

Original Research Article

## The Effect of Body Weight Perception on Self-Esteem and Eating Attitudes in Individuals with Chronic Physical Diseases

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### ABSTRACT

**Aim:** This study was conducted to determine the effect of body weight perception on self-esteem and eating attitudes in individuals with chronic physical diseases.

**Materials:** The study was performed as a descriptive cross sectional study with 396 inpatients being treated for chronic physical diseases. Data was collected using the Individual Identification Form, Stanley Coopersmith Self Esteem Scale, and Eating Attitudes Test. In statistical evaluation the kappa consistency measure, Pearson correlation analysis, independent t test, one way ANOVA, and Kruskal-Wallis test were used.

**Results:** It was found that only 19.1% of individuals who were obese according to Body Mass Index classifications thought they were obese. When the Body Mass Index and body weight perceptions of the individuals were compared, the consistency was found to be weak but compatible ( $K=0.29$ ,  $p=0.000$ ). 10.6% of the individuals exhibited disrupted eating behavior. When the mean self-esteem ( $p=0.312$ ) and eating attitudes ( $p>0.05$ ) scores of the individuals were compared according to Body Mass Index and body weight perception, no significant difference could be found. On the contrary, when the self-report body weight perceptions and self-esteem mean scores of the individuals were compared, a significant difference was found ( $p=0.047$ ). In the study, body weight perception was found not to affect eating attitudes ( $p>0.05$ ).

**Conclusion:** The actual body structures and body weight perceptions of individuals with chronic diseases are not in compliance. Individuals who perceive themselves as obese have lower self-esteem. There is no relation between body weight perception and eating attitudes.

**Key words:** Body weight, Self-esteem, Chronic disease, Eating attitude.

### INTRODUCTION

Chronic diseases are long term health problems that usually develop slowly, require constant treatment, care, and monitoring which can cause irreversible structural and functional disorders in one or more systems or cause disability. <sup>[1]</sup> It is known that many chronic physical diseases are related to obesity, <sup>[2]</sup> and obesity is considered an important risk factor in the

development of chronic diseases. The presence of obesity in chronic diseases can cause other health problems such as mental problems and social maladjustment in the individual. <sup>[3]</sup> In this context, the detection of obesity in individuals with chronic physical diseases and the evaluation of the perceived body weight of obese and overweight individuals are important with regard to raising personal awareness.

Obesity is considered one of the factors that can cause low self-esteem in individuals. [4] Self-esteem is the acclaim caused by the approval of the self-concept reached by the individual after evaluating oneself. It helps accepting oneself as is, trusting oneself, and seeing oneself as valuable, positive, and worth being liked and loved. [5] Self-esteem is closely related to body image, which shows how the body shaped in the mind of the individual looks to him/her. [6]

In the literature, it has been suggested that false body weight image negatively affects overweight and obese individuals adopting healthy attitude and behaviors, leading to lower weight loss motivation in those individuals. [3,7] Alongside this, factors such as familial problems, low self-esteem, obesity, and socio cultural norms may result in eating disorders. Eating disorders are situations that have both bodily and psychosocial aspects and exhibit themselves in the eating, body weight, and physical appearance related thoughts of the individual as well as their eating behavior. In eating disorders, the eating attitude of the individual and his/her body image change. People with eating disorders can show many symptoms such as finding their body fatter and in worse shape than it actually is, intake of very limited foodstuff, over exercising, and self-induced vomiting. [8]

The evaluation of obesity, which constitutes a risk factor for many chronic diseases and has an increased frequency in chronic diseases, as well as the early determination of accompanying low self-esteem and eating attitude disorders, would contribute greatly to the management of the disease and efforts to increase quality of life. In all of these processes, nurses taking active responsibility would contribute to personal awareness.

## **MATERIALS AND METHODS**

### **Aim and design**

The descriptive and cross sectional study was conducted in order to determine

the effect of body weight perception on self-esteem and eating attitudes in individuals with chronic physical diseases.

### **Sample**

The universe of the study consisted of 612 inpatients being treated for chronic physical diseases in the internal diseases clinics of a public hospital between the dates of January 2<sup>nd</sup> - April 28<sup>th</sup> 2017. Without sample selection, the whole of the universe was attempted to be reached in the aforementioned time period, and 396 individuals who were diagnosed with chronic physical diseases at least 6 months ago, had no verbal communication obstacles, had sufficient cognitive level, and agreed to participate in the study were included in the sample.

### **Data collection tools**

Data was collected using the Individual Identification Form, the Stanley Coopersmith Self Esteem Scale, and the Eating Attitudes Test.

*The Individual Identification Form:* This form was prepared by the researchers according to literature and consisted of 21 questions regarding the socio demographic characteristics of the individuals (age, gender, marital status, education, occupation), information on their disease (name of the disease, duration, medicine use etc.), their perceived body structure (present body weight perception, body structure preference) and their height and weight. [3,6,7] The height and weight measurements of the individuals were performed by the researchers using a weight scale and a non-flexible measure. Then, the height and weight of the individuals were recorded as cm and kg, their Body Mass Index (BMI) were calculated through the formula  $\text{kg/m}^2$ , and their body structures were categorized as thin ( $<18.5\text{kg/m}^2$ ), normal weight ( $18.5\text{-}24.9\text{ kg/m}^2$ ), overweight ( $25\text{-}29.9\text{ kg/m}^2$ ), and obese ( $\geq 30\text{ kg/m}^2$ ).

*The Stanley Coopersmith Self Esteem Scale:* This is a scale developed by Stanley Coopersmith in 1986 to be used on adults. The scale consists of 25 items that can be answered “like me” or “not like me”, and

the scores that can be attained vary between 0 and 100. Higher scores from the scale indicate higher self-esteem. The Turkish validity and reliability study of the scale was performed by Turan and Tufan, [9] and its test retest reliability was found to be 0.65 and 0.76. In the study, the Cronbach Alpha value of the scale was found to be 0.78.

*The Eating Attitudes Test:* The test was developed by Garner and Garfinkel (1979). The Turkish validity and reliability study of the test was performed by Savaşır and Erol. [10] The test is a 40 item, 6 way likert type scale (always, very frequently, frequently, sometimes, rarely, never). Items 1, 18, 19, 23, 27 and 39 are scores as 1 point for “sometimes”, 2 points for “rarely”, 3 points for “never”, and 0 points for all other answers. In other items of the scale, scoring is performed as 3 points for “always”, 1 point for “very frequently”, and 0 points for all other answers. As a result, all of the scores taken from the items are added together to obtain the scale total score. Scores above 30, which is considered the cutting point, indicate eating behavior disorders. [8,10] In the study, the Cronbach Alpha value of the scale was found to be 0.72.

### **Procedure**

Data was collected in the internal diseases clinics in rooms where comfortable interviews could be made with the patients via face to face interviews. The completion of the research forms took approximately 20 to 25 minutes.

### **Analysis of the data**

Data was evaluated using the SPSS 23.0 package program. The socio demographic and disease related characteristics of the individuals were evaluated using percentages and mean values while their self-esteem and eating attitudes were evaluated using mean values. In the comparison of the consistency between the body structures and body weight perceptions of the individuals according to their BMI values was performed using the kappa consistency measurement while the comparison between

their self-esteem and eating attitudes was performed using Pearson correlation analysis and the t test for independent groups. In the comparison of the relationship between actual and perceived body weight and self-esteem and eating attitudes, one way ANOVA and the Kruskal Wallis test were used. In statistical evaluation, the level of significance was taken as  $p < 0.05$ .

### **Ethical Considerations**

Before data collection, written permission was taken from the ethical board of a university (Decision no: 2016-11/02). Additionally, each woman to participate in the study was verbally informed on the context and voluntary nature of the study, and their written consents were taken. The study was conducted in accordance with the ethical standards of the Helsinki declaration.

### **Limitations of the Study**

Since the study was conducted with patients with chronic physical diseases who agreed to participate in the study and presented at a single public hospital in a given time frame, the results can only be generalized for its own universe. Additionally, the information obtained on the self-esteem and eating attitudes of the individuals are self-reported.

## **RESULTS**

Among the individuals included in the study, 48.7% were of 65 years of age and above, 51.5% were female, 40.9% were elementary school graduates, 77.8% were married, and 29% were actively employed. 12.6% of the individuals presently smoked. 34.3% of the individuals were obese, and 50.5% stated their general health to be on a moderate level (Table 1).

29.2% of the individuals had diabetes, 24.5% had heart failure/hypertension, and 19.6% had COHD/asthma, with a mean illness duration of  $9.35 \pm 9.05$  years. 34.6% of the individuals had more than 2 chronic diseases, and 77.3% stated that they used their medication regularly.

**Table 1: The Socio Demographic Characteristics of the Individuals**

Characteristics	n	%
<b>Age (year)</b>		
24-64	64	16.2
45-64	139	35.1
65 and above	193	48.7
<b>Gender</b>		
Female	204	51.5
Male	192	48.5
<b>Education status</b>		
Literate	148	37.4
Elementary school	162	40.9
Secondary school	68	17.2
Highy school	18	4.5
<b>Marrital status</b>		
Married	308	77.8
Unmarried	88	22.2
<b>Employment status</b>		
Worker / Officer	115	29.0
Retired	106	26.8
Housewife	175	44.2
<b>Smoking status</b>		
Current smoker	50	12.6
Never smoker	225	56.8
Ex-smoker	121	30.6
<b>Body Mass Index (kg/m<sup>2</sup>)</b>		
<18.5	10	2.5
18.5-24.9	116	29.3
25-29.9	134	33.8
≥30	136	34.3
<b>General health state</b>		
Good	104	26.3
Moderate	200	50.5
Bad	92	23.2

53.5% of the individuals stated that they had a diet suggested by their physician, with only 60.2% of those who had a specific diet actually following it and 14.4% having regular exercise such as walking at least 20 minutes a week. It was found that 8.3% of

the individuals used methods such as diets, sports, and medicine use to lose weight in the last year, and the individuals who did use those methods were found to lose a mean weight of 6.11±5.18 kg. Additionally, 77.3% of the individuals in the study stated obesity to be a health problem with 69.3% of the individuals stating that whether an individual was obese could be determined from external appearance, 15.8% stated that the determination could be made according to BMI values, and 14.8% stated that the decision could be made by a physician.

In Table 2, the comparison of the body weights and body weight preferences of the individuals according to their body weight perceptions and their BMI was given. Accordingly it was found that only 19.1% of individuals who were obese according to BMI classifications thought they were obese, while 30.1% perceived themselves as normal weight. Among overweight individuals, 67.9% perceived their body to be normal weight. When the BMI and body weight perceptions of the individuals were compared, the consistency was found to be weak but compatible (K=0.29, p=0.000). Additionally, 27.6% of individuals with normal weight in the study were found to desire to gain weight while 33.6% of overweight individuals and 73.5% of obese individuals wanted to lose weight.

**Table 2: The Comparison of the Body Weights and Body Weight Preferences of the Individuals According to Their Body Weight Perceptions and Their Body Mass Index**

Variables	Perceptions of body weight according to individuals' emoticons					
	Total n(396)%	Thin n(10)%	Normal weight n(116)%	Overweight n(134)%	Obese n(136)%	
<b>Body weight perception</b>						
BMI	Thin	44(11.1)	7(70.0)	30(25.9)	5(3.7)	2(1.5)
	Normal weight	219(55.3)	3(30.0)	84(72.4)	91(67.9)	41(30.1)
	Overweight	102(25.8)	0(0.0)	2(1.7)	33(24.6)	67(49.3)
	Obese	31(7.8)	0(0.0)	0(0.0)	5(3.7)	26(19.1)
<b>Body weight preference</b>						
	Gain weight	49(12.4)	8(80.0)	32(27.6)	7(5.2)	2(1.5)
	Stay the same	197(49.7)	2(20.0)	79(68.1)	82(61.2)	34(25.0)
	Lose weight	150(37.9)	0(0.0)	5(4.3)	45(33.6)	100(73.5)

The general self-esteem mean score of the individuals was 55.25±11.42, which indicated a medium level. 10.6% of the individuals had disrupted eating behavior. When the scores the individuals took from the Self Esteem Scale and Eating Attitudes

Test were compared a very weak, statistically inverse significant relationship was found (r=0.127, p=0.012). Despite this, no significant difference between the self-esteem scores of individuals with and

without eating behavior disorders could be found ( $t=0.865$ ,  $p=0.387$ ) (Table 3).

**Table 3: The Comparison of the Mean Self-Esteem Scale and Eating Attitudes Test Scores of the Individuals**

Scales	Range of scores obtained (min-max)	n(%)	M±SD	Test/p
The Stanley Coopersmith Self Esteem Scale	24-100		55.25±11.42	$r=-0.127$
Eating Attitudes Test	5-54		17.20±7.95	0.012*
<30 (no eating disorder)		354(89.4)		$t=0.865$
≥30 (yes eating disorder)		42(10.6)		0.387

r: Pearson correlation analysis; t: t test in independent groups; \* $p<0.05$

When the mean self-esteem ( $p=0.312$ ) and eating attitudes ( $p=0.827$ ) scores of the individuals were compared according to BMI and body weight perception, no significant difference could be found. On the contrary, when the self-report body weight perceptions and self-esteem mean scores of the individuals were

compared, a significant difference was found ( $p=0.047$ ), with the self-esteem of individuals who perceived themselves as obese being lower than those who perceived themselves as normal weight. In the study, body weight perception was found not to affect eating attitudes ( $p=0.473$ ).

**Table 4:** The Comparison of the Body Mass Index and Self-Report Body Weight Perceptions of the Individuals and Their Self-Esteem and Eating Attitudes

Variables	The Stanley Coopersmith Self Esteem Scale		Eating Attitudes Test	
	M±SD	Test/p	M±SD	Test/p
Body weight perception by BMI				
Thin	52.19±7.11	KW=3.568 $p=0.312$	17.40±4.64	KW=0.893 $p=0.827$
Normal weight	54.89±11.47		17.43±9.24	
Overweight	54.95±12.30		17.00±7.25	
Obese	56.23±10.67		17.19±7.70	
Perceptions of Body Weight According to Individuals' Emoticons				
Thin	52.63±10.13	F=2.614 $p=0.047^*$	18.97±6.53	F=0.840 $p=0.473$
Normal weight	56.20±11.19		16.88±8.38	
Overweight	55.56±12.30		17.06±7.87	
Obese	51.22±10.85		17.41±6.86	

KW: Kruskal Wallis test; F: One way ANOVA \*  $p<0.05$

## DISCUSSION

The findings of the study, which was conducted to determine the effect of body weight perception on self-esteem and eating attitudes in individuals with chronic physical diseases, was discussed by comparing with information from the literature.

Many chronic physical diseases are known to be closely related too obesity. For this reason, knowing the factors that cause obesity and the steps for its treatment well is very important for protection from obesity and the effective treatment of obesity. [2] In the study, it was found that approximately a third of the individuals with chronic diseases were obese and that three quarters of the individuals saw obesity as a health problem. Similarly, in the Turkey Body Weight Perception Study, which was conducted with the participation of 6137

people from around Turkey, 33.3% of the participants were found to be overweight and 23.4% were found to be obese. In the same study, it was found that 85.3% of the participants saw obesity as a health problem. [3] These findings are positive with regard to showing high awareness against obesity in the individuals. Nurses can provide support in the fight against obesity by raising public awareness on issues such as personal awareness, protection of ideal weight, and the acquisition and continuance of healthy lifestyle behaviors.

Correct body weight perception is defined as a compliance between perceived and measured body weight. Obese individuals perceiving their body weight incorrectly is assumed to prevent them from adopting healthy behaviors and attitudes, which decreases the weight loss motivation of individuals. [3] In the study, it was found

that only a fifth of the individuals who were obese according to BMI saw themselves as obese, with thin, normal weight, and overweight individuals also perceiving their body weight as different from the category determined by their BMI, giving a weak compliance level. This weak level of compliance shows that the awareness of all of the individuals on their BMI determined body structures to be low. Similarly, in the Turkey Body Weight Perception Study, [3] only 25.8% of obese individuals were found to perceive themselves as obese, with 18.9% even considering themselves normal weight. In a similar study conducted with women between the ages of 18 and 25, the erroneous body weight perception rate was found to be 23% in overweight women and 16% in women of normal weight. [11] In other studies, it was similarly found that women have an inclination to perceive their body weight as lower than the body structure determined through BMI. [12,13] In a study by Ata et al, [14] it was found that non obese individuals among both males and females had more accurate body image and that obese individuals tried to see themselves as more normal.

Correct body weight perception in obese individuals has great importance with regard to the personal awareness of the individuals on the potential health risks associated with obesity. Individuals perceiving themselves as normal weight despite being obese would negatively affect their efforts to seek help and lose weight. In obese individuals with chronic physical diseases, the problem of not perceiving oneself as obese would cause negative results with regard to general health, disease management, and the frequency of diseases associated with obesity.

In the literature, it has been stressed that people who have been overweight for a considerably long time internalize their weight and start to see themselves as normal, which makes referring these individuals to weight loss much harder. [14] In this context, correct body image and obesity awareness would support personal

interventions to ensure normal weight and keep it in an important manner. On the other hand, in the study it was found that approximately a third of normal weight individuals wanted to gain weight with only 33.6% of overweight individuals and more than half of obese individuals desiring to lose weight. Similarly, other studies have shown that women are more inclined to see themselves as overweight when compared to men. [12,15-17] Additionally, it has been reported that women of every BMI category were more sensitive on perceiving themselves as overweight and that they make efforts to lose weight more often than men. [15-17] We can thus state that erroneous body weight perception is an important problem that must be overcome for both the prevention of obesity being perceived as normal and the prevention of weight loss interventions in normal weight in the fight against obesity. Information programs that nurses would perform for the correct evaluation of ideal personal body weight would provide benefits in raising awareness for obesity.

Chronic diseases are health problems that shake up the balance of an individual and require new coping styles for life. This can especially cause changes in the daily life of the individual. [1,18] In the study, it was found that half of the individuals had diets for the efficient management of their disease with almost half of those individuals not following their diets. Since the reason behind individuals not following their diets were not questioned in the study, it was seen that there was a need for an in depth examination of the factors that disrupt the compliance process in further studies. The individuals not having sufficient information on both disease management and obesity may have prevented them from compliance with their diets.

In the study, it was found that eating behavior disorders decreased as the self-esteem of the individuals increased, while no difference between the self-esteem scores of individuals with and without disrupted eating behavior could be found. In

a study performed with university students, the risk of eating disorder development was found to increase in students with low self-esteem. [19] In a similar study, the body image perception of students who followed diets were found to be significantly lower compared to those who never followed any diet. [20]

In the study, it was determined that the body weight perception of individuals affected their self-esteem, where individuals who perceived themselves as normal weight had higher self-esteem compared to individuals who perceived themselves as obese. In certain studies conducted in our country, the self-esteem of obese individuals were shown to be lower than those who were not. [6,21] In another study, adolescents who were obese or perceived themselves as obese were found to have lower body image than those who weren't obese. [17]

In the literature, it has been stated that low self-esteem could be an important factor in the development of morbid obesity and that high self-esteem in obese patients made treatment compliance easier. [22] It is not clear if low self-esteem is a cause or effect of obesity. It has been stated that psychopathological conditions accompanied especially by depression and personality disorders can be present in obese patients. [6] In this context, there is a need for studies where the psychosocial problems that may cause low self-esteem in obese individuals are examined in depth.

Eating disorders, which have gained importance in recent years, means a disorder in the thoughts of an individual on eating, weight, and external appearance as well as his/her eating behavior with many personal and socio cultural factors involved in its development. [23-25] The especially high prevalence in women and young adults and accompanying mental and physical problems make eating disorders conditions that require early diagnosis and treatment. [19,23,26] In the study, the body weight perception of individuals was found not to affect eating attitudes. While relations between body weight perception and eating

attitudes were found in some studies in literature, [23] some studies couldn't find those relations in a manner similar to our study. [27,28] Similarly in the literature, it has been stated that eating attitudes were not responsible for the weight of all obese individuals. [29] This finding suggests that obesity or objective body weight are not related to eating attitudes and that the perception of an individual of his/her own body has a role on eating attitudes.

## CONCLUSION

The actual body structures and body weight perceptions of individuals with chronic diseases are not in compliance. Individuals who perceive themselves as obese have lower self-esteem. There is no relation between body weight perception and eating attitudes. It is very important to raise awareness to decrease the risk of chronic diseases related to obesity, to protect the health of obese individuals with chronic diseases, and to decrease or remove possible complications. In this context, nurses who work with individuals with chronic physical diseases not ignoring obesity in disease management, raising awareness on obesity, and forming programs to prevent or remove obesity can prevent the formation of related complications. Additionally, erroneous behavior such as resorting to unhealthy weight control methods as a result of incorrect body weight perception or showing no effort for weight loss as a result of normalizing excessive weight can be prevented from becoming more widespread. As shown in many studies, obese individuals having negative body image and low self-esteem is an important condition that should be considered during treatment. These results show that obese individuals should be evaluated psychologically in a detailed manner and that they should certainly receive psychological support during treatment. By adding psychological treatment, it is thought that the rate of success in obesity treatment can be increased. It is suggested that studies with

larger samples should be performed on body image, obesity, and the psychosocial aspects of obesity in chronic diseases.

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