

Research article

Validation of the Greek version of the Binge Eating Scale in a sample of binge eating disorder patients

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ABSTRACT

Binge eating disorder (BED), the most prevalent eating disorder, carries significant physical and psychological consequences. Therefore, there is a continuous need to assess binge eating symptomatology and evaluate the effectiveness of various therapeutic interventions. The Binge Eating Scale (BES), which is a self-administered questionnaire, is widely used to assess binge eating in obese people. It examines the person's experience of binge eating and the emotional, cognitive, and behavioral symptoms associated with it. The purpose of the present study was to translate and adapt BES in Greek, as well as to assess the factorial structure of BES and evaluate its psychometric properties. A sample of 160 participants (90% females) with a mean age of 40.7 years ($SD=11.5$ years) and a mean body mass index (BMI) of 37.5 kg/m^2 ($SD=9.2 \text{ kg/m}^2$) completed the BES and the Eating Disorder Examination Questionnaire (EDE-Q). An exploratory factor analysis (EFA) was carried out to assess the construct validity of the BES in a sample of patients with BED according to DSM-5 who came for therapy at the Eating Disorders Unit at Eginition Hospital and the day center "Anasa". The two-factor structure fits the data best. Regarding internal consistency, the results were acceptable, with Cronbach's alpha equal to 0.78. The BES has high significant correlations with the Eating Concern, Weight Concern, and Shape Concern subscales and the Global Score of EDE-Q, but not with the Restrain subscale. Also, BES has correlations with the specific EDE-Q questions about the frequency of objective and subjective binge eating episodes. A high correlation was obtained with the measure of BMI too. The Greek version of BES is a valid and reliable scale to evaluate binge eating in a clinical population diagnosed with BED.

KEYWORDS: Binge eating, validity, internal consistency, factor analysis, Binge Eating Scale.

Introduction

Binge eating disorder (BED) is the most common eating disorder (ED).^{1,2} BED according to DSM-5 is characterized by recurrent episodes of binge eating during which an individual experiences a profound sense of loss of control and consumes an amount of food significantly larger than what most people would eat within a similar timeframe and under comparable circumstances. Although after the episodes the individual experiences intense negative emotions

such as guilt and shame, does not use unhealthy compensatory measures.³ A large study, which included data from 14 countries, found a lifetime prevalence average of 1.9%.⁴ BED affects 3.5% of women and 2% of men at some point in their lives.¹ Individuals exhibiting clinical and subclinical symptoms suffer from several comorbid health problems and mental disorders.^{5–8} Although it is argued that there is enough data to include BED in the Global Burden of Disease Study (GBD),^{9,10} BED is often undiagnosed and only a minority of patients receive therapy.¹¹

One thing that has arisen from the recent literature is the necessity for valid instruments for both BED and binge eating behaviors assessment. DSM-5 criteria are widely used by clinicians to diagnose BED.³ Also, the semi-structured clinical interview Eating Disorder Examination (EDE) has been widely used as an assessment tool for BED. EDE is considered the “gold standard” measure of ED psychopathology and includes questions about binge eating behavior, its frequency, and its severity.¹² Apart from the clinical interviews, which need trained clinicians and are time-consuming, self-reported questionnaires have been developed and used to measure the symptomatology and severity of BED. The Eating Disorder Examination Questionnaire (EDE-Q),¹³ the Eating Disorder Inventory (EDI-3),¹⁴ the Loss of Control Over Eating Scale (LOCES),¹⁵ the Three Factor Eating Questionnaire (TFEQ-R18),¹⁶ the Eating Disorder Diagnostic Scale (EDDS),¹⁷ the Yale-Brown obsessive compulsive scale modified for binge eating (YBOCS-BE),¹⁸ the 7-item Binge-Eating Disorder Screener (BEDS-7),¹⁹ the Emotional Eating Scale (EES),²⁰ and the Positive-Negative Emotional Eating Scale (PNEES)²¹ are among those that find application both in clinical practice and research studies, enabling the assessment of binge eating behaviors.

The Binge Eating Scale (BES), a widely utilized tool in both clinical practice and BED research, was developed by Gormally et al.²² BES is a self-administered questionnaire that examines the individual’s experience concerning binge eating and measures the behavioral and emotional/cognitive symptoms associated with binge eating.²² According to the work of Gormally et al²² and as cited by Marcus et al., binge eating symptomatology can be classified into three levels of severity: a score above 27 implies severe binge eating, a score between 18 and 26 indicates moderate binge eating, and a score of 17 or less suggests a lack of binge eating symptomatology.²³

BES demonstrated good validity and internal consistency in the original study, and several studies evaluated its factor structure, validity, and internal consistency in different populations and languages.^{24–28} Although Gormally et al originally proposed a two-factor structure, one describing the emotional/cognitive aspects and the other behaviors related to BES,²² its factor structure is controversial. Marek et al, based on previous results by Hood et al,²⁹ in a sample of bariatric surgery candidates, found a two-factor structure.³⁰ Also, Ziedan et al and Kusbiantrari et al found a two-factor structure in the Lebanese general population and undergraduate Indonesian students, respec-

tively.^{31,32} Robert et al using a sample from a medical outpatient clinic, medical students, and staff, found that the two-factor structure fitted their data best, although when they tested the sensitivity and specificity, they found a unidimensional structure.³³ Yan et al also identified a two-factor structure in a sample of overweight students from five universities.³⁴

On the other hand, some studies have found that a one-factor structure fitted their data best. In the Duarte et al study in a sample of women from the general population and in the Brunault et al study in a clinical sample of morbidly obese patients who were eligible for bariatric surgery and a non-clinical sample, a one-factor structure was found.^{35,36} Similarly, Imperatori et al and Escriva- Martinez et al found a one-factor structure in a sample of obese and overweight patients attending low-energy diet therapy and in a sample consisting of college students, respectively.^{37,38}

BES has been used as a screening tool for BED in various studies. Frietas et al and Ricca et al conducted studies focusing on BES’s sensitivity and specificity and found that it is a valuable screening tool for distinguishing compulsive and non-compulsive eaters.^{24,39} Grupski et al assessed the utility of the BES as a measure of BED in patients seeking bariatric surgery and found that it is a valid screener of BED for these patients.²⁶ Dezhkam et al studied the adaptation of BES in an Iranian obese population and they also found that it can be a valid instrument for screening BED in this population.⁴⁰ Celio et al using a sample from the initial screening phase of a multisite, randomized, controlled trial for the effectiveness of sibutramine in the treatment of BED, found that BES performed satisfactorily as an initial screening tool for BED measurement, but was less accurate in identifying non-BED individuals.²⁵

The BES total score is commonly used in clinical practice as a measure of binge eating severity,^{28,29,37} as well as an instrument to measure the effectiveness of various therapeutic interventions.⁴¹

BES measures not only the severity but also the behavioral and emotional/ cognitive aspects of binge eating behavior. Therefore, it was chosen to measure the changes in binge eating behavior in a therapeutic intervention study in BED patients. Since BES has not been validated in Greek and its psychometric properties have not been assessed in the BED population, the purpose of the present study was to adapt BES into the Greek language and assess the psychometric properties of the Greek version of BES.

Materials and Method

Participants

Participants were 160 adults who applied for treatment at the Eating Disorders Unit, Eginition Hospital, and the Day Centre "Anasa". Initial assessments were conducted by psychologists or psychiatrists to confirm the diagnosis of BED. Furthermore, because the participants were also screened during the initial assessment, to participate in a BED group intervention study, certain exclusion criteria were applied: body mass index (BMI) less than 18.5, active suicidal ideation or psychosis, active use of psychoactive substances or alcohol, attendance at another therapeutic or weight loss program, less than 3 months' treatment with a fixed dose of antidepressants, pregnancy or breast-feeding, and serious health problems. The BMI criterion was applied to exclude remitted Anorexia Nervosa (AN) patients who have recently started to binge. All other exclusion criteria were mainly related to behaviors or patients' characteristics that would prohibit them from effectively participating in a group intervention study. All participants provided the researchers with written informed consent to be included in the study, according to the Helsinki Declaration.

Procedure

Dr. Gormally was approached, and permission was granted to translate BES in Greek and test the validity of the Greek version. The English version of BES was translated into Greek by two independent Greek and English native-speaking translators, following a forward-backward-forward procedure. The translation process adhered to the guidelines outlined by the World Health Organization for the translation and adaptation of instruments.⁴² The questionnaire was originally administered to 10 participants to identify and correct any misconceptions and difficulties in the comprehension of the scale's items.

The questionnaires were administered during the initial assessment and prior to any therapeutic intervention. The research was approved by the Bioethics Committee of the Medical School of the National and Kapodistrian University of Athens (5993/5.62018).

Measures

The Binge Eating Scale (BES), developed by Gormally et al, was used to assess the presence and severity of binge eating.²² It is a self-completed questionnaire that consists of 16 items. Eight items measure the behavioral symptoms, and eight items measure the emotional/cognitive symptoms of BED.

The Eating Disorder Examination Questionnaire (EDE-Q), developed by Fairburn and Beglin, was used to assess ED psychopathology.¹³ It consists of 28 questions on eating behavior during the last 28 days before the examination, with twenty-two of the questions measuring eating psychopathology and 6 measuring the frequency of maladaptive eating behaviors. The questions are clustered into four subscales: restrain eating, eating concern, shape concern, and weight concern. The EDE-Q cannot be used for the diagnosis of BED because it does not assess the full range of the DSM-5 criteria for the disorder over three months. However, it is considered the "gold standard" questionnaire to measure eating psychopathology and it has been validated in the Greek language.^{28,29} EDE-Q was used to assess general eating psychopathology and as a measure of comparison for the assessment of BES. Also, it should be noted that in EDE-Q are included three questions that assess the objective and subjective binge-eating episodes.

A demographics questionnaire was employed to collect data, including age, sex, socioeconomic, family, and educational status, the onset of binge eating behavior, health problems, history of therapy seeking, medication use, and suicidal ideation or attempts.

Anthropometric measures, including weight, height, and BMI, were calculated.

Statistical analysis

Exploratory factor analysis was carried out to evaluate the construct validity of the BES, disclose underlying structures, and reduce the number of variables. Principal component analysis (PCA) was chosen as the extraction method using Quartimax rotation. The Kaiser-Meyer-Olkin procedure for measuring sample adequacy was applied. The cut-off point for factor loadings was 0.40 and for eigenvalues, it was 1.00. Internal consistency was determined by the calculation of Cronbach's alpha coefficient. Scales with alphas equal to or greater than 0.70 were considered acceptable. We tested the extent to which the BES scale was correlated with the EDE-Q and BMI via Pearson's correlation coefficient. The Student's t-test was utilized to examine possible differences in BES score between EDE-Q high and low scorers (cut-off point of 2.6 for females and 3.1 for males, according to the Greek validation of EDE-Q 6.0. 43). Receiver Operating Characteristic curves (ROC) were used to estimate the discriminative capability of the BES total score between participants with more severe ED symptomatology (EDE-Q high score) and those with lower EDE-Q scores. Sensitivity and specificity were calculated for the optimal cut-off. The area under the curve (AUC) was also calculated. All reported p

values are two-tailed. Statistical significance was set at $p < 0.05$ and analyses were conducted using SPSS statistical software (version 26.0).

Results

Sample characteristics

The sample characteristics are presented in table 1. A total of 160 participants took part in the study, with 90% being female. The participants had a mean age of 40.7 years ($SD=11.5$ years). The average BMI was 37.5 kg/m^2 ($SD=9.2 \text{ kg/m}^2$), with 80% of the participants falling into the obese category. The mean age at the onset of the eating disorder was 19.7 years ($SD=11.5$ years).

Factor analysis and internal consistency

Participants' answers to BES questions are presented in detail in table 2. EFA was conducted to examine the construct validity of the BES scale. The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were conducted before EFA to evaluate the factorability. The KMO measure of sampling adequacy was 0.823, and the significance of Bartlett's test of sphericity was equal to <0.001 , meaning that EFA can be applied. After Quartimax rotation and having the criterion of eigenvalues >1 as an extract method, two factors emerged, whose loadings are presented in table 3. The scree plot supported the finding of the two-factor solution (figure 1). The total variance explained was 34.2%. The first factor (named Behavior) contained 8 items and explained 21.1% of the variance, and the second factor (named Feelings/Cognitions) also contained 8 items and explained 13.1% of the variance. All items had loadings greater than 0.4 and no secondary loadings were present; thus, all items were loaded on a factor. Also, internal consistency was acceptable, with a total Cronbach's alpha of 0.78. The mean BES total score was 31.5 ($SD=7.8$, range=12–47), the mean Behavior total score was 14.5 ($SD=4.0$, range=3–22), and the mean Feelings/cognitions total score was 17.0 ($SD=4.8$, range=6–26). Cronbach's alpha if item deleted and item-total correlations are presented in table S1. All items had item-total correlations greater than 0.30. Also, Cronbach's alpha if the item deleted was similar to the overall alpha, so there is no need to remove an item.

BES correlation with EDE-Q and BMI

BES scores were significantly positively associated with all EDE-Q subscales except for Restraint (table 4). In terms of convergent validity, EDE-Q was correlated with binge-eating related items (table 4) and the associations were significant. Also, greater BMI was significantly associated with greater total BES score ($r=0.32$;

Table 1. Sample characteristics.

	N	%
Gender		
Females	144	90.0
Males	16	10.0
Age, mean (SD)	40.7 (11.5)	
Occupation		
Full-time employed	99	61.9
Part-time employed	13	8.1
Unemployed	28	17.5
Student	13	8.1
Other	7	4.4
Family status		
Unmarried	83	51.9
Married	48	30.0
Divorced - Widowed	15	9.4
Living with partner	14	8.8
Educational status		
Middle school graduate	2	1.3
High school graduate	46	28.8
University alumni	39	24.4
Technical university alumni	18	11.3
Post-graduate degree	38	23.8
Other	17	10.6
Ever visited a specialist for mental issues	131	81.9
Age of eating disorder onset, mean (SD)	19.7 (11.5)	
Greater weight ever, mean (SD)	112.9 (29)	
Lowest weight ever, mean (SD)	66 (14.8)	
Current BMI, mean (SD)	37.5 (9.2)	
Current BMI		
Normal	11	6.9
Overweight	21	13.1
Obese	128	80.0
Ever been hospitalized for serious adverse events of your eating disorder	5	3.1
Under treatment (now or in the past)	104	65.0
Ever had an attempt at suicide	20	12.5
Suicidal thoughts	11	6.9
Substance/ Alcohol abuse	6	3.8
Sexual abuse	5	3.1
Physical abuse	10	6.3
Borderline personality disorder	10	6.3
Restraint (EDE-Q), mean (SD)	2.15 (1.54)	
Eating concern (EDE-Q), mean (SD)	3.1 (1.44)	
Shape concern (EDE-Q), mean (SD)	4.38 (1.18)	
Weight concern (EDE-Q), mean (SD)	4.09 (1.24)	
Global score (EDE-Q), mean (SD)	3.43 (1)	
Eating disorder	122 (76.3)	

Table 2. Participants' answers in BES items.

Item	N	%
1	12	7.5
I don't feel self-conscious about my weight or body size when I'm with others.		
I feel concerned about how I look to others, but it normally does not make me feel disappointed with myself.	26	16.3
I do get self-conscious about my appearance and weight which makes me feel disappointed in myself.	76	47.5
I feel very self-conscious about my weight and frequently, I feel intense shame and disgust for myself. I try to avoid social contacts because of my self consciousness.	46	28.8
2	19	11.9
I don't have any difficulty eating slowly in the proper manner.		
Although I seem to "gobble down" foods, I don't end up feeling stuffed because of eating too much.	24	15.0
At times, I tend to eat quickly and then, I feel uncomfortably full afterwards.	49	30.6
I have the habit of bolting down my food, without really chewing it. When this happens, I usually feel uncomfortably stuffed because I've eaten too much.	68	42.5
3	4	2.5
I feel capable to control my eating urges when I want to.		
I feel like I have failed to control my eating more than the average person.	55	34.4
I feel utterly helpless when it comes to feeling in control of my eating urges.	44	27.5
Because I feel so helpless about controlling my eating I have become very desperate about trying to get in control.	57	35.6
4	8	5.0
I don't have the habit of eating when I'm bored.		
I sometimes eat when I'm bored, but often I'm able to "get busy" and get my mind off food.	23	14.4
I have a regular habit of eating when I'm bored, but occasionally, I can use some other activity to get my mind off eating.	57	35.6
I have a strong habit of eating when I'm bored. Nothing seems to help me break the habit.	72	45.0
5	6	3.8
I'm usually physically hungry when I eat something.		
Occasionally, I eat something on impulse even though I am not hungry.	37	23.3
I have the regular habit of eating foods, that I might not enjoy, to satisfy a hungry feeling even though physically, I don't need the food.	89	56.0
Even though I'm not physically hungry, I get a hungry feeling in my mouth that only seems to be satisfied when I eat food, like a sandwich, that fills my mouth. Sometimes, when I eat the food to satisfy my mouth hunger, I then spit the food out so I won't gain weight.	27	17.0
6	9	5.6
I don't feel any guilt or self-hate after I overeat.		
After I overeat, occasionally I feel guilt or self-hate.	67	41.9
Almost all the time I experience strong guilt or self-hate after I overeat.	84	52.5
7	9	5.6
I don't lose total control of my eating when dieting even after periods when I overeat.		
Sometimes when I eat a "forbidden food" on a diet, I feel like I "blew it" and eat even more.	31	19.4
Frequently, I have the habit of saying to myself, "I've blown it now, why not go all the way" when I overeat on a diet. When that happens I eat even more.	70	43.8
I have a regular habit of starting strict diets for myself, but I break the diets by going on an eating binge. My life seems to be either a "feast" or "famine."	50	31.3
8	6	3.8
I rarely eat so much food that I feel uncomfortably stuffed afterward.		
Usually, about once a month, I eat such a quantity of food, that I end up feeling very stuffed.	14	8.8
I have regular periods during the month when I eat large amounts of food, either at mealtime or at snacks.	93	58.1
I eat so much food that I regularly feel quite uncomfortable after eating and sometimes a bit nauseous.	47	29.4
9	30	18.8
My level of calorie intake does not go up very high or go down very low regularly.		
Sometimes after I overeat, I will try to reduce my caloric intake to almost nothing to compensate for the excess calories I've eaten.	29	18.1
I have a regular habit of overeating during the night. It seems that my routine is not to be hungry in the morning but to overeat in the evening.	74	46.3
In my adult years, I have had week-long periods where I practically starve myself. This follows periods when I overeat. It seems I live a life of either "feast or famine."	27	16.9

Continues

Table 2. Continued.

Item	N	%
10	1	0.6
I usually stop eating when I want to. I know when "enough is enough."		
Every so often, I experience a compulsion to eat which I can't seem to control.	9	5.6
Frequently, I experience strong urges to eat which I seem unable to control, but at other times I can control my eating urges.	86	53.8
I feel incapable of controlling my urges to eat. I have a fear of not being able to stop eating voluntarily.	64	40.0
11	5	3.1
I don't have any problem stopping eating when I feel full.		
I usually can stop eating when I feel full but occasionally overeat leaving me feeling uncomfortably stuffed.	54	34.0
I have a problem stopping eating once I start and usually, I feel uncomfortably stuffed after I eat a meal.	86	54.1
Because I have a problem not being able to stop eating when I want, I sometimes have to induce vomiting to relieve my stuffed feeling.	14	8.8
12	36	22.5
I seem to eat just as much when I'm with others (family, social gatherings) as when I'm by myself.		
Sometimes, when I'm with other people, I don't eat as much as I want to eat because I'm self-conscious about my eating.	42	26.3
Frequently, I eat only a small amount of food when others are present because I'm very embarrassed about my eating.	26	16.3
I feel so ashamed about overeating that I pick times to overeat when I know no one will see me. I feel like a "closet eater."	56	35.0
13	14	8.8
I eat three meals a day with only an occasional between-meal snack.		
I eat 3 meals a day, but I also normally snack between meals.	35	21.9
When I am snacking heavily, I get in the habit of skipping regular meals.	25	15.6
There are regular periods when I seem to be continually eating, with no planned meals.	86	53.8
14	8	5.0
I don't think much about trying to control unwanted eating urges.		
At least some of the time, I feel my thoughts are pre-occupied with trying to control my eating urges.	39	24.4
I feel that frequently I spend much time thinking about how much I ate or about trying not to eat anymore.	56	35.0
It seems to me that most of my waking hours are preoccupied by thoughts about eating or not eating.	57	35.6
I feel like I'm constantly struggling not to eat.		
15	5	3.1
I don't think about food a great deal.		
I have strong cravings for food but they last only for brief periods.	46	28.8
I have days when I can't seem to think about anything else but food.	58	36.3
Most of my days seem to be preoccupied with thoughts about food. I feel like I live to eat.	51	31.9
16	7	4.4
I usually know whether or not I'm physically hungry. I take the right portion of food to satisfy me.		
Occasionally, I feel uncertain about knowing whether or not I'm physically hungry. At these times it's hard to know how much food I should take to satisfy me.	109	68.1
Even though I might know how many calories I should eat, I don't have any idea what is a "normal" amount of food for me.	44	27.5

$p=0.17$). As mentioned above, EDE-Q cannot be used for the diagnosis of BED because it does not assess the full range of the DSM-V criteria for BED over six months. But as the "gold standard" questionnaire to measure eating psychopathology, we also used it as a measure of comparison for the assessment of BES. Participants with EDE-Q high scores had significantly greater BES scores compared to those with EDE-Q low scores [mean (SD): 33.3 (7.5) vs. 25.6 (5.5), $p<.001$, respectively].

ROC analysis showed that BES score significantly discriminates between patients with EDE-Q high scores

and those with EDE-Q low scores (AUC=0.79; 95% CI=0.72-0.86; $p<0.001$; figure 2). The optimal cut-off found was 27.5, with a sensitivity of 77.7% and a specificity of 67.6%.

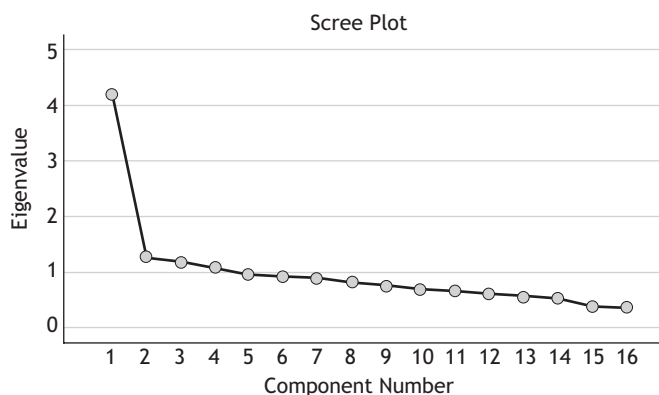
Discussion

This is the first study that evaluates the validity and internal consistency of the Greek version of BES. Also, this is the first study that evaluates the psychometric properties of BES within a BED population. In our study, the two-factor structure fitted the data best. Regarding

Table 3. Exploratory factor analysis results for BES.

Item	Factor	
	Behavior	Feelings/Cognitions
1		0.44
2	0.40	
3		0.48
4	0.63	
5	0.63	
6		0.44
7		0.41
8	0.71	
9	0.45	
10	0.64	
11	0.65	
12		0.51
13	0.48	
14		0.64
15		0.55
16		0.41
% Variance explained	21.1	13.1

Note: Factor loading are presented in the table

**Figure 1.** Scree plot.

internal consistency, the results were acceptable, with Cronbach's alpha equal to 0.78. The optimal cut-off point was 27.5; the 95% confidence interval of AUC was adequate at 0.79 (0.72–0.86), with sensitivity in identifying individuals with binge eating behavior of 77.7% and specificity in identifying individuals without binge eating behavior at 67.6%. Celio et al, also using a score of ≥ 27 to indicate serious binge eating, found that BES had a sensitivity value of 0.85 and a specificity value of 0.20 in identifying individuals with severe binge eating.²⁵ Other studies found an optimal cut-off point of 17. The Portuguese version reported a sensitivity of

97.8% and a specificity of 47.7%,²⁷ the Malay version of the BES showed an 84.6% sensitivity and a 94.9% specificity.³³ The Italian version of the BES had a sensitivity of 84.8% and a specificity of 74.6%.³⁷ The differences between the various studies of BES could be due to the different sample populations and recruitment strategies. In our study, the sample consisted of individuals who applied to or were referred to specialized ED units seeking therapy and were screened for participation in a group therapeutic intervention.

Unfortunately, in the present study, it was not feasible to assess whether the scale was invariant across sexes due to the predominance of female participants (90%). In previous studies, women reported a higher BES total score than men.^{37,39} This is consistent with epidemiological data, which show a higher prevalence of BED in women than men.¹⁻³ It was also found that greater BMI was significantly associated with higher BES scores ($r=0.32$; $p=0.17$). This result is consistent with previous studies, which also found a significant correlation between BMI and BES.^{31,37,39} It is also in line with studies indicating that the most common consequence of binge eating is obesity.⁶ In our sample, 80% of the participants were classified as obese.

When correlating BES with EDE-Q, it was found that a higher EDE-Q score was significantly associated with a higher BES score. Also, BES had significant correlations with the three EDE-Q questions on binge eating behavior. BES has good converging validity. A significantly positive association with all EDE-Q subscales except the Restraint subscale was found. This is consistent with the symptomatology of the BED, as food restraint is not a characteristic of the psychopathology of the disorder. Wilfley et al, who compared BED patients with anorexia nervosa (AN) and bulimia nervosa (BN) patients using EDE-Q, reported that BED patients not only had significantly lower scores on the Restrain subscale but also scored lower on the majority of Restrain subscales compared to AN and BN patients.⁴⁴

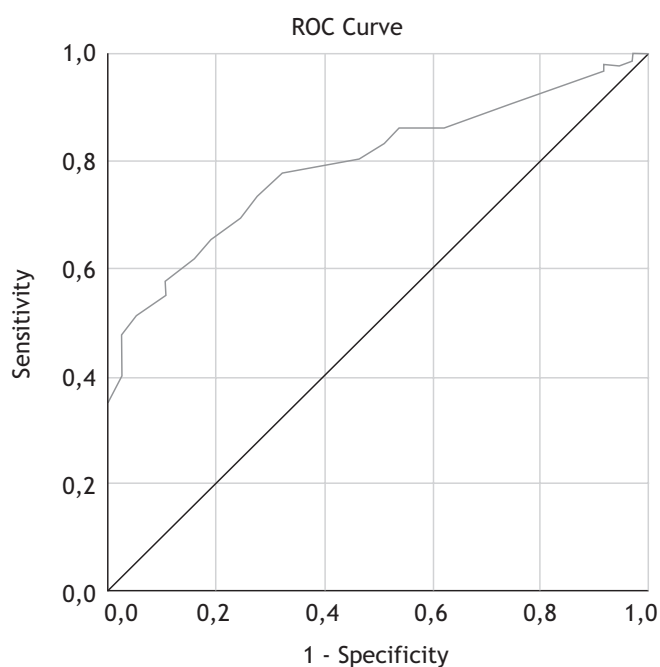
Our findings of a high correlation between BED and EDE-Q Eating Concern, Weight Concern, and Shape concern subscales are consistent with previous studies that have shown that obese binge eaters show high preoccupation with food and weight, as well as greater body dissatisfaction compared with obese non-binge eaters.⁴⁹ These findings are of significant importance because they provide data about the relationship between binge eating and eating, weight, and shape concerns of individuals applying for BED treatment. The above findings could contribute to BED therapy by add-

Table 4. Pearson's correlation coefficients with EDE-Q scales and binge-eating related items.

		Behavior	Feelings/Cognitions	Total BES score
Restraint (EDE-Q)	r	0.00	0.14	0.07
	P	0.982	0.085	0.903
Eating concern (EDE-Q)	r	0.41	0.47	0.52
	P	<0.001	<0.001	<0.001
Shape concern (EDE-Q)	r	0.40	0.50	0.52
	P	<0.001	<0.001	<0.001
Weight concern (EDE-Q)	r	0.37	0.49	0.49
	P	<0.001	<0.001	<0.001
Global score (EDE-Q)	r	0.38	0.52	0.52
	P	<0.001	<0.001	<0.001
EDE-Q item 13	r	0.16	0.22	0.87
	P	0.050	0.005	<0.001
EDE-Q item 14	r	0.22	0.28	0.75
	P	0.006	<0.001	<0.001
EDE-Q item 15	r	0.21	0.26	0.21
	P	0.007	0.001	0.010

Note:

1. Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?
2. On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?
3. Over the past 28 days, on how many DAYS have such episodes of overeating occurred?



AUC=0.79, 95% CI: 0.72-0.86, $p < .001$

Figure 2. ROC curve for BES score.

ing information about binge eating, treatment predictors, and relapse prevention.

The study's limitations include the absence of test-retest reliability assessment and the low representation of male participants. Finally, although the sample size was not large, it was proven adequate for the validation of the questionnaire.

Nonetheless, the present study confirms that the Greek version of the BES is a valid and reliable tool to be used in clinical practice for the evaluation of BED symptomatology in the treatment-seeking population.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi: <https://doi.org/10.22365/jpsych.2024.014>

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Ερευνητική εργασία

Μελέτη επικύρωσης της ελληνικής εκδοχής της Κλίμακας Επεισοδιακής Υπερφαγίας σε πληθυσμό πασχόντων από διαταραχή επεισοδιακής υπερφαγίας

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ΠΕΡΙΛΗΨΗ

Η Διαταραχή Επεισοδιακής Υπερφαγίας (ΔΕΥ), η οποία είναι η πιο συχνή Διαταραχή Πρόσληψης Τροφής (ΔΠΤ), έχει σημαντικές σωματικές και ψυχολογικές συνέπειες. Υπάρχει ανάγκη να αξιολογηθεί και να εκτιμηθεί η υπερφαγική συμπεριφορά και να προταθούν αποτελεσματικές θεραπευτικές παρεμβάσεις. Το αυτό-συμπληρούμενο ερωτηματολόγιο Κλίμακας Επεισοδιακής Υπερφαγίας (Binge Eating Scale, BES) χρησιμοποιείται ευρέως για την εκτίμηση της υπερφαγικής συμπεριφοράς σε άτομα με παχυσαρκία. Η BES εξετάζει την εμπειρία του ατόμου σχετικά με την υπερφαγία και τα συναισθηματικά, γνωσιακά και συμπεριφορικά συμπτώματα που σχετίζονται με την υπερφαγία. Δεν έχει μέχρι σήμερα εξεταστεί η εγκυρότητα και η αξιοπιστία της BES στον Ελληνικό πληθυσμό. Στόχος της παρούσας μελέτης ήταν να εξεταστεί η παραγοντική δομή της BES και να αξιολογηθούν οι ψυχομετρικές ιδιότητές της. Ένα δείγμα 160 συμμετεχόντων (90% γυναίκες) με μέσο όρο ηλικίας 40,7 χρόνια (SD=11,5 years) και μέσο όρο Δείκτη Μάζας Σώματος (ΔΜΣ) 37,5 kg/m² (SD=9,2 kg/m²) συμπλήρωσαν τη BES και το Ερωτηματολόγιο Εξέτασης των Διατροφικών Διαταραχών (Eating Disorder Examination Questionnaire, EDE-Q). Η διερευνητική παραγοντική ανάλυση (EFA) χρησιμοποιήθηκε για να επαληθευτεί η δομή της κλίμακας σε ένα δείγμα πασχόντων από ΔΕΥ σύμφωνα με το DSM-5, οι οποίοι προσήλθαν για θεραπεία στην Μονάδα Διαταραχών Πρόσληψης Τροφής στο Αιγινήτειο Νοσοκομείο και στο Κέντρο Ημέρας "ΑΝΑΣΑ". Το μοντέλο των δύο παραγόντων ταιριάζει καλύτερα στα δεδομένα. Όσον αφορά την αξιοπιστία, τα αποτελέσματα ήταν αποδεκτά με Cronbach's alpha ίσο του 0.78. Η BES είχε σημαντική συσχέτιση με τις υποκλίμακες Ανησυχία σχετικά με την Διατροφή, με το Βάρος και με το Σχήμα του σώματος και το Συνολικό Σκορ του EDE-Q, ενώ δεν βρέθηκε συσχέτιση με την υποκλίμακα Περιορισμός. Επίσης συσχέτιση βρέθηκε με τις ερωτήσεις του EDE-Q που αφορούν τη συχνότητα των αντικειμενικών και υποκειμενικών υπερφαγικών επεισοδίων. Υψηλή συσχέτιση υπήρξε και με τη μέτρηση του ΔΜΣ. Η Ελληνική εκδοχή της BES είναι έγκυρη και αξιόπιστη για να εκτιμήσει την υπερφαγική συμπεριφορά σε κλινικό πληθυσμό που πάσχει από ΔΕΥ.

ΛΕΞΕΙΣ ΕΥΡΕΤΗΡΙΟΥ: Επεισοδιακή υπερφαγία, εγκυρότητα, αξιοπιστία, ανάλυση παραγόντων, Κλίμακα Επεισοδιακής Υπερφαγίας.