

# Assessment on the Body Image and Eating Behaviors Among Senior High School Students at Colegio De Santa Catalina De Alejandria, Dumaguete City

Roan Golez Longakit, MD

**Background:** The increasing body image dissatisfaction and disordered eating attitudes among adolescents have become a public health concern globally. Detection and prompt intervention could save adolescents from physiological and psychological health problems.

**Objectives:** The objective of this study was to determine the body image and eating behavior among senior high school students at Colegio de Santa Catalina de Alejandria enrolled in the school year 2020- 2021 and if there is any relationship between their eating behaviors and body image.

**Methods:** This cross-sectional study was conducted on August 2020 to July 2021 at Colegio de Santa Catalina de Alejandria in Dumaguete City. The study utilized the questionnaires: Eating Attitude Test- 26 (EAT-26) in identifying the risk for eating disorders and the Stunkard Scale for the assessment of body image. The participants of the study were Grade 11 & 12 Senior high school students enrolled in the school year 2020-2021. Descriptive statistics including frequency, percentages, mean and standard deviation were calculated for each variable (age, sex, height and weight). The Spearman's rank-order correlation was used to analyze the data in determining any relationship between the body image and eating behaviors of the participants.

**Result:** Body dissatisfaction was noted in a portion of female respondents. EAT-26 was considered positive and confirmed the presence of eating attitudes that were associated with risks for the development of eating behavior disorders in 55% of the sample population. A positive correlation between EAT-26 scores and the body image was also observed among female respondents.

**Conclusion:** The results indicate that attention must be given to eating behavior risks within this group.

**Key words:** adolescent, body image, eating behavior

## INTRODUCTION

### Background of the Study

Body image is a multifaceted construct that includes perceptions of appearance, feelings and thoughts about the body and the effects on the body's function and capabilities.<sup>1</sup> It is described as the assessment of both positive and negative emotion for one's own body parts and their characteristics by himself / for herself. It is a complicated construct that is composed of several components such as mental, emotional, perceptual and behavioral components.<sup>2</sup> Body dissatisfaction is defined as negative attitude towards one's own physical appearance and is the effect of perceived discrepancy between actual body image and the desired ideal body image.<sup>3</sup> A negative body image is associated with a range of adverse health outcomes, including low self-esteem, depressive mood and eating disorder symptoms.<sup>2</sup>

Adolescence, a period of transition from childhood to adulthood, is characterized by psychological, physical and social changes. It is a period of increased awareness of bodily cues and self- reflection, including evaluation of body and appearance.<sup>4</sup> The study of Cuesta-Zamora in 2017 reported that body dissatisfaction studies are important due to various reasons.<sup>1</sup> First body, dissatisfaction is the strongest prediction of eating disorders in adolescents. Second, the age of onset of eating disorder is decreasing, developing in some cases before adolescence. Third, body dissatisfaction and the desire for thinness could have a negative impact on the development of self-esteem. Lastly, body dissatisfaction is associated with increased symptoms of depression in the adolescent.<sup>2</sup> In another study, it was stated that body satisfaction seems to be a prevalent issue in both sexes, but particularly among girls.<sup>5</sup>

Social factors including cultural demands influence body image and body dissatisfaction to obtain the ideal body based on physical appearances. These demands are often shaped by significant social

agents like peers in one's environment.<sup>6</sup> In the case of adolescents, there is a need to meet a standard body image based on values shared by peer groups. It is crucially important because only puberty cause such radical and visible body changes. The role of family, friends and media as sociocultural factors can contribute towards the construction of distorted ideas of body image, so much so that adolescents are pushed to modify their looks. Resorting to or excessive physical exercise with the aim of modifying body shape and image is often followed by inevitable relapses into abnormal eating behavior like bingeing and irregular eating habits which in some cases are remedied using coercive methods such as mechanically induced vomiting or the use of laxatives.<sup>7</sup>

There has been considerable research conducted on body image, eating disorders and other weight-related behaviors among adolescent girls and young women living in developed countries, but with few research studies being done in low-to middle income countries. The increasing number in adolescence at which body image dissatisfaction and disordered eating attitudes occur is of public health concern globally, as it results to physiological and psychological health problems.

Data gathered from this study is useful to everyone handling adolescent. The need to emphasize the importance of developing a healthy body image given the associated physical and psychological health consequences to the adolescent should be strengthened. Furthermore, the result of the study is equally helpful to guidance counselors for enhancing programs that can give orientation to both parents and students concerning perception of body image, eating behaviors and body characteristics of adolescent students

The general objective of the study was to determine the body image and eating behaviors among senior high school students at Colegio de Santa Catalina de Alejandria who are enrolled for the school year 2020-2021.

## METHODS

### Study Design, Subject and Setting

This was a cross-sectional study on body image and eating behaviors conducted among senior high school students of Colegio de Santa Catalina de Alejandria, Dumaguete City from August 2020 to July 2021. The participants of the study were Grade 11 and 12 senior high school students aged 16-19 years old enrolled for school year 2020-2021. Sample size was calculated using calculator.net online sample size calculator tool. The computed sample was 89. Confidence interval was set at 95% and 5% margin of error. All the 113 enrolled students met the inclusion criteria and were provided the questionnaire. However, only 60 completed the questionnaire and included in the study. The study excluded pregnant students, those who were under the influence of alcohol and drug abuse and those who were not willing to participate.

### Data Collection

A self-administered three-part questionnaire was distributed to the students through their teachers. The study was conducted during the Covid-19 pandemic where face to face classes were not done, so

the questionnaires were handed to students when they got their class modules. A contact number was given in case the respondents had any clarifications or questions that needed to be answered. They were given ample time to complete the questionnaire. The first part consisted of the socio-demographic data of the respondents; the second part contained the Eating Attitude Test (EAT-26) used in identifying risk for eating disorders, and the third part contained the Stunkard Scale used in the assessment of self-perception of body image.

Eating Attitude Test (EAT-26) is probably the most widely used standardized self-report measure of symptoms and concerns characteristic of eating disorders. It is a refinement of the original EAT-40 that was first published in 1979 and used in one of the first studies to examine socio-cultural factors in the development and maintenance of eating disorders.<sup>8</sup> EAT-26 is a self-reported questionnaire, composed of 26 items formulated as statements. The interpretation of the EAT-26 is based on three criteria that determine if the respondent should seek further evaluation for risk of having an eating disorder. These are: 1) The total score on the actual EAT test items; 2) Behavioral questions indicating possible eating disorder symptoms or recent significant weight loss; 3) Low body weight compared to age-matched norms. If the respondent meets one or more of these criteria, respondents should seek an evaluation by a professional who specializes in the treatment of eating disorders.<sup>9</sup> Those that obtain a score greater than or equal to 20 is suggestive for a risk of eating disorder, hence they will be referred to a specialist for counseling.<sup>10</sup>

Perceived body image was measured using the Stunkard scale, also known as Figure Rating Scale (FRS). It is a psychometric measurement originally developed in 1983 to communicate about the unknown weights of research subjects. The scale presents nine male and nine female schematic silhouettes, ranging from extreme thinness to extreme obesity. For research purposes, each participant was asked to self-select the silhouette that best indicates his or her current body size and the silhouette that reflects his or her ideal body size (IBS).<sup>11</sup>

Body Mass Index was calculated using a person's height and weight. The formula is  $BMI = \text{kg}/\text{m}^2$  where kg is a person's weight in kilograms and their height in meter squared  $\text{m}^2$ .

### Statistical Data Analysis

Data analysis was made in accordance to the specific objectives of the study. Statistical analysis was performed using Statistica Version 7. Descriptive statistics including frequency, percentages, mean and standard deviation was calculated for each variable (age, sex, height and weight). The association of eating behaviors was determined using Spearman Rank Correlation. The Spearman's rank-order correlation is the non-parametric version of the Pearson product-moment correlation. Spearman's correlation coefficient, ( $\rho$ , also signified by  $r_s$ ) measures the strength and direction of association between two ranked variable, body image and eating behavior of the participants.<sup>12</sup>

### Ethics

The research proposal was approved by the Ethical Review Board of Holy Child Hospital. Informed consent was obtained from

the respondents who participated in the study who were of legal age and has the capacity to decide (Appendix E). Informed assent form was obtained from the parents of respondents who was not yet the age of legal consent or do not have the capacity to decide for themselves. Confidentiality of personal information was ensured by stripping the personal identifiers prior to analysis. The consent form was included in the questionnaire sent and a contact information was included in case respondents/ respondents' parents have any inquiries about the research.

## RESULTS

A total of 60 senior high school students composed of 24 males and 36 females were included in the study. Majority of respondents were females (60%) and 18 years old (58.33%) with a mean age of 17.65 (SD 0.78) years. Most students have normal body mass index with a mean BMI of 22.25 (SD 14.85) for males and 20.04 (SD 3.82) for females. (Table 1)

Table 2 shows the EAT-26 scores of the study population. A number of students reported episodes of having gone on eating binges (36.67%), making themselves sick and vomited (28.33%), and dieted using laxatives and pills (6.67%). No one has ever been treated for an eating disorder. Thirty-four students had normal BMI (56.67%). Four

**Table 1.** Personal characteristics of the study population.

Characteristics	Male (n=24)	Female (n=36)	Total (n=60)
Age, years, n (%)			
16	2 (8.33%)	4 (11.11%)	6 (10.00%)
17	5 (20.83%)	9 (25.00%)	14 (23.33%)
18	15 (62.50%)	20 (55.56%)	35 (58.33%)
19	2 (8.33%)	3 (8.33%)	5 (8.33%)
Age (mean±SD), years	17.71±0.75	17.61±0.80	17.65±0.78
Weight (mean±SD), kg	62.79±14.85	47.94±9.40	53.88±19.87
Height (mean±SD), cm	167.33±8.53	155.14±7.31	160.02±9.75
Body Mass Index (BMI) (mean±SD), kg/m <sup>2</sup>	22.25±14.85	20.04±3.82	21.14±4.00

males were underweight (16.67%) with three overweight (12.50%) and two obese (8.33%). About a third of female students were underweight (30.56%) and there were 2 overweight (5.56%) and 4 (11.11%) obese. More than half of the students had an EAT-26 score of >20 (55%) with a mean score of 19.68 (SD 8.23). The EAT-26 scores revealed that a larger part of the respondents warrant further evaluation for risk of having an eating disorder.

**Table 2.** EAT-26 score of the study population.

EAT-26 Subcomponent Scores	Male (n=24)		Female (n=36)		Total (n=60)	
	Yes	No	Yes	No	Yes	No
Behavioral Questions, n (%)						
Eating Binges/Oral Control	6 (25.00%)	18 (75.00%)	16 (44.44%)	20 (55.56%)	22 (36.67%)	38 (63.33%)
Bulimia and Food Preoccupation	8 (33.33%)	16 (66.67%)	9 (25.00%)	27 (75.00%)	17 (28.33%)	43 (71.67%)
Dieting	3 (12.50%)	21 (87.50%)	1 (2.78%)	35 (97.22%)	4 (6.67%)	56 (93.33%)
Treatment for Eating Disorder	0 (0.00%)	24 (100.00%)	0 (0.00%)	30 (100.00%)	0 (0.00%)	60 (100.00%)
BMI, n (%), kg/m <sup>2</sup>						
Underweight	4 (16.67%)		11 (30.56%)		15 (25.00%)	
Normal	15 (62.50%)		19 (52.78%)		34 (56.67%)	
Overweight	3 (12.50%)		2 (5.56%)		5 (8.33%)	
Obese	2 (8.33%)		4 (11.11%)		6 (10.00%)	
EAT-26 Score Cut-off						
EAT-26 Score <20	11 (45.83%)		16 (44.44%)		27 (45.00%)	
EAT-26 Score ≥20	13 (54.17%)		20 (55.56%)		33 (55.00%)	
EAT-26 Score (mean±SD)	19.08±8.09		20.08±8.42		19.68±8.23	

Table 3 shows the perceived body image as measured by the Stunkard scale. The schematic silhouettes are generally categorized as follows: body image 1 and 2 as underweight, 3 and 4 as normal weight, 5 and 6 as overweight, and 7 to 9 as obese. The overall ideal body image figure is body image 3 (38.33%). For males, both body image 3 and 4 (33.33%) is the ideal figure and body image 3 (41.67%) for females. Most of the male respondents equally identify with body image 3 and 4 (25.00%) and females identify with body image 2 (27.78%) about how they think they look. Together, majority identify with body image 4 (25.00%). Most of the time both male and female respondents feel

they correspond to body image 4 at 25.00% and 22.22% respectively. Fifty percent of male respondents choose body image 5 as the preferred figure by men while females equally prefer body image 3 and 4 (33.33%) in men. Overall, body image 3 and 4 (28.33%) is the preferred body image in men. Both male (50.00%) and female (43.33%) respondents think that body image 3 is the figure most preferred by women. Males find body image 3 in women as the most attractive (41.67%) and most females are also attracted to body image 3 in men (44.44%). Overall, the respondents selected the normal weight silhouette as their current and ideal body size.

**Table 3.** Stunkard scale results of the study population.

Body Image	Male (n=24)	Female (n=36)	Total (n=60)
<b>A. Ideal figure of the respondent</b>			
1	0	1 (2.78%)	1 (1.67%)
2	1 (4.17%)	7 (19.44%)	8 (13.33%)
3	8 (33.33%)	15 (41.67%)	23 (38.33%)
4	8 (33.33%)	11 (30.56%)	19 (31.67%)
5	6 (25.00%)	1 (2.78%)	7 (11.67%)
6	1 (4.17%)	1 (2.78%)	2 (3.33%)
7	0	0	0
8	0	0	0
9	0	0	0
<b>B. How the respondent think they look</b>			
1	1 (4.17%)	3 (8.33%)	4 (6.67%)
2	2 (8.33%)	10 (27.78%)	12 (20.00%)
3	6 (25.00%)	5 (13.89%)	11 (18.33%)
4	6 (25.00%)	9 (25.00%)	15 (25.00%)
5	5 (20.83%)	4 (11.11%)	9 (15.00%)
6	2 (8.33%)	3 (8.33%)	5 (8.33%)
7	2 (8.33%)	2 (5.56%)	4 (6.67%)
8	0	0	0
9	0	0	0
<b>C. How the respondent feels most of the time</b>			
1	0	5 (13.59%)	5 (8.33%)
2	4 (16.67%)	7 (19.44%)	11 (18.33%)
3	3 (12.50%)	3 (8.33%)	6 (10.00%)
4	4 (16.67%)	4 (11.11%)	8 (13.33%)
5	6 (25.00%)	8 (22.22%)	14 (23.33%)
6	3 (12.50%)	5 (13.89%)	8 (13.33%)
7	1 (4.17%)	2 (5.56%)	3 (5.00%)
8	1 (4.17%)	2 (5.56%)	3 (5.00%)
9	2 (8.33%)	0	2 (3.33%)
<b>D. Figure most preferred by men</b>			
1	0	2 (5.56%)	2 (3.33%)
2	2 (8.33%)	6 (16.67%)	8 (13.33%)
3	5 (20.83%)	12 (33.33%)	17 (28.33%)
4	5 (20.83%)	12 (33.33%)	17 (28.33%)
5	12 (50.00%)	4 (11.11%)	16 (26.67%)
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0

E. Figure most preferred by women			
1	0	1 (2.78%)	1 (1.67%)
2	1 (4.17%)	10 (27.78%)	11 (18.33%)
3	12 (50.00%)	14 (38.89%)	26 (43.33%)
4	7 (29.17%)	7 (19.44%)	14 (23.33%)
5	4 (16.67%)	4 (16.67%)	6 (10.00%)
6	0	2 (5.56%)	2 (3.33%)
7	0	0	0
8	0	0	0
9	0	0	0
F. Opposite sex figure the respondent finds most attractive			
1	0	4 (11.11%)	4 (6.67%)
2	1 (4.17%)	8 (22.22%)	9 (15.00%)
3	10 (41.67%)	16 (44.44%)	26 (43.33%)
4	9 (37.50%)	7 (19.44%)	16 (26.67%)
5	4 (16.67%)	1 (2.78%)	5 (8.33%)
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0

**Table 4.** Correlation analysis between the EAT-26 score and body image.

Body Image	Male			Female			Total		
	R	p-value	Inter.	R	p-value	Inter.	R	p-value	Inter.
Ideal figure	-0.0735	0.7327	NC	0.0314	0.8558	NC	-0.0242	0.8546	NC
How the respondent looks	0.1807	0.3981	NC	0.3623	0.0299*	DC	0.2636	0.0418*	DC
How the respondent feels most of the time	0.1780	0.4052	NC	0.3707	0.0261*	DC	0.2924	0.0234*	DC
Figure most preferred by men	-0.0250	0.9078	NC	-0.0891	0.6053	NC	-0.0811	0.5381	NC
Figure most preferred by women	0.3601	0.0839	NC	-0.1864	0.2764	NC	0.0019	0.9884	NC
The opposite sex figure that the respondent finds most attractive	0.2283	0.2833	NC	-0.1697	0.3223	NC	-0.0381	0.7728	NC

NC = no correlation (not significant) DC = direct correlation (significant)

Male (R=-0.059926, p-value=0.780895)

Female (R=0.068844, p-value=0.689922)

Total (R=0.019087, p-value=0.884909)

\*p-value <0.05

## DISCUSSION

Body image is a psychosocial construct, and was proposed by Schilder in the 1930s as “the picture of our own body which we form in our own mind”.<sup>13</sup> When there is a difference between the actual body and the idealized body, people are dissatisfied with their body shape. Body dissatisfaction is believed to have a negative impact on an individual's physical and mental health.<sup>14</sup> Body dissatisfaction may lead people to take extreme actions to change their body shape. This

includes active vomiting and not eating for extended periods.<sup>15,16</sup> These extreme behaviors may cause an eating disorder.<sup>15,17</sup>

The result of this study showed that both male and female differ in how they think they look and on how they feel with regards to their body image. Female respondents identify with body image 2 in 27.78% on how they think they look followed by body image 4 at 25%. Regarding how the female respondent feels most of the time, 19.44% chose body image 2 and 22.22% chose body image 5. For males, the body image they think they look and feel most of the time are in body

image 3 and 4. Thus, there is body dissatisfaction in a portion of female respondents while none in males.

This was also seen in the study done by Pedro, et al. in 2016, where girls have greater risk for body dissatisfaction and even eating disorder and that both low and high body mass index has shown to influence weight control behavior.<sup>6</sup> This study was also similar to the study done by Joseph et al which showed that males have significantly more positive body image than females. It is also interesting to note that similar results have been obtained in studies in some Indian cultures.<sup>18</sup> When viewed together, the overall picture of the study showed that both male and female participants chose the normal weight silhouette in the Stunkard scale as their current and their ideal body size. The study was done during the pandemic where schools did not hold face to face classes. Students at this time may have more time for self-care thus the current and ideal body perception to be normal. Included in the positive outcomes of the pandemic relating to body image, disordered eating and eating disorders is having time for self-care.<sup>19,20</sup> More than half of the study population have an EAT- 26 score of > 20 (55%) and this was considered positive and confirmed the presence of eating attitudes that were associated with risks for the development of eating behavior disorders. This prevalence was much higher compared to that found by Kirsten, et al. among nutrition female students at 24.7%.<sup>21</sup> Studies by Gonçalves, et al. and Bosi, et al. among physical education students showed the prevalence of 14.1% and 6.9% respectively.<sup>22,23</sup> In a study done by Magalhães, et al. among psychology students at a public university in Rio de Janeiro also showed a prevalence of 6.9%.<sup>24</sup> A study conducted in the University of the Philippines that tackled on the issues of the eating behavior of middle-adolescent students had similar results showing that more than half of the respondents have normal weight, and that there were more underweight females than males, and more overweight males than females.<sup>25</sup> In the study done by Panlasigui, when body image and dieting were studied, the male and female respondents mostly had normal BMI followed by underweight respondents due to binge eating, vomiting and dieting.<sup>26</sup> In this study, those respondents who answered affirmatively to any of the behavioral question used to evaluate eating binges or oral control (36.67%), bulimia and food preoccupation (28.33%), and dieting (6.67%) should be re-evaluated by a qualified health professional to determine whether the respondents score really reflects a problem that warrants clinical attention for risk of having an eating disorder.

A positive correlation between EAT-26 scores and the body image was also observed among female respondents in this study. The result shows that in females, "how the respondent looks and "how the respondent feels most of the time" are directly correlated with the EAT-26 subcomponent score/ EAT-26 score. The same findings were also seen in the study done by Hasan, et al. V. Costarelli, et al. and Pattanaburtt, et al.<sup>27,28,29</sup> The higher the body image (from "thin":1 to "obese":5), the tendency for the EAT -26 score /EAT-26 subcomponent scores to move to the higher-level, meaning there is a higher level of concern due to a higher probability of these respondents to develop an eating habit disturbance such as eating binges or oral control, bulimia and food preoccupation, and dieting. The findings could mean that in female respondent, if there is a change in eating behavior there would likely be a change in body image of the respondent or vice versa. A positive or

a negative eating behavior could also result if for example respondents perceive that they have achieved the desired image that they want, most of the time, they would also lessen the abnormal eating behavior. Parents, school administrators, counselors, and other people who worked closely with adolescents should realize that teaching healthy eating habits and placing an emphasis on healthy amounts of exercise can help curb the discrepancies between perceived body image and ideal body image, which will, in turn, lead to greater body satisfaction.<sup>5</sup>

## CONCLUSION AND RECOMMENDATION

This study showed that a portion of female respondents has body dissatisfaction while none in males. Both male and female differ in how they think they look and on how they feel with regards to their body image. EAT-26 was considered positive and confirmed the presence of eating attitudes that were associated with risks for the development of eating behavior disorders in 55% of the study population. A positive correlation between EAT-26 scores and the body image was also observed among female respondents. The results indicate that attention must be given to eating behavior risks within this group.

Since the survey sample was small, the above conclusion applies only to the respondents studied, it is therefore recommended to do further research on the body image and eating behavior among high school students in general.

## REFERENCES

1. Cuesta-Zamora C & Navas L. A review of instruments for assessing body image in preschoolers. *Univ J Educ Res* 2017; 5(10): 1667–7. doi: 10.13189/ujer.2017.051001
2. Nayir T, Uskun E, Yürekli MV, Devran H, Çelik A, Okyay RA. Does body image affect quality of life: A population based study. *PLoS ONE* 2016; 11(9): e0163290. <https://doi.org/10.1371/journal.pone.0163290>
3. Heider N, Spruyt A & De Houwer J. Body dissatisfaction revisited: On the importance of implicit beliefs about actual and ideal body image. *Psychol Belg* 2018; 57: 158–73.
4. Meland E, Haugland S, Bredablik HJ. Body image and perceived health in adolescence. *Health Educ Res* 2007; 22(3):342–50. <https://doi.org/10.1093/her/cyl085>
5. Adkins A & Stivers, K. Behavioral and psychological factors predicting body satisfaction among adolescents. 2016. Retrieved from <https://psych.hanover.edu/research/Thesis06/AdkinsandStivers.pdf>
6. Pedro TM, Micklesfield LK, Kahn K, Tollman SM, Pettifor JM, et al. Body image satisfaction, eating attitudes and perceptions of female body silhouettes in rural South African adolescents. *PLoS ONE* 2016; 11(5): e0154784. <https://doi.org/10.1371/journal.pone.0154784>
7. Pruneti C, Fontana F, Bicchieri L. Eating behavior and body image perception: An epidemiological study on Italian adolescents. *Acta Biomedica : AteneiParmensis* 2005; 75: 179–84.
8. Garner DM and Arvada CO. The Eating Attitudes Test Available @ <https://www.eat-26.com/> (Accessed November 24, 2022).
9. Garner DM. (no date) Available at: <https://www.eat-26.com/interpretation/> (Accessed: November 24, 2022).
10. Garner DM. Eat-26: Eating attitudes test & eating disorder testing, EAT. 2021. Available at: <https://www.eat-26.com/interpretation/> (Accessed: December 13, 2022).



11. Stunkard AJ, Sørensen T, Schulsinger F. Use of the Danish adoption register for the study of obesity and thinness. *Res Publ Assoc Res Nerv Ment Dis* 1983; 60: 115–20.
12. Schenkelberg F. Spearman rank correlation coefficient, Accendo Reliability. Available at: <https://accendoreliability.com/spearman-rank-correlation-coefficient> 2021. (Accessed: December 21, 2022).
13. Schilder PM. *The image and appearance of the human body: studies in the constructive energies of the psyche*. New York: International Universities Press; 1978. Google Scholar
14. Mellor D, Waterhouse M, Mamat NH, Xu X, Cochrane J, McCabe M, et al. Which body features are associated with female adolescents' body dissatisfaction? A cross-cultural study in Australia, China and Malaysia. *Body Image* 2013; 10: 54–61. Article PubMed Google Scholar
15. Forman-Hoffman V. High prevalence of abnormal eating and weight control practices among US high-school students. *Eat Behav* 2004; 5: 325–36. Article PubMed Google Scholar
16. Muris P, Meesters C, Blom W, Mayer B. Biological, psychological, and sociocultural correlates of body change strategies and eating problems in adolescent boys and girls. *Eat Behav* 2005; 6:11– 22. Article PubMed Google Scholar
17. Hayes JF, Fitzsimmons-Craft EE, Karam AM, Jakubiak J, Brown ML, Wilfley DE. Disordered eating attitudes and behaviors in youth with overweight and obesity: implications for treatment. *Curr Obes Rep* 2018; 7: 235–46.
18. Keziah J, Gurmeet K, Jugesh C. To study the body image among the adolescent age group and its correlation with body mass index. *J Evol Med Dental Sci* 2015; 4(27): 4649-59. DOI: 10.14260/jemds/2015/673
19. McCombie C, Austin A, Dalton B, Lawrence V & Schmidt U. Now it's just old habits and misery—understanding the impact of the Covid-19 pandemic on people with current or life-time eating disorders: A qualitative study. *Frontiers in Psychiatry*, 11 2020; 1140. <https://doi.org/10.3389/fpsyt.2020.589225>
20. Termorshuizen JD, Watson HJ, Thornton LM, et al. Early impact of COVID-19 on individuals with self-reported eating disorders: A survey of ~1,000 individuals in the United States and The Netherlands. *Int J Eating Dis* 2020; 53(11): 1780– 90. <https://doi.org/10.1002/eat.23353>
21. Kirsten VR, Fratton F, Porta NBD. Transtornos alimentares em alunas de nutrição do Rio Grande do Sul *Rev Nutr* 2009; 22(2): 219-27.
22. Gonçalves TD, Barbosa MP, Rosa LCL, Rodrigues AM. Comportamento anoréxico e percepção corporal em universitários. *J Bras Psiquiatr* 2008; 57(3): 166-70.
23. Bosi MLM, Luiz RR, Uchimura KY, Oliveira FP. Comportamento alimentar e imagem corporal entre estudantes de educação física. *J Bras Psiquiatr* 2008; 57(1): 28-33.
24. Magalhães MLB, Uchimura Y, Luiz RR. Comportamento alimentar e imagem corporal entre estudantes de Psicologia. *J Bras Psiquiatr* 2009; 58 (3).
25. Don SM, Layosa MA, Evangelista G & Atienza L. Perceived nutritional status, body satisfaction and fad dieting among middle-adolescent students of the University of the Philippines Rural High School. *J Hum Ecol* 2020. Retrieved December 9, 2022, from <https://ovcre.uplb.edu.ph/journals-uplb/index.php/JHE/article/view/521>
26. Panlasigui LN. Body image and dieting and related practices of some adolescents in the University of the Philippines 1998; 1(2): 51–7.
27. Hasan HA , Najm L, Zaurub S , Jami F, Javadi F, Deeb LA, Iskandarani A, Radwan H . Eating disorders and body image concerns as influenced by family and media among university students in Sharjah, UA. *Asia Pacific J Clin Nutr* 2018; 27(3): 695- 700.
28. Costarelli V, Demerzi M, Stamou D. Disordered eating attitudes in relation to body image and emotional intelligence in young women. *J Hum Nutr Diet* 2009; 22 (3): 239-45. <https://doi.org/10.1111/j.1365-277X.2009.00949.x>
29. Pattanathaburt P, Somrongthong R, Thianthai C, . Prevalence of disordered eating behaviors, body image dissatisfaction, and associated factors among Thai female undergraduate students. *Int J Health Prom Educ* 2013; 51(3): 151-60. <https://doi.org/10.1080/14635240.2012.758883>
30. Eat 26intpretscoreing test 3-20-10 Scribd. Scribd. Available at: <https://www.scribd.com/doc/268970950/EAT-26IntpretScoring-Test-3-20-10> (Accessed: December 2, 2022).
31. Eat-26: Eating attitudes test & eating disorder testing. EAT 2021. Available at: <https://www.eat-26.com/interpretation/> (Accessed: November 3, 2022).