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# Bulimia Nervosa and Body Dissatisfaction in Terms of Self-Perception of Body Image

*Layam Anitha, Asma Abdulaziz Alhussaini,  
Hessah Ibrahim Alsuwedan, Hessa Faleh Alnefaie,  
Rehab Abdullallah Almubrek and Shima Abdulaziz Aldaweesh*

## Abstract

Bulimia nervosa is characterized by disturbed body image, repetitive binge eating, and compensatory behaviours such as self-induced vomiting, laxative abuse, or fasting. Body image dissatisfaction and eating disordered behaviours (e.g. food restriction, purging, and binge eating) can affect men and women of varied ages, races, and cultural backgrounds. Body dissatisfaction is defined as a negative subjective evaluation of the weight and shape of one's own body. Body dissatisfaction predicts the onset, severity, and treatment outcomes of eating disorders. A core component of body dissatisfaction is appearance-based social comparisons. In this context a study on self-perception of body image of women in Riyadh in 2018 revealed that a sudden spurt in obesity after marriage is leading to shift of higher percentage of women from positive to negative perception. Overall, an underestimation of body weight in terms of BMI was found among the participants. Such misconceptions should be addressed in view of the high obesity prevalence. It was also evident that positive and negative body image perception will lead to eating disorders in adolescents.

**Keywords:** self-perception, body image, misperception, BMI

## 1. Introduction

The diagnostic and statistical manual (DSM) [1] defines bulimia nervosa as characterised by disturbed body image, repetitive binge eating and compensatory behaviours such as laxative abuse, self-induced vomiting or fasting. Bulimia nervosa was ranked as 12th leading cause of disability adjusted life years (DALYs) in females aged 15–19 years in high income group countries out of 306 mental and physical disorders [2, 3]. Although this ranking did not change globally to a great extent between 1990 and 2013, ranking has been increased from 58th in 1990 to 46th in 2013 in low-income and middle income countries [2]. The review articles of eating disorders showed that it occurred mostly in the high-risk group of young western females [4, 5]. In 2014 Pike et al. found that eating disorders appear to be increasing in Asian and Arab countries in conjunction with increasing industrialization, urbanization and globalization [6]. In Europe, anorexia nervosa is reported

by 1–4%, bulimia nervosa by 1–2% and Binge eating disorders (BED) by 1–4% of women [7]. The highest contributions of total DALY's caused by eating disorders among women aged 15–49 years was observed in India with over 1.32 billion, China over 1.38 billion along with United States [8]. Eating disorders have global distribution and are associated with increasing health burdens in Asia [9].

### **1.1 Association between bulimia nervosa, body image and body dissatisfaction**

Body image has been studied extensively in patients with bulimia nervosa. Body image has been identified as an important factor in eating disorders but little research has been successfully carried out to have meaningful conclusions. Body image dissatisfaction and eating disordered behaviours can affect men and women of varied ages, races, and cultural backgrounds; however psychologists indicate that body image is one of the strongest gender differences in social sciences. Several studies have empirically investigated the role of social influence on body image and dissatisfaction [10]. Factors such as body-image dissatisfaction, the adoption of a perfectionistic attitude towards the body, the restrictive pursuit of thinness, and the development of bulimic tendencies are often indicated in scientific research as predictors of eating disorders [11–15]. However, most researchers focus on selected risk factors and indicate that the risk factors of eating disorders should not be considered separately. These factors seem to constitute the specific syndrome, related to the culture of thinness.

Body image is a multidimensional construct that represents body image evaluation that comprises perceptions, attitudes, and feelings about body size, shape and related behaviours [16]. The attitudinal dimension, also called as body satisfaction, reflects individuals' feeling about their body appearance, and the perceptual dimension is also called as body perception, which reflects individuals' subjective expectancy of their body image [17, 18]. Disturbances of body image perception are considered to be one of the central aspects of anorexia nervosa (AN) and bulimia nervosa (BN) [19]. According to Garner and Garfinkel [20], body image disturbances consist of two separate aspects, i.e. perceptual disturbance and body dissatisfaction. Perceptual disturbance involves the inability to assess the size of one's body accurately. Body dissatisfaction includes affective or attitudinal perceptions of one's body [20].

Body image disturbance (BID) refers to an overvaluation of one's appearance, possibly combined with difficulties in correctly gauging one's size and with pronounced body avoidance or checking behaviour. It is a transdiagnostic feature of AN and BN and assumed to be the core psychopathology of eating and weight disorders [21]. The distinction between body size distortion and body dissatisfaction has been studied in bulimic patients [12]. Although these two concepts have not been included in the DSM-III diagnostic criteria for bulimia nervosa, it has been postulated that a disturbance in body image plays a role in the disorder aetiology. Self-report procedures in the form of semi-structured interviews or questionnaires have been established for the assessment of BID, but experimental setups using specific devices are also commonly used [22, 23]. The different measures of BID are assumed to capture different aspects of BID.

Research has revealed associations between sociocultural aspects and women's perception towards body image. In some cultures, especially for women thinness is accepted as an icon of women whereas in other a medium body mass index (BMI) is accepted. It has been proposed that pressure to be thin from one's environment increases body dissatisfaction because the message to be thin via media or family fraternity will make the individual to feel discontent with their body image in terms of physical appearance. This view has been supported by perceived pressure leading

to subsequent increase in body dissatisfaction [24] and in turn risk of development of an eating disorder [25]. A study was conducted by Massidda et al. [26] to analyse the relations between perceptual body distortion, body dissatisfaction, social influence and body Mass Index and the desire to change in a sample of young women. Results of this study revealed that participants tend to perceive their body as larger than real and they desire their body to be thinner than real which has been supported by Mikolajczyk et al. study [27]. Finally the results revealed that body dissatisfaction appears to be influenced both by social factors and BMI.

Previous research has reported both positive and negative aspects of body image as a psychological construct. A satisfactory body image has been linked to long term mental health and wellbeing [28, 29]. However body image dissatisfaction has been associated with a variety of disturbances that affect psychological functioning and quality of life which has led to unhealthy weight control behaviours and suicidal ideation [30, 31]. In general, people either have a positive or negative impression on the way they look. Some have learned how to be proud and tend to accept the way they look and feel about themselves regardless of what others might say or judge. On the other hand, people with a negative body image usually are dissatisfied. Thus, they tend to exaggerate the evaluation of their whole body or some parts whether bigger or smaller than what they actually are [32].

Based on the western study, women perceived themselves as '62% of overestimation' and '33% just right', while '5% of underestimation' compared with actual weight [33]. Furthermore, Saudi studies reported that only (23.3%) of the students had an agreement between their actual and perceived weight in which ideal body image discrepancies were found among the participants who wanted to be thinner (44.1%) or heavier (19.7%) than their perceived Body image [34]. Preference for a particular body weight and attitudes towards it may be mediated by cultural, personal and familial factors as well as an individual's own weight status [35].

Overall, the focus on ideal body size rather than on a range of acceptable body sizes has contributed to a literature that emphasizes female body size dissatisfactions [42]. Most of recent studies are conducted from western society. Since the issue of weight and weight perception are universal, the influence of social norms cannot be denied. Furthermore, there is a lack of information on how the misperception might affect Saudi women [43]. So, to understand self-perception, it is a demand to understand how people might feel about themselves as they definitely experience physical changes over their lifespan [46]. Study in south western in Saudi Arabia clarified that 76.7% had a disagreement in relation to misperception of body image [34]. Since it was highly significant in Saudi Arabia, where eating disorders and obesity is on increasing pace, it is incumbent to fill the gap and provide a reliable baseline data that might help the policy makers to develop an intervention program.

## **2. Methodology**

A cross-sectional study was conducted in a university, located in Riyadh, Saudi Arabia. Participants are Saudi female from non-health college students and employees ranging in age from 18 to 50 years. The sample size was selected from open EPI website, based on confidence interval 95%. This study included 336 respondents out of which 269 (80%) were students and 67 (20%) were employees. Data was collected by structured self-administered questionnaire and close-ended questions. Some of the questions collected from previous studies and has been modified to be in line of Saudi culture. It includes socio-demographic information (ID, age, marital status, etc.), as well as, questions related to assessment of self-perception of body

image, weight perception, socio-cultural factors affecting body image, lifestyle habits, body satisfaction and media influencers. The data was collected after receiving the approval from ethical committee of university.

### 3. Results and discussion

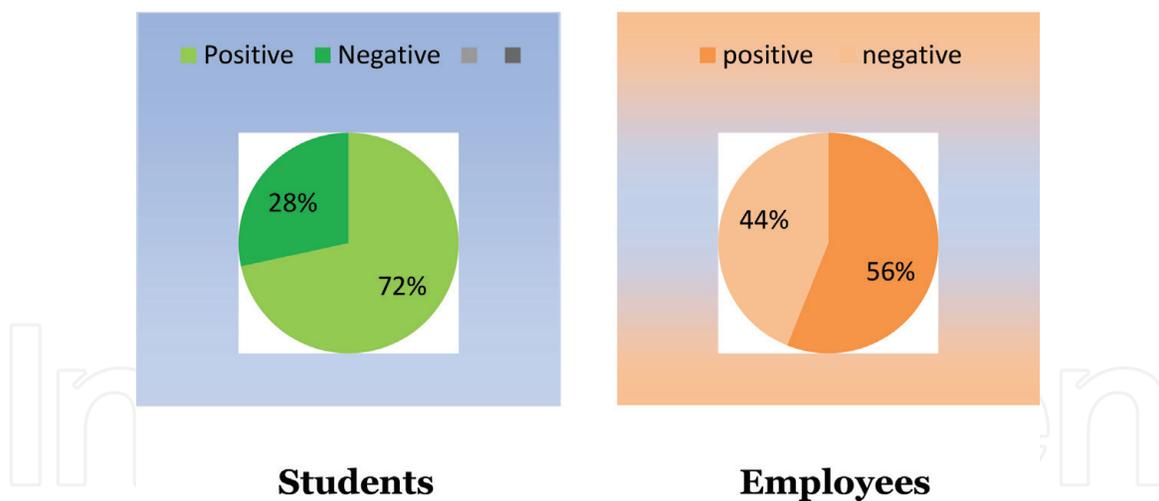
Results of the study are presented in terms of perceived and actual BMI (**Table 1**). According to actual measurement in students, the mean BMI was  $23.72 \pm 8.63$  (Mean = SD) which belong to normal and in employees, the mean was  $27.27 \pm 5.69$  which comes under the overweight category. The perceived mean BMI for students was  $22.68 \pm 9.70$ , belong to normal and in employees, the mean was  $25.74 \pm 6.05$  which comes under the overweight category. The mean for BMI was less to students when compared to employees, though 47.8% of employees belong to 18–29 years of age. In the present study assessing body image self-perception BMI has been used as an indicator of nutritional status associated with determinants of body weight related behaviours. The mean actual BMI was more than the mean perceived BMI both in students and employees. When the perceived BMI is less than the actual and hence this can lead to increase in the obesity incidence in a long run. For preventing and reducing excess weight, the efficacy relies on one's realistic perception and self-awareness of their own body based on a real body size.

Body image was perceived as positive and negative in comparison with actual BMI of students. Out of 269 students, 71.6% have positive body image perception and 28.4% has negative body image perception. The difference between positive and negative body image perception was statistically significant at  $\chi^2(3) = 43.37$ ,  $p < 0.001$ . Out of 66 employees, 56.1% have positive body image perception and 43.9% has negative body image perception and was statistically significant at  $\chi^2(3) = 8.50$ ,  $p = 0.03$ . Percentage of positive perception towards body image was more when compared with negative perception in both the students and employees (**Figure 1**).

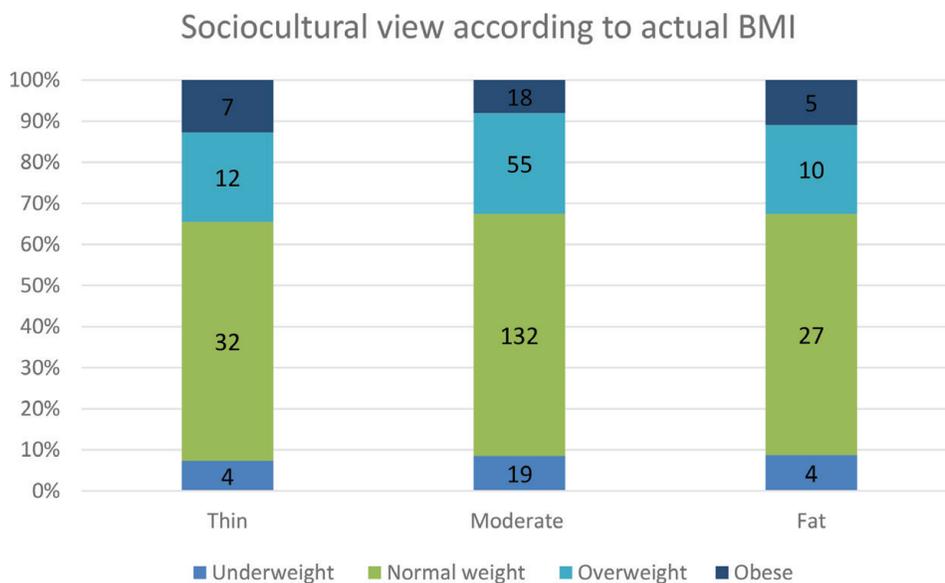
The question regarding the sociocultural view towards body image was asked as 'From 1 to 10 where you think the ideal BI rank according to your sociocultural perspective'. From the mentioned question 1–4 was represented as thin, 5–6 represented moderate and 7–10 as fat. According to actual BMI categories, 132 (40.6%) in normal weight responded that moderate weight is the ideal body in their society. Fat weight was the ideal body image responded by 27 (8.3%) participants of normal

Actual measurements	Students (N = 269)		Employees (N = 67)	
	M	SD	M	SD
Height	156.86	8.03	155.65	5.42
Weight	56.89	11.51	66.05	14.27
Waist circumference	71.89	8.86	82.06	12.14
BMI	23.42	8.63	27.27	5.69
<b>Perceived measurements</b>				
Height	158.7	8.77	157.52	7.23
Weight	56.07	11.01	63.79	14.87
BMI	22.68	9.7	25.74	6.05

**Table 1.**  
Actual and perceived anthropometric measurements of students and employees.



**Figure 1.**  
 Positive and negative perception towards body image among students and employees in PNU.



**Figure 2.**  
 Sociocultural view towards body image according to actual BMI categories among females.

weight category. Of normal weight category, thin weight was opted by 32 (9.9%) as ideal weight and only about 4 (1.2%) individuals from underweight category considered their weight as ideal weight (**Figure 2**). An interesting aspect observed from this study was 24.5% (55 in number) of overweight subjects rated that they belong to moderate scale of body image.

It is evident that 81% of students and 94% of employees felt that appearance is very important, towards the perceptions of body image. Most of the percentage of the students that is 43.1–61.2% in employees wants to change their abdominal part and the good choice to change is through lose weight (48.7% in students and 68.7% in employees) (**Table 2**). 52% of students responded that media sometimes affect the perception of body image and 53.7% of employees responded the same. According to social pressure 49.8% of students responded that it never affects the body image. But 47.8% of employees responded that sometimes social pressure affects their body image (**Table 3**).

About 63.9% of students and 53.7% of employees responded that sometimes they compared their body shape with others. Lowered self-esteem is the highest (49.8%) consequence related to the negative perception of body image by students. Lowered self-esteem (37.3%) and gaining motivation to exercise, eat healthier, etc.

(35.8%) are the highest consequences reported by the employees. Both the students and the employees sometimes have negative thoughts about their bodies which is 59.9 and 58.2% respectively (**Table 4**).

Throughout the adult lifespan, women are experienced to various stages on how they perceive their body which is important to examine the implicit and explicit attitude of self-perception toward body image such as age, education level, marriage,

Importance of appearance	Students		Employees	
	N	%	N	%
Very important	81	35.8	63	94
Moderately important	45	16.7	3	4.5
Slightly important	5	1.9	0	0
Not important	1	0.4	0	0
Total	269	100	66	98.5
<b>Body part wants to change</b>				
Upper part	38	14.1	8	11.9
Abdominal part	116	43.1	41	61.2
Lower part	73	27.1	12	17.9
Nothing	40	14.9	5	7.5
Total	267	99.3	66	98.5
<b>Prefer to</b>				
Do nothing	21	7.8	2	3
Lose weight	131	48.7	46	68.7
Gain weight	40	14.9	4	6
Maintain as it is	77	28.6	14	20.9
Total	269	100	66	98.5

**Table 2.** Descriptive statistics to assess the change towards their appearance of university students and employees.

Media affect	Students		Employees	
	N	%	N	%
Always	86	32	20	29.9
Sometimes	140	52	36	53.7
Never	42	15.6	10	14.9
Total	268	99.6	66	98.5
<b>Social pressure</b>				
Always	37	13.8	21	31.3
Sometimes	97	36.1	32	47.8
Never	134	49.8	13	19.4
Total	268	99.6	66	98.5

**Table 3.** Descriptive statistics for social affect the body image perception of students and employees.

Comparing body shape with others	Students		Employees	
	N	%	N	%
Always	23	8.6	13	19.4
Sometimes	172	63.9	36	53.7
Never	73	27.1	17	25.4
Total	268	99.6	66	98.5
<b>Consequences relate to negative perception of BI</b>				
Being insecure around people	95	35.3	17	25.4
Embarrassment	37	13.8	9	13.4
General unhappiness	58	21.6	10	14.9
Lowered self –esteem	134	49.8	25	37.3
Undesirable to the opposite sex	13	4.8	2	3
Gaining motivation to exercise, eat healthier, etc.	94	34.9	24	35.8
<b>How often do you think a negative thought about your body</b>				
Always	18	6.7	13	19.4
Sometimes	161	59.9	39	58.2
Never	89	33.1	13	19.4
Total	268	99.6	66	97

**Table 4.**  
 Descriptive statistics indicate psychological effect of body image of students and employees.

pregnancy, social role changes, retirement, and menopause which can influence one's perceived level of body satisfaction [36, 37]. From social and psychological dimension, civilized and western societies are increasing the focus on female body image. They are inordinately emphasizing thinness as an ideal standard for beauty. Thus, women receive more social pressure to be beautiful than ever before [38, 39]. Regarding to social pressure, there was a study concerned about social factors and lifestyle associated with obesity among Arab women in Bahrain discovered that the ideal body is the middleweight, which found to be preferred more than thinness and fatness for women that are less socially accepted [34]. The revolution of mass media and fashion models has played an essential role on women perception towards their body image. The media is a powerful channel for transmission and reinforcement of cultural beliefs and values among all ages and ethnicities and other varieties, while it may not be exclusively responsible for determining the standards for physical attractiveness. Advertising, in particular creates a seductive and toxic mix of messages that can be taken seriously for both genders [40]. Nowadays, magazines, celebrities, idols all these agents contributes to make a difference in shaping our lives, changing beliefs and cultures in an imprescriptible way that we cannot even figure. Along with the ideal body image aspect which is being everywhere. A study investigated the satisfaction level in regard to BI among 10-year-old girls and boys. Unfortunately, they were dissatisfied with their bodies after watching their favourite actor or singer in a music video or clip from TV shows [41].

'Misperception of own weight status refers to the discordance between an individual's actual weight status and the perception of his/her weight status' [42]. The discoveries of misperception from a study conducted in Hail about body weight perception, among female university students has shown that, one-third of students misclassifying themselves when compared with actual weight [43]. Several

studies show that female has a lot of curiosity about their body image and worried regarding it more than men. In 2014, a study conducted among Malaysian men and women found a misperception of own weight status and was higher among females (34.5%) compared to males (26.7%) [42]. According to the study, possible consequences might result in restrictive dieting and unhealthy weight control methods which may lead to increase the risk for the development of eating disorders, such as anorexia and bulimia nervosa [44]. Otherwise, underestimating one's own weight is associated with an increase of developing overweight prevalence [45]. Also, it is associated with depression, low self-esteem, feeling of shame, body surveillance, anxious and social isolation [40]. Additionally, Women's perception may shape into interpersonal relationship satisfaction [37].

#### **4. Conclusions**

Researchers believe that the body image of AN and BN individuals are characterised by distortion and disorder. BN is correlated largely with body image. In females due to high obesity percentages in some countries, characterized by more food intake, followed by depression, anxiety and hypochondriacally neurosis has led to body image distortion. Socio cultural factors largely contribute individual's perception in terms of body attractiveness which leads to more body self-image satisfaction or dissatisfaction. There is a statistically significant difference in students and employees towards their self-perception in terms of BMI and body image. Individuals with negative BI perception have functional correlations between the level of eating disorders and BI satisfaction.

#### **Author details**

Layam Anitha\*, Asma Abdulaziz Alhussaini, Hessah Ibrahim Alsuwedan, Hessa Faleh Alnefaie, Rehab Abdullallah Almubrek and Shima Abdulaziz Aldaweesh  
Department of Health Sciences, College of Health and Rehabilitation Sciences,  
Princess Nourah University, Riyadh, KSA

\*Address all correspondence to: layamanitha@gmail.com

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