

A Study of Body Shape Awareness Based on Body Mass Index of College Students

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Abstract

This research assessed the effects of body shape awareness on body mass index (BMI) based on 165 male and female college students in the G city. First, in assessing satisfaction levels of body shape based on body mass index-based normal weight, there were only 7 (36.8%) male students dissatisfied with their body while there were 95 (85.6%) female students feeling dissatisfied ($p < 0.001$). Second, looking at the difference between real body mass index and idealistic body mass index, all 13 real body mass index-based overweight students (100%) wanted to lose weight to reach idealistic body mass index-based normal weight ($p < 0.001$). Third, looking at the association between body mass index and body shape awareness factors, body mass index and interest in body shape were negatively correlated while body mass index and body shape awareness were positively correlated.

In conclusion, both male and female students preferred underweight over normal weight, mandating the need to induce the establishment of self-awareness for healthy body shape. Therefore, awaken the importance of eating a thing, due to the false body image does not adversely affect a weight control behavior such as not wrong eating habits formed or validation may be necessary proactive nutrition education and counseling about the correct body awareness and healthy eating.

Keywords: *Body Mass Index (BMI). Body Shape, Body Self-Awareness, College Students*

1. Introduction

The meals be made balanced with a healthy diet and reasonable in order to promote human health and normal growth and development. Balanced meal can be made, not made by appetite and food symbols by practice, that is correct eating habits of a diet based on a correct nutrition knowledge [1].

With growing income and improved quality of life, there are more college students consuming processed food and eating out, severely affecting unbalanced nutrition, and thus, increasing prevalence of obesity-related diseases [2],[3]. College students are often independent from their parents, and also active both physically and mentally. Thus, university students need to realize the importance of nutrition intake from balanced diet. Furthermore, to become the necessary workforce in near future, university students are often under heavy amount of work. Therefore, college students must not ignore the importance of balanced diet which will maintain both physical and mental health. As diet pattern in college students can be a prognostic factor for adulthood diseases in future, acquisition and utilization of healthy diet-related information during the university years will lead to healthier adulthood. However, factors such as class time that do not consider meal times, longer free times, part-time jobs, frequent skipping of meals and late-night meals, smoking, and drinking put their diet pattern into very unstable state [4]. Distorted thoughts on

their body shape may result in increased stress, and excessive amount of interest and stress from body shape often negatively impacts mental health which may potentially lead to secondary diseases [5].

Criteria for the beautiful appearance appears to vary according to the age and culture. If the representative body in the past, but seen as an attractive body shape, steamed live to symbolize high social status in modern the Western world on the other hand has skinny body is regarded as an attractive body [6],[1]. In Korea today's society through the mass media and commercial advertisements have a skinny body and a man of muscular women are depicted as the standard for the ideal body type [7]. Social and cultural standards of the idealized body in the body can affect the subjective perception of college students.

By preferred considers preferably the skinny underweight in modern society, there is satisfaction with their body tend to show lower [8]. Of adolescence students there have a lot of sensitivity and concern for his body, a longing for slim gajigi easy to dissatisfaction their body, which tends to lead to indiscriminate weight loss [9]. But accurate knowledge and information about the situation and the lack of a healthy body shape, Rather, it has a problem indiscriminately accept the pouring information from the Internet or a broadcast medium may cause the wrong eating habits formed [8].

The body shape is shown through the training as a general term to categorize the human body style as a personal attribute and (genetic predisposition, constitution, nutrition, disease, *etc.*) morphological characteristics of the body formed by the interaction with the social environment, based on the form should not be mixed with the means for identifying a temporal change, that is, the body indicates the shape of the body can be seen in the balance of physical measurements [10].

Thus people have different body type of each one. But in modern society, despite keeping a lot of people of normal weight by recognizing the underweight in the desired weight, and prefer the skinny on the weight extracurricular escaped with the wrong body recognized that overweight themselves and show a lower tendency satisfaction with body shape [10].

In addition, comparative study of the eating habits and health habits, depression and eating disorders, and differences in nutrient intake of the nursing students' lives Stress, the scores for depression and eating disorder of high stress were significantly higher than those of low stress. High stress is more frequent in skipping, overeating meals and having no exercise than low stress. There was no difference in intake of nutrient, but in both group, intakes of vitamin B2 and C, folic acid, calcium, iron and potassium were very deficient. Therefore, development of counseling and education program to decrease stress and to maintain health of nursing student is recommended [11-12].

A female college students eating habits , body weight control and attitudes and fatigue symptoms in examining the relevance of the study, The affecting factors on the subjective fatigue symptoms were selected various factors such as frequency of the one food, frequency of dining out, having dinner, frequency of instant food intake, frequency of cereal, ice-cream intake, frequency of bean, soybean product intake, frequency of milk, milk product intake, consider excessive intake of sugar, consider excessive intake of salt, self-perception on body type and desire to control weight. Therefore, we can find out that their subjective fatigue symptoms are correlated to the factors in dietary habits, attitude toward body type and weight controls. It is concluded dietary habits and attitude toward body type and weight control themselves cause one's subjective fatigue symptoms, not because of each variables. So, it need efforts of having regular diets, making balanced body and controlling body weights by objective ranges [13].

In the research to determine the subjective health status following the recent weight loss of 20-30 youth-related factors in the country through the National Health and Nutrition Examination Survey data for 2012 in accordance with the subjective body recognized by the Medium (2.61 points), based on when viewed very dry piece (3.03 points) and very obese (3.08 points) was gradually filled subjective poor health, the subjective health status penile weight control methods if you exercise if you do not exercise (2.64 points) (2.74 appeared better than that), it was not as good as if you are taking a prescription weight-loss adjusting agent (if 2.97 points) does not (2.69 points) [14-15]. Distorted thoughts on physical appearance can result in thoughtless weight management, causing students to be on undesirable diet pattern such as fasting, consuming extremely little amount of food, skipping meals, or consuming instant food. This may lead to deficiency in nutrition necessary for growth, and negatively impact physical development [16].

In a prior study of our country middle school students were identified a tendency to over-evaluate their body than the actual body, the body mass index measured objectively showed that many young people are recognized as normal yeoteuna themselves overweight [17-19].

For the girls, it recognized the skinny, regardless of their physical body as the ideal body shape, the ratio of the body to recognize themselves as overweight were higher than male students [20].

These results are not necessarily objective conditions and subjective body awareness body of the youth that must match, suggests the need to explore the impact of the subjective and objective body body recognized youth development separately. Compared to the research results accumulated in the West, body awareness, body satisfaction, national studies on the structure side effect relationship between self-esteem it is lacking [21]. In particular, although the body image and self-image is closely linked to the development of adolescent body, the subjective awareness can have a significant impact on the overall evaluation of self [2] and in the studies were not sufficiently accumulated.

This study assessed body shape awareness according to body mass index in male and female college students, in order to provide fundamental educational data to help students establish sound value systems for desirable body shape awareness.

2. Methodology

All printed material, including text, illustrations, and charts, must be kept within the parameters of the 8 15/16-inch (53.75 picas) column length and 5 15/16-inch (36 picas) column width. Please do not write or print outside of the column parameters. Margins are 3.3cm on the left side, 3.65cm on the right, 2.03cm on the top, and 3.05cm on the bottom. Paper orientation in all pages should be in portrait style.

2.1. Subjects

This research assessed 185 male and female students from a college in the city of "G" using self-administering questionnaire in November 2015. After excluding 20 surveys with insincere responses, total of 165 responses (from 23 males and 132 females) were included in the data analysis.

2.2. Methods

2.2.1. Study Design: This research is a descriptive research to assess obesity and nutritional awareness in college students assessed 185 male and female students from a university in the city of "G" using self-administering questionnaire in November 2015.

After excluding 20 surveys with insincere responses, total of 165 responses (from 23 males and 132 females) were included in the data analysis.

2.2.2. Study Tools: Questionnaire is composed of general questions section and body shape awareness section. Subjects were asked to answer or mark appropriate options in the questionnaire. This research categorized body mass index of <18.5 as underweight, 18.5~23.0 as normal weight, 23.0~24.9 as overweight, and >25.0 as obese, based on the Asian categorization of obesity (Korean Society for the Study of Obesity 2000).

2.2.3. Data Analysis Methods: Statistical analyses were performed using SPSS window 18.0 program. For different categories, frequency, percentage values, and average and standard deviation (Mean±SD) were calculated. Statistical significance was assessed using t-test and χ^2 -test.

3. Results and Discussion

3.1. General Characteristics of the Subjects

There were 23 male and 142 female students, with average age of 24.1 and 23.6 years old respectively. Average height and weight for male students were 174.6cm and 70.0kg, and for female students 162.0 cm and 55.3kg. BMI was 22.9 for male students, and 21.0 for female students. Moreover, there were no underweight or obese male students based on body mass index. 19 students (82.6%) were normal weight and 4 students (17.4%) were overweight. For female students, there were 18 underweight (12.7%), 111 normal weight (78.2%), and 13 overweight (9.1%) students. There was no female student under obese category [Table 1].

3.2. The Subjects' Awareness of Body Shape according to Body Mass Index

The subjects were asked about their thoughts on their body shapes, and there were 4 males (21.1%) and 5 females (4.5%) subjects who considered their body mass index - based normal weight as underweight. For female students, there were 15 subjects (83.3%) who considered their body mass index I-based underweight as underweight in their subjective opinion. For male subjects that were overweight based on body mass index, 4 subjects thought they were normal weight (21.1%), and 2 subjects thought they were overweight (50.0%). For female students, there were 49 subjects (44.1%) who thought they were overweight although they are actually normal weight based on body mass index. There were 12 female students (92.3%) who thought they were overweight and were actually overweight based on body mass index.

The subjects were asked for satisfaction level of their body shapes. With body mass index-based normal weight as standard, for male subjects there were 7 dissatisfied (36.8%), 6 somewhat satisfied (31.6%), and 6 satisfied (31.6%). With BMI-based overweight as standard, there were 2 students (50.0%) that were dissatisfied and 2 students that were somewhat satisfied (50.0%) ($\chi^2=1.732$, $p < 0.421$). For female students with body mass index-based normal weight, 95 (85.6%) were dissatisfied while 13 (11.7%) and 3(2.7%) were somewhat satisfied and satisfied respectively. With body mass index-based overweight as standard, 12 (92.3%) were dissatisfied and 1 (7.7%) was somewhat satisfied. These results indicate that female students are significantly more dissatisfied with their body shapes ($\chi^2=53.864$, $p < 0.001$). For male students with body mass index-based normal weight, 18 students (94.7%) wanted normal weight as idealistic body mass index, and one student (5.6%) wanted overweight as idealistic body mass index.

Table 1. Physical Characteristics of the Subjects

Variables	Male(N=23)	Female(N=142)	Significance
Age(year)	24.1±2.1	23.6±1.7	NS
Height(cm)	174.6±5.4	162.0±5.8	$p<0.001$
Weight(kg)	70.0±7.1	55.3±7.9	$p<0.001$
BMI(kg/m ²)	22.9±1.6	21.0±2.3	
Under weight	0	18(12.7)	
Normal weight	19(82.6)	111(78.2)	$P<0.001$
Over weight	4(17.4)	13(9.1)	
Obesity	None	None	

***: $p < 0.001$

Table 3. The Effects of Health Behavior Practices on Subjective Self-Rated Health

Variables	B	SE B	β
Breakfast	-.032	.029	-.018
Proper sleeping	.216	.031	.114**
Regular exercise	.343	.031	.180**
Regular screening	-.029	.028	-.017
Smoking cessation	.042	.028	.025
Drinking cessation	-.161	.032	-.082**

***: $p < 0.001$

Table 2. Body Shape Awareness of Body Mass Index on Subjects

Variables	Male				Female				
	Under weight (N=0)	Normal weight (N=19)	Over weight (N=4)	Total (N=23)	Under weight (N=18)	Normal weight (N=111)	Over weight (N=13)	Total (N=142)	
Subjective current shape	Underweight	0(0.0)	4(21.1)	0(0.0)	4(17.4)	15(83.3)	5(4.5)	0(0.0)	20(14.0)
	Normal weight	0(0.0)	11(57.8)	2(50.0)	13(56.5)	3(16.7)	57(51.4)	1(7.7)	61(43.0)
	Over weight	0(0.0)	4(21.1)	2(50.0)	6(26.1)	0(0.0)	49(44.1)	12(92.3)	61(43.0)
	Significance	$\chi^2=1.940, p <0.379$				$\chi^2=93.968, p <0.001$			
Body shape satisfaction	Unsatisfied	0(0.0)	7(36.8)	2(50.0)	9(39.1)	4(22.2)	95(85.6)	12(92.3)	111(78.2)
	Normal	0(0.0)	6(31.6)	2(50.0)	8(34.8)	5(27.8)	13(11.7)	1(7.7)	19(13.4)
	Satisfied	0(0.0)	6(31.6)	0(0.0)	6(26.1)	9(50.0)	3(2.7)	0(0.0)	12(8.5)
	Significance	$\chi^2=1.732, p <0.421$				$\chi^2=53.864, p <0.001$			
Ideal BMI	Underweight	0(0.0)	0(0.0)	0(0.0)	0(0.0)	16(88.9)	51(45.9)	0(0.0)	67(47.2)
	Normal weight	0(0.0)	18(94.7)	4(100.0)	22(95.7)	2(11.1)	60(54.1)	13(100.0)	75(52.8)
	Over weight	0(0.0)	1(5.6)	0(0.0)	1(4.3)	0(0.0)	0(0.0)	0(0.0)	0(0.0)
	1 Significance	2 $\chi^2=0.220, p <0.639$				3 $\chi^2=24.245, p <0.001$			

With body mass index-based overweight as standard, all 4 students (100.0%) wanted normal weight as idealistic body mass index ($\chi^2=0.220, p <0.639$). For underweight female students, 16 students (88.9%) had matched real body mass index to idealistic body mass index, while 2 students (11.1%) wanted idealistic body mass index although they were actually underweight. For body mass index-based normal weight female students, 51 students (45.9%) indicated underweight as idealistic body mass index and 60 students (54.1%) wanted normal weight. All 13 subjects (100.0%) who were actually overweight based on body mass index wanted normal weight as idealistic body mass index ($\chi^2=24.245, p <0.001$). Based on these results, male students show more generous characteristics for objective and subjective body mass index. However, about half of the female students who are normal weight want underweight as their idealistic body mass index, showing that female students are more interested in losing weight compared to male students [Table 2].

3.3. Analysis of Relation between Body Mass Index and Body Shape Awareness

Body mass index, we looked at the relationship between the dependent variable body mass index and multiple independent variables such as weight loss goal, interest in weight control, satisfaction level of current body shape, and subjective body shape recognition.

This model's multicollinearity test statistics show the tolerance limit to be 0.503~0.783 and IVF to be 1.277~1.987, indicating no issue in collinearity. Factors that may affect body mass index, including weight loss goal, interest in weight control,

satisfaction level of current body shape, were not statistically significant. However, subjective body shape recognition had an association with BMI. In other words, when subjects thought they were “overweight” or “obese”, their body mass index values were actually higher [Table 3].

It recognizes that the subjects were compared to male students as to whether and how many female students are aware of their body weight than their actual weight. Satisfaction was lower than in the case of female students’ male students on the current body for body satisfaction of subjects, as body mass index increased in both males and females tended to have lowered body satisfaction. The subjects themselves using the desired height and weight was found to prefer underweight compared with the results, compare them male students and female students in terms of body mass index, by actual body mass index.

4. Summary and Conclusions

This research assessed the effects of body shape awareness on Body Mass Index (BMI) based on 165 male and female college students in the city of “G”. More specifically, current subjective body shape awareness, satisfaction level of current body shape, and relationship to idealistic body mass index, and subjective body shape awareness that affect body mass index were investigated. Results were as follows,

1. There was no percentage of male students’ body mass index is underweight and then of overweight yeoteuna 17.4%. Body mass index of female students are underweight and 12.7% were overweight by 9.1%. Comparing male and female students relative to the proportion of underweight female students higher proportion of overweight male students showed nopneun.

2. For female students, there were 49 subjects who thought they were overweight although they are actually normal weight based on body mass index. There were 12 female students who thought they were overweight and were actually overweight based on body mass index. The female students than male students may be said to show that you are aware of a lot of normal weight to overweight.

Satisfaction with the male students was found, if the male students when viewed relative to the normal weight body mass index, 7 people dissatisfied, in the case of female students appeared in 95 people dissatisfied with significant differences. Based on these results, male students show more generous characteristics for objective and subjective body mass index. However, about half of the female students who are normal weight want underweight as their idealistic body mass index, showing that female students are more interested in losing weight compared to male students.

3. It recognizes that the subjects were compared to male students as to whether and how many female students are aware of their body weight than their actual weight. Satisfaction was lower than in the case of female students’ male students on the current body for body satisfaction of subjects, as body mass index increased in both males and females tended to have lowered body satisfaction.

In conclusion, both male and female students preferred underweight over normal weight, mandating the need to induce the establishment of self-awareness for healthy body shape. Therefore, awaken the importance of eating a thing, due to the false body image does not adversely affect a weight control behaviors such as not wrong eating habits formed or validation may be necessary proactive nutrition education and counseling about the correct body awareness and healthy eating.

References

- [1] S. G. Lee, "A study on eating habits and nutrition status of the college whether breakfast on Daegu", Keimyung University, (2007).
- [2] L. Bodnar and K. Wisner, "Nutrition and depression: implications for improving mental health among childbearing-aged women", *Biological Psychiatry*, vol. 58, no. 9, (2005), pp. 679-685.
- [3] J. Y. Park, J. S. You and K. J. Chang, "Dietary taurine intake, nutrients intake, dietary habits and life stress by depression in Korean female college students: a case-control study", *Journal of Biomedical Science*, vol. 1, no. 17, (2010), pp. 1-5.
- [4] H. S. Oh and S. H. Min, "A Study on Dietary Attitudes of College Students in WonJu Areas", *Journal of the Korean Society of Dietary Culture*, vol. 16, no. 3, (2001), pp. 215-224.
- [5] S. J. Cho and C. K. Lim, "Influence on stress caused by obesity degree and weight control from of undergraduate", *Journal of Korean Public Health Association*, vol. 14, (1997), pp. 1-15.
- [6] V. Swami, "The influence of body weight and shape in determining female and male physical attractiveness", In M. V. Kendes (Ed.), *Body image: New research*, New York: Nova Science Publishers, (2006), pp. 35-61.
- [7] Y. J. Joo, "Appearance impact on stress children and youth self-esteem: Gender role the identity and depression variables as parameters", *Journal of the Korea Home Economics Association*, vol. 47, no. 8, (2009), pp. 87-99.
- [8] H. K. Ryu and J. A. Park, "Perception of body image, eating disorder, eating behaviors and subjective health status of female high school and college students in Daegu area", *Korean Journal of Community Living Science*, vol. 13, (2002), pp. 69-80.
- [9] H. S. Cho and M. K. Choi, "A study on body image and dietary habits by the body mass index of middle school students in Chungnam", *Korean Journal of Food & Nutrition*, vol. 23, (2010), pp. 368-375.
- [10] S. Y. Choi, "Relationship of Personality Type (MBTI) and Self-esteem in Different Body Types and Body Images of High School Students", *Yongin University*, (2005).
- [11] M. S. Park and G. E. Park, "The differences of dietary and health-related habits, depression, eating disorder and nutrient intake according to the life stress in nursing college students", *Journal of the Korea Academia-Industrial Cooperation Society*, vol. 18, no. 1, (2014), pp. 344-355.
- [12] Y. H. Sin, Y. H. Hong, and H. O. Kin, "Prevalence of sarcopenia in association with ADL, nutritional status and depression among community dwelling elderly women", *Journal of the Korea Academia-Industrial cooperation Society*, vol. 17, no. 1, (2016), pp. 126-134.
- [13] M. S. Park and G. E. Park, "Relationship between Dietary Habits, Attitudes toward Weight Control and Subjective Fatigue Symptoms in Women College Students", *Journal of the Korea Academia-Industrial cooperation Society*, vol. 14, no. 7, (2014), pp. 3338-3348.
- [14] S. D. Kim, "The relation of younger generation's weight control and their subjective physical condition (Korean National Health and Nutrition Examination Survey 2012)", *Journal of the Korea Academia-Industrial cooperation Society*, vol. 2, (2014), pp. 732-7338.
- [15] S. O. Jang and C. S. Lee, "Prevalence and Management of Dyslipidemia Among Korean Adults: KNHANES 2010-2012", *Journal of the Korea Academia-Industrial Cooperation Society*, vol. 16, no. 11, (2014), pp. 7978-7989.
- [16] H. S. Cho and M. K. Choi, "A study on body image and dietary habits by the body mass index of middle school students in Chungnam", *Korean Journal of Food & Nutrition*, vol. 23, (2010), pp. 368-375.
- [17] J. Y. Lee, "A Study on the Perception of Self-Body Image and Differences of Weight Control Behavior, Eating Disorder by Self-Body Image Distortion in Adolescents", *Korea Education and Research issues*, vol. 24, no. 1, (2006), pp. 63-77.
- [18] H. S. Jang, "Body Image Recognition, Nutrition Knowledge and Nutrient Intakes of Middle School Students according to the Obesity Index", *Journal of the Korea Home and Education*, vol.18, no. 2, (2006), pp. 97-110.
- [19] E. K. Jeong, "A Study on Body Image Perception a Weight Control by Degree of Obesity in Male Students", *Korea Education and Research issues*, vol. 24, no. 1, (2006), pp. 31-39.
- [20] M. H. Kim., M. K. Choi., E. Y. Kim and Y. H. Yean, "A Study on Body Image Recognition and Dietary Habits of Middle School Students in the Chungnam Area", *The Journal of Korea Food and Nutrition*, vol. 25, no. 2, (2012), pp. 338-347.
- [21] K. H. Seo and J. G. Lee, "Investigation of Body-Image Perception, Body Dissatisfaction, and Self-Esteem among Korean Students", *Journal of the Korea Development Growth*, vol. 11, no. 2, (2003), pp. 77-88.
- [22] D. L. Rhode, "The beauty bias: The injustice of appearance in life and law", Oxford: Oxford University Press. Seoul: Bega Books, (2010).
- [23] H. W. Lee, B. J. Lee, H. L. Kim, S. H. Oh, E. J. Jeong and S. J. Ha, "Rights and welfare for adolescents", Seoul: Han Wool, (2008).
- [24] Y. S. Choi, "Body Shape Recognition based on body mass index (BMI) of University Students", *Asia-pacific Proceedings of Applied Science and Engineering for Better Human Life*, Jeju, Republic of Korea, vol. 7, (2016), pp. 18-21.

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