the SF-36, especially in the case of men with weight problems<sup>14</sup>. For this reason, we believe that it is important to measure the positive aspects of quality of life with other type of instruments.

Eudaemonism, the tradition started by Aristotle, is reflected by the concept of psychological well-being (PWB). Eudaimonic view of well-being focuses on feeling fully functioning, self-coherent, and with a deep sense of wellness, and vitality, rooted on the idea of fulfilling or realizing one's daimon or true nature. Experts suggest that although people report being happy, it does not necessarily mean that they are psychologically well<sup>15</sup>. Thus, from this perspective a person is considered to be psychologically well when developing his/her true potential, or there is congruence between the proposed goals and his/her true self or daimon. From this approach, according to Ryff's model, six core domains for optimal functioning are identified: Self-Acceptance, Environmental Mastery, Positive Relations, Purpose in Life, Personal Growth and Autonomy<sup>16</sup>. Therefore, PWB is a dynamic concept that includes subjective, social, and psychological dimensions as well as health-related behaviors. PWB is

usually measured with the Ryff's Scales of Psychological Well-Being<sup>17</sup> that is a theoretically grounded instrument that specifically focuses on the multiple facets of well-being. Therefore, in this study PWB will be measured in a sample of obese patients comparing the results with the SF-36 to see if there are any differences between the instruments.

There are some studies about the relationship between obesity and PWB<sup>18</sup> that show the negative link that exists between PWB and obesity, although more studies need to be conducted to confirm this pattern. According to these authors, weight change at 12 months was associated with higher overall PWB and weight loss was associated with positive changes in PWB in overweight and obese patients<sup>18</sup>. However in this study, Ryff's scales were not used<sup>17</sup> and there was not a control group to compare the results.

In order to better understand obesity and well-being, the present paper focuses on the relationship between quality of life from a Positive Psychology approach and weight. Therefore, the aim of the present study is to analyze whether obese patients suffer less PWB than normal weight participants, and compare the results with the mental health component of the SF-36. According to the reviewed literature, it is expected that obese individuals will report less PWB than a normal weight group used as a control<sup>18</sup>. However, we do not expect to find differences in the case of mental health problems<sup>14</sup>. To study the relationship between obesity and PWB a cross-sectional study will be conducted with obese and normal weight groups. We believe that our work is innovative because a Positive Psychology approach has been used rarely in the field of study. Additionally, Ryff's scales<sup>17</sup> have not been used before with obese patients, and the studies that have measured PWB in obese patients have not used a control group<sup>18</sup>.

## Method

### Sample

Participants ( $n = 221$ ) were obese outpatients from the Valme Spanish Hospital (Seville) and students from the Spanish Open University (UNED). The average Body Mass Index (BMI) was 38.34 kg/m<sup>2</sup> (SD = 4.52) in the obese group and 22.51 kg/m<sup>2</sup> (SD = 2.23) in the control group. Mean age was 43.99 years (SD = 12.97) in the obese group and 31.99 years (SD = 10.45) in the control group. There were 37 men and 74 women in the obese group and 52 men and 58 women in the case of the control group.

With respect to the characteristics of the clinical sample, 63 participants had completed primary school studies (56.75%), 34 of them had finished secondary school studies (30.63%) and the rest had university studies (12.62%). A total of 106 patients lived in urban areas (95.49%). The criterion considered to distinguish rural from urban areas was to define rural as a geographic area, which is located outside cities and towns with

an economy mainly based on agricultural productions. With regards to the income level, it was 15,250 € ± 7.250 €/year (which is the normal range in Andalucía), the average income level being 23.000 € in Spain.

Among the patients there were not any cases of specific eating disorders associated to their obesity. With respect to other clinical characteristics, the patients attended the Clinical Nutrition Unit (CNU) with the main objective to lose weight so no other data were collected for the proposal of this study.

### *Procedure*

All participants of the obese group attended the Valme Spanish Hospital where they were treated by the CNU. After having obtained the Unit Headmaster's permission and the patients' informed consent, participants completed the questionnaires and scales individually without time limits. A nutritionist supervised the procedure, instructing the participants about how to complete the questionnaires and scales until they were completely sure about their fully understanding of the instructions. Data collection was developed in a suitable setting so the attainment of the task could be reached easily. All the participants volunteered to take part in the study and none of them received any kind of reward after fulfilling the task. The anthropometric measures (weight, height) were taken by the members of the Unit who treated the patients so with enough experience of working in this type of studies.

With respect to the inclusion/exclusion criteria, all patients who were attending the CNU regularly and with a good adherence were invited to participate. Due to the fact that more than 50% had primary school studies only those patients who understood the content of the questionnaires were accepted. Patients with other diagnostics (for example eating disorders) were excluded as well as those who were not able to follow the treatment as outpatients due to medical complications or difficulties to go on a diet.

The participants of the control group were Spanish students of the UNED (Spanish Open University) who were enrolled in a psychology course and who received extra credit for their participation. To recruit participants from the control group, students of the School of Psychology (UNED) were contacted during class period. Students were informed on the general purposes of the research and those who voluntarily wanted to participate filled out a booklet with the different questionnaires after time class. With respect to their weight and height (in order to obtain the BMI), in this case these measures were self-reported.

### *Instruments*

To measure PWB the Spanish version of the Ryff's Scales of Psychological Well-Being was used<sup>17,19</sup>. This

scale is a 39-items self-report instrument which is based on six dimensions that point to different aspects of positive psychological functioning: self-acceptance (6 items), positive relations with others (6 items), autonomy (8 items), environmental mastery (6 items), purpose in life (6 items), and personal growth (7 items). Items are scored on a 7-point scale ranging from 0 (strongly disagree) to 6 (strongly agree). Six scores were computed, one for each dimension, by averaging the corresponding items for each of these dimensions. The following are example statements from each of the areas of well-being measured by the Ryff inventory: "I like most aspects of my personality" (self-acceptance), "People would describe me as a giving person, willing to share my time with others" (positive relation with others), "I have confidence in my opinions, even if they are contrary to the general consensus" (autonomy), "In general, I feel I am in charge of the situation in which I live" (environmental mastery), "Some people wander aimlessly through life, but I am not one of them" (purpose in life) and "I think it is important to have new experiences that challenge how you think about yourself and the world" (personal growth). A person with a high score on the Ryff inventory possesses a positive attitude toward the self (self-acceptance), has warm, satisfying, trusting relationships with others (positive relation with others), is self-determining and independent (autonomy), has a sense of mastery and competence in managing the environment (environmental mastery), has goals in life and a sense of directedness (purpose in life) and has a feeling of continued development (personal growth). Alpha coefficients obtained for present study were: 0.81 for self-acceptance, 0.79 for positive relations with others, 0.68 for autonomy, 0.71 for environmental mastery, 0.73 for purpose in life, and 0.73 for personal growth.

To measure mental health the Spanish version of the mental health component of the SF-36 was used<sup>12,20</sup>. The SF-36 consists of 36 items distributed by eight domains (physical functioning, role limitations due to physical problems, bodily pain, general health, vitality, social functioning, role limitations due to emotional problems, and mental health) that comprise two summary measures: the physical component summary (the first four domains) and the mental component summary (the last four domains). The following are example items from the mental health component measured by the SF-36: "How much of the time during the past 4 weeks... Have you been a very nervous person?" and "How much of the time during the past 4 weeks... Did you feel worn out?". A score was computed by averaging the items of the last four domains (mental health component). Each scale is directly transformed into a 0-100 scale according to the authors<sup>12</sup>. However, in this research after the calculation of the scores of the mental health component of the SF-36 with the algorithm proposed by the authors<sup>12</sup>, the results were transformed into a 7-point scale ranging from 0 to 6 to compare them with the Ryff's Scales of Psychological Well-Being.

Higher scores on the mental component reflect greater mental health. Alpha coefficient obtained for present study was 0.93.

Participants supplied also information about their height and weight, sex, level of education and working situation.

## Results

To test for possible differences between men and women, sex group comparisons were examined. Having checked that the sample fit a normal distribution by means of the Kolmogorov-Smirnoff test, T test showed that there were no statistically significant differences in any of the analyzed variables (PWB and mental health) between both groups. To test whether these variables varied as a function of age, Pearson's correlations between age and all variables analyzed were also calculated, but these were not statistically significant. Since no differences were found on the analyzed variables either in terms of gender or age, all data were analyzed together.

An Analysis of Variance (ANOVA) was conducted with the 6 sub-scales of the PWB as a dependent variable and group (2 levels: obesity and control) as an independent variable to test whether participants with obesity have less PWB and mental health, measured with the SF-36, than the control group. It was found, as it can be seen in table I, that the control group had the highest scores on the PWB subscales, except for self-acceptance. The differences were statistically significant in the case of positive relations with others, autonomy, environmental mastery, purpose in life and personal growth.

Additionally, it was found that the control group did not score more than obese participants on the SF-36. The differences were not statistically significant.

Cohen's  $d$ s<sup>21</sup> were also calculated as indexes of effect size. Cohen (1988) defined  $d$  as the difference between means divided by standard deviation of either group ( $d$ s  $\geq .2$  are considered medium effect sizes and  $d$ s  $\geq .8$  large effect sizes)<sup>21</sup>. According to this criterion, most of the sub-scales of PWB are of large size, except for purpose in life that is just medium.

## Discussion

The results of the current research give support to our hypothesis: obese patients report less PWB than participants for the control group. However, the differences in self-acceptance were not statistically significant. In the case of mental health, as expected, there were no differences between the groups of the study, a result congruent with a meta-analysis about the relationship between obesity and quality of life measured with the SF-36<sup>14</sup>.

Specifically, it was found that the control group had the highest scores on most of the different PWB subscales. Normal weight individuals reported more positive relations with others, autonomy, environmental mastery, purpose in life and personal growth than obese patients. It is important to remark that large effect sizes were found, except for purpose in life that it was just medium.

These results are similar to previous research<sup>18</sup>. According to these authors, there was a negative relationship between obesity and PWB. However, these authors did not measure PWB with the Ryff's scales<sup>17</sup> and they did not include a control group. For this reason, we believe that our results expand literature.

As it has been said, not statistically significant differences were found in the case of self-acceptance. This result suggests that both groups, obese and normal weight, do not feel dissatisfied with their self. This is an unexpected finding because usually obese patients score more on self-acceptance scales when they have lost weight<sup>22</sup>.

We believe that this work is innovative because investigations in the obesity topic have traditionally focused on psychological symptoms, like depression and anxiety, rather than PWB. As we have seen, the results show that there is an important impairment in PWB in obese patients compared to normal population. According to our results, no differences have been found with the SF-36, which gives an idea of the importance of not just focus on negative aspects of quality of life.

The current study is subject to some limitations that deserve mention. First of all, in the research self-reports has been used. Additionally, subjectively measured height and weight for BMI calculation were used

**Table I**  
*Means (standard deviation) of the variables of the study and size effects*

<i>Variables</i>	<i>Obese</i>	<i>Control</i>	<i>F<sub>1,219</sub></i>	<i>p</i>	<i>d</i>
Self-acceptance*	3.60 (.80)	3.61 (.81)	.08	> .05	-.01
Positive relations*	2.99 (1.21)	4.01 (1.10)	42.39	< .01	.88
Autonomy*	2.66 (.88)	4.11 (.92)	140.41	< .01	1.61
Environmental*	2.83 (1.44)	4.99 (.74)	195.02	< .01	1.88
Purpose in life*	3.04 (1.10)	3.79 (1.38)	20.15	< .01	.60
Personal growth*	3.94 (.71)	4.75 (.75)	66.41	< .01	1.10
Mental health**	3.81 (.78)	3.82 (.79)	.01	> .05	-.01

\* Measured with Ryff's Scales of Psychological Well-Being \*\* Measured with SF-36.



in the case of the control group. In the second place, it is a cross-sectional study. However, only longitudinal studies can provide insight into how obesity, PWB and mental health interact with different daily life stressful experiences. Although no causal relationship can be stated, the results of our study showed that obese individuals report less PWB than normal weight individuals. In the third place, subjective well-being has not been measured<sup>11</sup>. In the fourth place, the lack of a randomly controlled study design. In the fifth place, due to the small sample sizes, some results of this study are of limited explanatory power. However, the size effects calculated are of a high magnitude. Despite these limitations, the study provides new data with potential applications.

We believe that knowledge of quality of life from a Positive Psychology approach may contribute to a better understanding of the patients' needs, an improvement in care, and a better evaluation of treatment. According to some authors, an important improvement in quality of life can be a compensation for not fully achieving weight loss and it can be helpful for maintaining the motivation to continue lifestyle modifications with obese patients<sup>23</sup>.

The present findings suggest that future research using longitudinal designs should continue to address quality of life from a Positive Psychology approach. Additionally, it would be interesting to include obesity-specific measures of quality of life (see for example, Kolotkin et al. 2001<sup>24</sup>). Finally, the assessment of medical comorbidities, a variable likely to be associated with obesity, should be assessed in future studies analyzing obesity from a Positive Psychology approach.

These limitations considered, the current study offers new directions for the study of obesity and quality of life. With the growing prevalence of obesity, it is becoming increasingly important to understand the ways in which obese people suffer less quality of life than normal weight individuals.

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