



Prevalence of body image dissatisfaction among youth in the United Arab Emirates: gender, age, and body mass index differences

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Abstract

The term *body image dissatisfaction* (BID) describes the negative perceptions that a person carries about his or her own body. This study aimed to determine the prevalence of BID among youth in the UAE and how it is affected by three variables: sex, age, and body mass index (BMI). Participants were 728 UAE federal university students who responded to the Body Shape Questionnaire. Results indicated that 36.7% of students are dissatisfied with their body image. Gender differences analysis showed a higher level of BID for men than with women. No significant differences were observed for BID among the four age groups. Significant differences were shown for BID among the four common BMI/weight categories (underweight, normal, overweight, obesity). On the light of the results, the study suggested offering awareness programs for youth about healthy practices in daily life and including health education in schools and colleges curriculum. The study discussed the findings in relation to the available literature in the area and suggested some directions and topics for future research.

Keywords Body image dissatisfaction · Body shape · Youth · Body image · United Arab Emirates

Introduction

The term *body image* describes how a person perceives, thinks, or feels about his or her body and appearance (Damiano et al., 2015). This perception, which can be positive or negative, is usually affected by sociodemographic and environmental factors. Body image concerns have been recently increasing and have clear effects on people of most ages, especially on adolescents and youth (Heron, Smyth, Akano, & Wonderlich, 2013). These effects include, but not limited to, dissatisfaction about body shape, eating disorder, low self-esteem, depression, and the use of unhealthy weight control behaviors (Burrowes, 2013). The term *body image dissatisfaction* (BID) can be defined as the negative attitudes, perceptions, beliefs, or feelings that one carries with respect to his or her own body. This term also encompasses the dissatisfaction related to the gap between the person's actual body and the desire image for an ideal body image (Cash, 1990;

Cooper & Taylor, 1988). This phenomenon, which usually begins in late childhood and adolescence, has become increasingly prevalent on a global scale (Barker & Galambos, 2003; Ferreiro, Seoane, & Senra, 2014; McCreary & Sasse, 2000; Ojala et al., 2007).

Interestingly, food availability has been observed as a significant factor that affects weight and obesity. It is also one of the factors that affect eating patterns and lifestyles which influence the energy that people intake and expenditure (Hamadeh, 2019). Food habits and body image preferences vary across cultures (Sakamaki, Amamoto, Mochida, Shinfuku, & Toyama, 2005), and this cultural difference is related to food availability (Neagu, 2015). In some traditional cultures, fat is a sign of health and welfare thus large bodies are desired. On the other hand, and in modern cultures, fat or overweight is a sign of low level of self-discipline, laziness and lack of control (Grogan, 2017). For example, associations of social economic status with overweight and obesity were reported for women with low-income groups (Gilbert-Diamond, Baylin, Mora-Plazas, & Villamor, 2009). In another study, food insecurity was reported as a determinant factor that led to the increase in the number of women with obese. This paradoxical phenomenon can be explained in the light of the belief that full-bodied people, especially women, could be viewed as healthy and belonging to a higher socioeconomic status (Townsend, Peerson, Love, Achterberg, & Murphy, 2001).

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Several variables that affect BID have been observed, including sex/gender, age, marital status, weight, height, culture, education, and other factors (Barker & Galambos, 2003; Frederick, Jafary, Gruys, & Daniels, 2012; Lawler & Nixon, 2011; Liebman, Cameron, Carson, Brown, & Meyer, 2001; Sarwer, Thompson, & Cash, 2005; Schwartz & Brownell, 2004; Stevens & Tiggemann, 1998; Torres-McGehee & Olgetree-Cusaac, 2011). Recently, many studies internationally have focused on BID, especially in young people such as high school and college students. Because many societal, cultural, environmental, biological, and interpersonal factors play significant roles in the development and prevalence of BID (Derenne & Beresin, 2002), more research is needed at the national level to accurately and closely study BID in specific societies and populations. Compared with other age populations, college students experience more stress and concerns because of their body image (Berg, Frazier, & Sherr, 2009; Neighbors & Sobal, 2007). In the United Arab Emirates (UAE), few studies have been conducted on the prevalence of BID among youth and the multifactorial influences.

In this context, the goal of this study was to determine the prevalence of BID among youth in the UAE and to study the effect of three highly related variables: gender, age, and body mass index (BMI) on the individual's BID. The results from this study can add to an understanding of young people's perceptions of and attitudes toward their body image and how they are affected by several variables. This knowledge and understanding can help in preparing early and appropriate intervention programs to enhance health behaviors and feelings that the students develop toward their body, weight, and body shape. The study conclusions can provide baseline information regarding BID for psychologists, sociologists, educators, and researchers in general, as well others. In the next sections, BID in the UAE is briefly discussed, in addition to describing the relationship between BID and each of the study variables: gender, age, and BMI.

Body Image Dissatisfaction in the UAE

In general, a thin body has been undesirable throughout the Arabic culture, societies, and history compared with a plump body, which has been accepted and considered as symbol of womanhood. However, similar to many developing countries, Arab countries have witnessed clear cultural and economic shifts over the past few decades that have enforced the acceptance of the western lifestyles, including their norms of body image and weight. These changes have altered the perceptions and attitudes of young Arabs toward the western standards and ideals, such considering thinness to be a symbol of beauty and health (Madanat, Lindsay, Hawks, & Ding, 2001). Comparative culture studies with Arab countries have clearly observed continuously increasing BID among young Arabs, especially female youth (Affi-Soweid, Ktelig, & Schediac-

Rizkallah, 2002; Al-Adawi et al., 2002; Mousa, Mashal, AlDomi, & Jibril, 2010). Recent medicine and social studies have reported that 50% of female and > 35% of male individuals are unhappy with their body image (Al Sabbah et al., 2009).

The UAE, as well as other rich Arab Gulf countries, experienced fast cultural and economic changes over the past several years after the discovery and investment of oil. The new culture of modernization began to affect people's attitudes and perceptions about life issues in general, including perceptions toward body image (Tsai, Curbow, & Heinberg, 2003). Whereas most of the previous studies in the UAE focused on the prevalence of weight issues such as overweight/obesity among adolescents (e.g., Al-Haddad, Bertis, & Ghafoor, 2005; Al-Hourani, Henry, & Lightowler, 2003; Malik & Bakir, 2007), few studies have investigated the prevalence of BID and weight-related beliefs and body perceptions. These studies reported different levels of concerns and dissatisfaction about body image or shape especially among young people in general and females in particular (Justin, Khan, & Abdulrahman, 2010; Musaiger, Bin Zaal, & D'Souza, 2012; Radwan et al., 2019; Schulte & Thomas, 2013; Thomas, Khan, & Abdulrahman, 2010).

Physical exercises or activities are less common among girls and women in the UAE as compared with their male counterparts. These gender differences are mainly due to cultural traditions and the lack of female facilities for exercise and activity (Berger & Peerson, 2009; Muttappallymyalil et al., 2010). These factors are highly related to the level of female BID, which, in turn, prevents girls from becoming involved in physical exercises and activities (Neumark-Sztainer, Goeden, Story, & Wall, 2004).

Body Image Dissatisfaction and Gender

Many studies have investigated the nature of the relationship between gender and BID. Researchers concluded that men, in general, are more satisfied with their bodies than women, although they are physically larger than women (Lawler & Nixon, 2011). Therefore, social pressures exert a greater influence on women than men to maintain a slim figure. This finding is supported by the observation that women follow a diet and use unhealthy practices to achieve a thin body more often than men (Liebman et al., 2001; Torres-McGehee & Olgetree-Cusaac, 2011).

Weight concerns are associated with gender (Cruz, Pascual, Salaberria, & Echeburúa, 2015). This means concerns about body weight are different between comparable males and females' populations. However, body dissatisfaction in the male population differs from that in the female population because men desire to develop their muscles. If weight and muscular build are distinct aspects of BID for males, and weight is the main concern for women, then the

construct representing BID is different across genders (Gitimu et al., 2016). In addition, misperception of the body or weight is more likely to occur for women than men. For example, Stunkard, Sørensen, and Schulsinger (1983) found that 29% of women with normal weight perceived themselves as overweight, whereas this perception was noted for only 8% of men.

In general, some men prefer to have an ideal shape but with muscles, whereas some women prefer to lose weight and to look thin. Women's perceptions about themselves are different than those of men—they more often perceive themselves as fat compared with their male counterparts. In addition, women more frequently weigh themselves and try to diet than men. Diet more than exercising is preferred by women, whereas men prefer exercise over dieting and like to gain weight (Radwan et al., 2019). Gender variations have also been observed regarding the labeling of behavior; for example, most men do not term “eating large amount of food” as *bingeing* (Franco, Tamburrino, Carrol, & Bernal, 1988). Eating disorders are commonly related to BID for women (Hill & Bhatti, 1995; Littleton & Ollendick, 2003). Men from western societies are simultaneously led to desire moving away from obesity and toward becoming more muscled (Pope, Phillips, & Olivardia, 2000). Research on satisfaction with body image and shape and related issues has primarily focused on female more than male populations.

In recent years, BID has been increasing worldwide and mainly in the western countries, especially among female populations (Byely, Archibald, Garber, & Brooks-Gunn, 2000; Latzer, Tzischinsky, & Asaiza, 2007). A distinct change of view about the perfect body now as a thin body has also been observed. Thinness is gaining social acceptance, which increases the negative attitudes toward eating to obtain an ideal thin body (Hill & Bhatti, 1995). Many studies reported that men are more satisfied with their physical appearance or body shape than women (Barker & Galambos, 2003; Frederick et al., 2012; Lim & You, 2017; Ojala et al., 2007; Presnell, Bearman, & Slice, 2004; Radwan et al., 2019; Siegel, Yancey, Aneshensel, & Schuler, 1999). Few studies, however, have shown that men are as dissatisfied with their weight and body image as women (e.g., Franco et al., 1988; Miller, Coffman, & Linke, 1980). All what is discussed about the relationship between gender and BID is for people whose sexual orientation is heterosexual rather than homosexual. Sexuality is related to the concerns and attitudes toward body image and shape (Conner, Johnson, & Grogan, 2004; Peplau et al., 2009). Although this factor is important, it is not in the scope of this study.

Body Image Dissatisfaction and Age

Much research has been conducted to explore the effect of age on BID. Age is a significant variable that highly affects feelings and attitudes in general toward body image and weight-

related issues. Researchers have noticed that the female level of BID is age-dependent, with lower levels of body discontentedness in older women, particularly those age > 40 years, compared with younger women (Stevens & Tiggemann, 1998). Research findings indicated that women experience body shape dissatisfaction at all ages, regardless of their marital status, education, and job (Lamb, Jackson, Cassidy, & Priest, 1993). This is mainly due to the “Traditional gender roles link femininity with beauty and the desire for an attractive appearance” (Neagu, 2015, p. 4). “Women from 16 to 63 years reported similar levels of dissatisfaction with weight and shape. Areas of the body that presented most cause for concern did not differ by age...” Women of all ages were able to identify parts of their body that they would like to change, and almost all wanted to be slimmer if possible” (Cash & Smolak, 2011, P. 95). Similar levels of body dissatisfaction for younger and older women were reported (Midlarsky, Marotta, Pirutinsky, Morin, & McGowan, 2018).

Many studies have focused on late childhood and adolescence as critical ages with respect to BID. For example, Latiff, Muhamad, and Rahman (2018) studied BID and its associated variables among 776 primary school students age 11–12 years. Findings showed that >60% of students had BID. In a research among pre-adolescent and adolescent girls age 10–16 years in Jordan, approximately, 21.2% of participants had BID (Mousa et al., 2010). In a research study, high levels of body shape dissatisfaction were observed during adolescence, especially among girls (Kantanista, Osiński, Borowiec, Tomczak, & Król-Zielińska, 2015). In the UAE, a research study among adolescents reported that 27.6% of girls and 39.3% of boys were persuaded by their parents and families to gain weight (Musaiger et al., 2012). During midlife (age 30–60 years), less is known about body image differences between women and men. During these years, individuals experience specific biological, psychological, and social changes that affect their body image (Kilpela, Becker, Wesley, & Stewart, 2015). However, gender variations regarding BID continue. For example, McGuinness and Taylor (2016) observed that in midlife women continue to have greater BID than men.

Body Image Dissatisfaction and Body Mass Index

Body mass index is a measure of a person's body fat based on height and weight. Adults are usually classified into four groups based on their BMI values across a scale: *underweight* < 18.5; *normal* 18.5–24.9, *overweight* 25–29.9, and *obese* ≥ 30. Recently increasing research attention has been focused on studying body image and weight (Sarwer et al., 2005; Schwartz & Brownell, 2004). For many people, overweight and obesity are unclear concepts determined by the value of BMI (Gardner & Brown, 2011; Mikolajczyk et al., 2010). The idea is to relate an individual's perception about his or her own

body image with the individual's real weight to identify any unrealistic perceptions (Kuchler & Variyam, 2003). Involving an individual in behaviors and activities related to weight depends on the individual developing a strong awareness of being with overweight or obese (Lemon, Rosal, Zapka, Borg, & Andersen, 2009).

Body size is usually over- or underestimated (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999) due to the numerous factors that determine the perceptions of body image, such as social/cultural factors, friends, family, gender, and age (Cafri, Yamamiya, Brannick, & Thompson, 2006). The prevalence of obesity is increasing globally and is linked with negative body image attitudes and perceptions. A strong relationship has been observed between BID and BMI, especially among young women and girls (Cash, Morrow, Hrabosky, & Perry, 2004; Chang & Christakis, 2001; Kakeshita & Almedas, 2008; Kostanski, Fisher, & Gullone, 2004; Latiff et al. (2018); Presnell et al., 2004; Radwan et al., 2019). Studies have shown variability in body size preference and in body shape dissatisfaction among children and adolescents are based on their BMI (Altabe, 1998; Siegel et al., 1999; Smolak, Levine, & Striegel-Moore, 1996). The results of these studies emphasize the need for awareness among for youth about the importance of healthy practices in daily life, such as appropriate eating behaviors and consistent physical activities and exercise. These practices improve body size, weight, and body image perception.

Both weight-related attitudes, such as eating and weight concerns, and weight-related behaviors, such as weight-loss efforts and physical activities, associated with weight perceptions among individuals with overweight and obesity (Duncan et al., 2011; Shin & Nam, 2015). For example, Lynch et al. (2009) reported how obesity and body perceptions together affected women's weight behaviors as follows: women with obesity who saw themselves as obese tried to lose weight, whereas women with obesity who saw their weight as normal gained weight. This difference in weight behavior emphasizes the strong relationship between body image perception and weight loss. If an individual feels uncomfortable within his or her own body, then the individual will behave in a way to fight this discomfort (Zaccagni, Asotti, Donati, Mazzoni, & Gualdi-Russo, 2014). This suggests that BID is not always necessarily unreasonable. In fact, this dissatisfaction has some positive effects on people's daily behaviors and practices such as following regular physical education sessions to achieve desired body image. It has been observed recently that a noticeable growth in the number of females doing physical exercises due to the social attitude change towards building healthy bodies (Rouhani, 2018). In another study, high BID was found to be related with the increases in exercise participation (Davis & Cowles, 1991).

The prevalence of body image dissatisfaction has increased globally in response to different sociodemographic, health,

and cultural factors. Body image concerns have clear effects across all age groups, particularly in adolescents. The objectives of this study are to identify the prevalence of BID among university students in the UAE and to investigate the effect of three variables on BID: gender, age, and body mass index (BMI). The results from this study can add to an understanding of young people's perceptions of and attitudes toward their body image. This knowledge can help in preparing early and appropriate intervention programs to enhance health behaviors and feelings that the students develop toward their body, weight, and body shape.

Methodology

Procedure

This is a cross-sectional study where the data have been collected through surveying participating students using a self-report questionnaire instrument. The instrument (BSQ-14) and the procedures were approved by the university Research Ethical Committee before collecting the data. The study was conducted during the summer semester of 2020–2021 academic year which was online because of Covid-19 pandemic. Google Forms platform was used to design and collect the data from the target university students. Participants were guaranteed that their response is voluntary and they can withdraw from the study at any time without any consequences. The collected data were then reviewed and statistically analyzed using the Statistical Package for Social Sciences (SPSS), Version 26. Before any statistical analysis was conducted, the collected data were screened first for possible outliers or missing data, and the few outlier cases were identified.

Population and Sample

The study recruited students of a federal university in the UAE. The university is a medium-sized school with an enrollment of approximately 14,000 students; most are UAE nationals, and about 25% are international students from more than 60 different countries. Participants were from the nine different colleges in the university and from both genders. Data were collected online from a total of 728 students who responded to the instrument used in the study as well as to some demographic questions. Demographic information of the participants was calculated and summarized as presented in Table 1. Age ranged from <19 years to >26 years; most participants (52.1%) were age 20–22 years. The university colleges were represented fairly in the sample, and the highest percentage (33.4%) was from the College of Humanities and Social Sciences, which is the largest college. For BMI, four groups were identified based on the value of this index:

Table 1 Demographic information for the 728 study participants

Age	Number (%)	College	Number (%)	BMI Categories	Number (%)	Gender	Number (%)
19 years or below	167 (22.9)	Hum.	243 (33.4)	Underweight	67 (9.2)	Male	155 (21.3)
20–22 years	379 (52.1)	Bus.	60 (8.2)	Normal	378 (51.9)	Female	572 (78.6)
23–25 years	139 (19.1)	Sci.	97 (13.3)	Overweight	150 (20.6)		
26 years or above	42 (5.8)	Edu.	37 (5.1)	Obesity	72 (9.9)		
		Eng.	115 (15.8)				
		Agr.	46 (6.3)				
		IT	62 (8.5)				
		Law	43 (5.9)				
		Med.	18 (2.5)				

underweight, normal, overweight, and obese. The highest percentage of students was in the normal group (51.9%), followed by the overweight group (20.6%), and the underweight, and obese groups were similar (9.2% and 9.9%, respectively). For gender, female participants represented 78.6% of the sample and male participants represented only 21.3%, which equally reflected the actual percentages of both genders at this university.

Instruments: Body Shape Questionnaire (BSQ-14)

The Body Shape Questionnaire-14 (BSQ-14) is a short version of the original 34-item BSQ (Cooper, Taylor, Cooper, & Fairburn, 1987). The BSQ-14 is highly recommended scale to assess BID in both field application and research (Dowson & Henderson, 2001; Evans & Dolan, 1993). This instrument has valuable psychometric properties and time and effort. For example, in Sweden, Ghaderi and Scott (2004) evaluated the BSQ-14 and reported acceptable psychometric properties. Similar results were obtained by Kapstad, Nelson, Overas, et al. (2015) who used the BSQ-14 on young Norwegian college students to assess their BID and reported satisfactory indices of divergent validity, internal reliability, and concurrent validity.

The BSQ-14 scale has 14 items reflecting the feelings of BID and worrying about body shape. All items are worded in the negative direction, so the higher score, the more BID the respondent experiences. Examples of some items are: Item 1, “Have you been so worried about your shape that you have been feeling you ought to diet?”; Item 7, “Have you felt ashamed of your body?”; and Item 13, “Have you avoided situations where people could see your body (e.g., communal changing rooms or swimming baths)?”. Items were measured on a scale that ranged from *never* (score of 1 point) to always (score of 6 points), so that the scale scores ranged from 14 to 84 points with a theoretical mean value of 49. In the current study, the scale was found to be highly reliable, with an

internal reliability assessed by Cronbach’s alpha of .95 and by McDonald’s omega of .95.

Results

The first objective of the study was to identify the prevalence of BID among youth in the UAE University setting by use of the BSQ-14 scale for responses from 728 students. The mean of the total dissatisfaction score of BSQ-14 for all participants was 41.82 with a standard deviation of 18.42. The distribution of the total score was not normally distributed as assessed by Shapiro-Wilk test ($P < .05$). The frequency analysis of the total BSQ-14 scores showed that a high percentage of students had BID. Specifically, 36.7% of students had a total BID score ≥ 49 , 24.7% had a score of ≥ 56 , and 7.4% had a score ≥ 70 . These data clearly indicate that more than one-third of students are *not* satisfied with their body image.

The second objective of the current study was to investigate the effect of three highly related variables (gender, age, and BMI) on the student’s level of BID. First, gender differences were assessed using independent t tests. Table 2 summarizes the comparisons between the genders. The mean male BID (43.95) was higher than the female BID (41.21), although not big enough to be statistically significant as confirmed by the results of the independent t test.

To obtain detailed information about gender differences, the means and standard deviations of males group were calculated and compared with these of the females’ group.

Table 2 Gender differences in body image dissatisfaction

	N	Mean	Std. Deviation	t-test	Sig
Male	155	43.95	16.98	1.65	.10
Female	572	41.21	18.76		

Table 3 The items from body shape questionnaire-14 with maximum gender differences

Item	Males		Females	
	Mean	SD	Mean	SD
Have you felt excessively large and rounded?	3.39	1.58	3.56	1.87
Have you felt ashamed of your body?	3.15	1.55	2.84	1.66
Have you thought that you are in the shape you are because you lack self-control?	2.86	1.48	1.91	1.44
Have you felt that it is not fair that others are thinner than you?	2.97	1.50	2.63	1.63
Has seeing your reflection (e.g., in a mirror or shop window) made you feel bad about your shape?	3.10	1.50	2.73	1.82
Have you avoided situations where people could see your body	3.41	1.51	3.73	1.76
Has worry about your shape made you feel you ought to exercise?	3.39	1.58	3.56	1.87

Table 3 presented the items with clear difference between the two gender groups. This analysis indicated that more male participants reported BID on six of the seven reported items. For example, they felt ashamed of their bodies, they felt lack of self-control, and they avoided situations in which people could see their bodies at a higher rate than their female counterparts. In contrast, more female than male participants felt that they must exercise.

Age is highly related to BID. To assess how age affected the student's level of dissatisfaction about his/her body image BID, an analysis of variance (ANOVA) test was conducted over the four age groups identified in Table 1. First, the means and the standard deviations of BSQ-14 across the age groups is presented in Table 4. As can be observed from these values, the means are very close to each other, which indicates that there is no practical difference among the four age groups. The highest BID level was 44.06 for the age category of 23–25 years whereas the lowest was 40.57 for the category of age 20–22 years. These small differences did not statistical significance on the ANOVA test ($F_{(3, 723)} = 1.35; p = 0.25$).

Finally, how BMI affected the dissatisfaction BID level was assessed for the 4 BMI groups identified earlier using the ANOVA test. The means and standard deviations of the scores of the BSQ-14 scale over the 4 BMI groups are summarized in Table 5. It is clear from these results that there are large differences in the level of BID among the groups. For example, the mean score for the underweight group was 26.58 whereas that of the obese group was 59.22. It makes sense that

as weight increases, the BID level increases. These strong differences among the means of the four groups are confirmed by the ANOVA test results, which show statistically significance ($F_{(3, 663)} = 74.38; p < 0.000$). In addition, post hoc analysis for pair comparisons showed significant results between all pairs.

Discussion

The primary study objective was to determine the prevalence of BID among university students in the UAE, and the secondary study objective was to assess the relationship between BID and the three important, related variables: gender, age, and BMI. A high percentage (36.7%) of students had BID. This means that above one third of the university students have negative feeling and attitudes toward their body shapes or images. Results showed that the negative feelings and perceptions about body shapes made people feel that they ought to diet and to exercise. These results indicate that BID is as prevalent in this young population in the UAE as it is globally among other international young populations (Barker & Galambos, 2003; Ferreiro et al., 2014; McCreary & Sasse, 2000; Ojala et al., 2007). Within the Arabic context, the results of this study are similar to what has been observed in other similar studies regarding the continuous increase in BID among young Arab populations (Afifi-Soweid et al., 2002; Al-Adawi et al., 2002; Mousa et al., 2010).

Table 4 Means and standard deviations of body shape questionnaire-14 scores for the 4 age groups

Age	N	Mean	Std. Deviation
19 years and below	167	42.50	19.47
from 20 to 22 years	379	40.57	19.07
from 23 to 25 years	139	44.06	15.98
26 years and above	42	41.98	13.72

Table 5 Means and standard deviations of body shape questionnaire-14 scores for the 4 age groups

	N	Mean	Std. Deviation
Underweight	67	26.58	12.87
Normal	378	37.48	16.52
Overweight	150	51.23	16.35
Obesity	72	59.22	15.92

The study did not discuss the actual reasons for the negative feelings and perceptions that these participants developed toward their bodies. However, in a similar study with the same population, Thomas et al. (2010) indicated that the attitudes of disordered eating in the UAE population is related to BID. Also, the difference between the actual body image and the desire for an ideal body image is highly related to the negative feelings about body shape (Cash, 1990; Cooper & Taylor, 1988). The concerns about desired weight or the desired body differ across time. For example, currently, being thin is the desired body shape in many western societies; thus, today many normal-weight young women see themselves as overweight (Barker & Galambos, 2003; Ojala et al., 2007).

Identifying the prevalence of among university students is an essential step for initiating early intervention programs at the university level as well as at the national level in the UAE. The prevalence of young people who are worried about their body shapes and who experience BID increases the need for offering awareness programs and other activities to work toward avoiding unhealthy eating behaviors and to increase physical exercise and activities. This awareness and action will definitely improve body shape, size, and weight, which, in turn, will lead to individuals being more satisfied about their body shape and image (Radwan et al., 2019).

The results showing gender differences in BID in this study were interesting. Unexpectedly, men were more dissatisfied about their body image than women. Descriptive statistics at item level analysis provided interesting differences between the genders. It was found that men felt ashamed of their bodies and they avoided situations in which people could see their bodies at a higher rate than women. This result is different than what is commonly reported in similar literature in which women are more dissatisfied about their physical appearance than men (Barker & Galambos, 2003; Frederick et al., 2012; Lawler & Nixon, 2011; Lim & You, 2017; Ojala et al., 2007; Presnell et al., 2004; Radwan et al., 2019; Siegel et al., 1999). Body shape dissatisfaction research has been concentrated on women more than men. The results of this study draw the attention to the fact that both genders need the same consideration when studying BID.

Age is highly related to BID, especially in younger groups (Stevens & Tiggemann, 1998). This study supported what is clearly observed in the literature about the prevalence of BID among adolescents and youth (Kantanista et al., 2015; Latiff et al., 2018; Mousa et al., 2010) compared with older ages. The results of this study showed close values of BID over the four age groups identified Table 1. This finding can be explained by the nature of the population of this study because the age range of the university students is limited. In addition, most students (>52%) were in one age category of 20–22 years. This factor minimized differences between the BID levels among age groups.

The BMI is an important factor that affects the BID level. The study results showed clear differences in the BID level across the 4 BMI categories of underweight, normal weight, overweight, and obese. In addition, significant differences were observed between all pair comparisons. Similar to what has been observed in this study, strong and positive relationships have been reported in the literature between BID and BMI (Cash et al., 2004; Chang & Christakis, 2001; Kostanski et al., 2004; Latiff et al. (2018); Presnell et al., 2004; Radwan et al., 2019). These data emphasize the importance of BMI in determining the actual body weight status for individuals with overweight and/or obesity, which is the first step to beginning a healthy lifestyle and weight control (Lemon et al., 2009). Lynch et al. (2009) reported how obesity and self-perception together affect weight behaviors in women: women with obesity work to lose weight if they perceive themselves as obese; whereas women with obesity may gain weight if they perceive themselves as normal weight.

Although BMI is common and acceptable measure of healthful weight, it has vital limitations and thus should be used with caution. BMI does not consider gender or age. For example, women tend to have more body fat than men with the same BMI. Another limitation is that it does not differentiate between fat and muscle mass. For example, athletes or bodybuilders with large amounts of muscle mass are easily fall into the overweight or obese categories based on their BMI (Kok, Seidell, & Meinders, 2004). However, BMI is very consistent amongst the general population.

The results of this study showed that body image dissatisfaction is prevalent among youth in the UAE. Young people have negative feelings, attitudes, and perceptions about their bodies. This needs important reactions to appropriately help them deal with these negative issues. Young people should treat themselves with kindness and respect. They should know accurate information about their health physically and psychologically. This emphasizes the need for awareness programs among youth about the importance of healthy practices in daily life, such as appropriate eating behaviors and consistent physical activities and exercise. These practices improve body size, weight, and body image perceptions. Additionally, individuals in general and young people in particular need awareness programs to change any unrealistic views of body image (Kuchler & Variyam, 2003). Health education curriculum is another important factor to address for this population to decrease negative feelings about body image among adolescents and subsequently beyond this age range. Health education curriculum should provide the knowledge, skills, and attitudes to enhance healthy body weight, healthy eating behavior, physical exercises and activities, appropriate diet, and appropriate lifestyle (Musaiger et al., 2012).

Regarding the limitations of the study, self-reported data can be considered as one limitation of this study. Data were collected using a single, self-report questionnaire. No other

data collecting method or tool, such as testing or observation, were used to verify the collected data. The second limitation is that data were collected from only one university in the UAE. To what extent students from other universities or colleges in the country are similar to the students who participated in this study has not been assessed. This may affect the generatability of the results of this study.

The study focused on the prevalence of BID and its relationship with gender, age and BMI. The study has not discussed the causes of these feelings or attitudes in details. Thus, important research questions remain: Why are young people in this population not satisfied with their body image? The physical, cultural, social, and health factors that affect youth perceptions about body image are important topics to study. Additionally, what are the potential health awareness programs that can improve perceptions of young people about their body image, real weight, and weight status can be addressed in future research and investigations. Predicting body image through carefully selected predictors can be another suggested direction for future research in this field.

Data Availability The authors declare that the data is available from the corresponding author.

Declarations

Ethical Statement: Social Sciences Ethics Sub-Committee-Approval Letter This is to certify that Research Proposal N: ERS_2020_6120, Titled: Factorial Equivalence and Gender Invariance of the Arabic Versions of Body Shape Questionnaire, Submitted by the Authors Has Been Reviewed and Approved by the United Arab Emirates University (UAEU) Sub-Committee for Research Ethics in Social Sciences

Informed Consent The application of this study was online. Students clearly informed that their participation is voluntary, that they can withdraw any time if they do not like to continue, and that all the collected data will be confidential and will be used for research purposes.

Conflict of Interest The authors declare that they have no conflict of interest.

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