The Relationship Between Eating Disorders, Body Image, Depression and Self-Esteem among College Women[*]

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──────── CONTENTS ────────
 Ⅰ. Introduction          Ⅳ. Conclusion
 Ⅱ. Methodology           References
 Ⅲ. Results and Discussion  Abstract
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Ⅰ. Introduction

1. Significance of the study

Recently, the improvement of food and the influx of Western food culture have brought about overnourishment and an increased the rate of obesity in Korea. Obese women are especially stigmatized, which leads to a high interest in weight and appearance. Also, though not morbidly obese, they are more likely to crash diet when they weigh more than others due to an impossible body image idealized in society(Kim & Kim, 1997; Casel, 1995).

Many women unnecessarily control their weight due to a misunderstanding about obesity, perpetuated by the mass media which contributes to the rise of dieting in women and the social and cultural pressure for women to be thin(Lee, 1997; Choi, 2000). Women are more influenced by the mass media's drive to promote a thin standard of attractiveness than men, according to the study. This distorted situation causes eating disorders, such as dangerously light eating habits and frequent skipping meals (Silverstein & Perdue, 1986).

Eating disorders show diversity and inconsistent eating behaviors, and are divided into anorexia and bulimia nervosa(APA, 1994).

Anorexia nervosa is characterized by a confusion of body image, and the patients

show a negative attitude about their own body in spite of being underweight. Eating disorder patients exhibit anxiety about commonness, a distorted body image, perfectionism, low self-esteem, confusion of sex identity, depression and avoidance of human relation-ships(Encyclopedia of Human Behavior, 1994; Michel et al., 1989).

Cooper & Tayler(1988) suggested that negative body image, depression and low self-esteem revealed in eating disorders have cyclic relations, that is, negative body image increases low self-esteem and depression, and it becomes an eating disorder; also, depression and low self-esteem strengthen negative body image, and it causes an eating disorder. It is difficult to explain the causality between eating disorders and other factors.

Little research has been done on eating disorders in Korea, moreover, much of what is known about eating disorders is based on research largely done on partly related factors to eating disorders.

Accordingly, it is suggested that many-sided research on eating disorders is conducted by using a variety of factors researched respectively in previous studies. This study was conducted to increase the understanding of eating disorders by investigating the characteristics of eating disorders and the relationships between BMI, eating disorders, body image, depression and self-esteem among college women who are

relatively sensitive to appearance.

2. The purpose of the study

The purpose of this study is as follows.

1) to examine the state of weight control for college women
2) to examine the levels of eating disorders, body image, depression and self-esteem amongst college women
3) to examine the differences of eating disorders, body image, depression and self-esteem according to the BMI
4) to investigate the correlation between the BMI, eating disorders, body image, depression and self-esteem

3. Limitations

Our findings cannot be generalized because of limited sample. Therefore, this limitation should be considered for interpreting results.

II. Methodology

1. Research Design

The investigation was a descriptive study. It was done by using a constructive self-report questionnaire, a total of 282 college women(80.0%) were measured.

2. Setting

The study site was one university in

Busan, Korea between Jan.,1st and 30th, 2002. The study subjects were college women of I university.

3. Instruments

The instrument was a constructive questionnaire that consisted of 69 items; 8 general characteristic and weight control related questions, 24 eating disorder questions, 17 body image questions, 10 depression related questions, and 10 self-esteem related questions.

1) BMI(Body Mass Index)

This value is obtained through height and body weight. The body mass index is an indicator for the obesity by Garrow & Webster(1985).

$$BMI = Wt(kg)/ Ht(cm) \times Ht(cm)$$

The subjects were divided into four groups according to the BMI; the underweight group("under19"), the normal weight group("between 20 and 24"), the overweight group(" between 25 and 29"), the obesity group("above30").

2) Eating Disorder

An eating disorder was measured by using a 24 -item questionnaire selected from EAT developed by Garner and Garfinkel (1979) and a Binge-Eating questionnaire developed by Halm Falk and Schwartz (1981). Each question had five from 5 "highly positive" to 1 "highly negative". Higher score meant higher eating disorder. The Cronbach" was .801 in this sample.

3) Body Image

Body image was measured by using a 17 -item questionnaire selected from a body image measurement instrument developed by Osgood. Each question had five from 5 "highly positive" to 1 "highly negative". Higher score meant positive body image. The Cronbach" was .744.

4) Depression

Depression was measured by using a depression measurement instrument developed by Zung. Each question had five from 5 "highly positive" to 1 "highly negative". Higher score meant higher depression. The Cronbach" was .814.

5) Self-Esteem

Self-esteem was measured by using a Self-Esteem Scale developed by Rosenberg which consisted of 10 items. Each question had five from 5 "highly positive" to 1 "highly negative". Higher score meant higher self-esteem. The Cronbach" was .805.

4. Data analysis

Data analysis was done by SPSS/WIN. Numbers and percentages were used to

identify the state of weight control.

To identify the levels of eating disorder, body image, depression and self-esteem perceived by subjects the researcher used means and SDs.

To test significance of subjects' eating disorder, body image, depression and self-esteem according to the BMI the researcher used a t-test. To test the correlation between the BMI, an eating disorder, body image, depression and self-esteem the researcher used Pearson correlation coefficient.

III. Results and Discussion

1. Results

1) State of Weight Control of Subjects

The mean height was 161.76 cm (SD=4.67), and mean weight was 51.67 kg (SD=5.37). According to the BMI, 62.1 % of the subjects were the underweight group, 37.9 % were the normal weight group, and no subjects belonged to the overweight group or the obesity group. 45.7 % of the subjects perceived their own figure as "standard", 35.1 % as "a little fat", 10.3 % as "slender", 5.7 % as "very fat", and 3.2 % as " very slender". In the category of being satisfied with their own figure, the majority of subjects were not satisfied with their own figure. The majority of subjects had an experience of weight

control or had planned to diet.

Subjects selected the method of weight control by themselves without a prescription. The majority of subjects depended on diet or the skipping of meals, rather than exercise. The majority of subjects perceived their health condition as average(See Table1).

2) Eating Disorder

Eating Disorder Levels amongst the Subjects

The mean score for an eating disorder for the whole sample was 55.64, and the total mean score for anorexia nervosa (31.52) was higher than the mean for bulimia nervosa (24.12)(See Table 2).

3) Eating Disorder Levels According to the BMI

Eating disorder levels according to the BMI revealed that the mean score for eating disorders in the normal group was 61.44 and the mean score in the underweight group was 53.79. The normal weight group had significantly higher scores than did the underweight group. This finding suggests there are statistically significant differences between the 2 groups (t=-6.94, p=.000) (See Table3).

4) Body Image

Body Image Perception Levels amongst the Subjects.

36

Table 1. State of weight control of subjects

(n=282)

Characteristic	Classification	Number	Percentage (%)
BMI	Underweight group	175	62.1
	Normal weight group	107	37.9
Figure perceived by subject	Very slender	9	3.2
	Slender	29	10.3
	Standard	129	45.7
	A little fat	99	35.1
	Very fat	16	5.7
Level of satisfaction with figure	Satisfied	34	12.0
	A little unsatisfied	210	74.5
	Very much unsatisfied	38	13.5
Experience with weight control	Have done	97	34.4
	Doing now	44	15.6
	Will	89	31.6
	Will not do	52	18.4
Choice of method of weight control	Subject"s decision	167	59.2
	Friend"s experience	33	11.7
	Mass media	54	19.1
	Specialist"s prescription	1	0.4
	Family	13	4.6
	Others	14	5.0
Method of weight control	Skipping of breakfast	7	2.5
	Light eating	120	42.6
	Reduction of snacks	86	30.5
	Increase of exercise	59	20.9
	Choice of low calories food	10	3.5
Health condition perceived by subject	Very good	20	7.1
	Good	97	34.4
	Average	147	52.1
	Bad	18	6.4

Table 2. Eating disorder levels amongst the subjects

		Mean	SD
Eating disorder	Anorexia nervosa	31.52	4.92
	Bulimia nervosa	24.12	6.24
	Total	55.64	9.13

Table 3. Eating disorder levels according to the BMI

	Mean(SD)	T	P
Underweight group	53.79(7.92)	-6.94	.000
Normal weight group	61.44(10.56)		

37

8) Self-Esteem
Self-Esteem Levels amongst the Subjects
The mean score for self-esteem for the subjects was 32.60 and ranged from 15 to 39 (See Table 8).

9) Self-Esteem Levels According to the BMI
The mean scores for self-esteem for the underweight group and the normal weight group were 32.70 and 32.40, respectively. This finding supports no significant differences between the 2 groups in the level of self-esteem (t=0.53, p=.591) (See Table 9).

Correlation Between the BMI, an Eating Disorder, Body Image, Depression and Self-Esteem for the Subjects.

There were high positive correlations between the BMI and an eating disorder (r=.383, p<.01), between an eating disorder and depression (r=.161, p>.01), and between body image and self-esteem (r=.653, p<.01). Also, there were high negative correlations between an eating disorder and body image (r=-.214, p<.01), between an eating disorder and self-esteem (r=-.196, P<.01), between depression and body image (r=-541, p<.01), and between depression and self-esteem (r=-.537, p<.01) (See Table 10).

Table 8. Self-esteem levels amongst the subjects

	Mean	SD	Maximum	Minimum
Self-esteem	32.60	3.4	39	15

Table 9. self-esteem levels according to the BMI

	Mean(SD)	T	P
Underweight group	32.7(3.4)	0.53	.591
Normal weight group	32.4(3.5)		

Table 10. Correlation between the BMI, an eating disorder, depression, body image and self-esteem for the subjects

	BMI	Eating disorder	Depression	Body image	Self-esteem
BMI	1.000				
Eating disorder	.383**	1.000			
Depression	-.001	.161**	1.000		
Body image	-.007	-.214**	-.541**	1.000	
Self-esteem	-.032	-.196**	-.537**	.653**	1.000

** p<.01

2. Discussion

In Korea, though not morbidly obese, young women are more likely to crash diet when they weigh more than others, and they are distressed by the phobia of obesity due to social pressures about possessing a slender figure. Subjects in this study were college women and they tended to identify "attractive" with "slender" ; therefore, an eating disorder is apt to occur because this period of life they are faced with marriage and choice of an occupation, according to Erickson's development stages.

While 62.1 % of the subjects were in the underweight group and 37.9 % of the subjects were in the normal weight group according to the BMI, 40 % of the subjects perceived themselves as overweight. These findings indicate that the subjects have a distorted understanding about their own figure, and the capricious views of beauty, mass media and ads contribute to these finding.

88 % of the subjects were unsatisfied with their own figure. This could stem from the ideal criteria of beauty. Accordingly, it is indicated that a realistic view of beauty is presented. In this study, the majority of subjects chose a method of weight control without a specialist"s prescription. Actually, in Korea, there are harmful effects due to dieting without a doctor"s counsel.

The normal weight group had significantly higher eating disorder levels than did the underweight group (t=-.684, p=.000), and this finding indicates that subjects perceived themselves as overweight despite being a normal weight.

There were no statistically significant differences between the underweight group and the normal weight group in body image perception levels (t=0.11, p=.910).

This could stem from both groups that had positive body images, because they were not obese. Subjects were a little depressed, and further investigation is indicated to determine whether this depression is connected with the figures or with other factors. There were no significant differences between the 2 groups in the level of self-esteem according to the BMI (t=0.53, p=.591) because both groups had positive body images, due to not being obese.

There were high positive correlations between the BMI and an eating disorder (r=.383, p<.01), between an eating disorder and depression (r=.161, p<.01),and between body image and self-esteem (r=.653, p<.01). The correlation between the BMI and an eating disorder indicates that the more subjects perceive themselves as overweight, the more they have the possibility of developing anorexia nervosa or bulimia nervosa. The correlation between an eating disorder and depression was a little low. However, some investigators have suggested that morbid emotions might contribute to an

eating disorder.

Master et al. (1995) certainly suggested that hypochondria is a general and significant problem for eating disorder patients. There was high correlation between body image and self-esteem, and this finding suggests that more positive body images indicate higher levels of self-esteem. Also, there were high negative correlations between an eating disorder and self-esteem (r=-.541, p<01), and between depression and self-esteem (r=-.537, p<.01). Cooper & Taylor (1988) suggested that there is a cyclic relation between an eating disorder, dissatisfaction with one's figure, depression and low self-esteem; that is, higher levels of dissatisfaction with one's figure increase low self-esteem and depression, and it often develops into an eating disorder. In addition, depression and low self-esteem strengthen dissatisfaction with one's figure and it often causes an eating disorder. This supports the results of this study. Accordingly, there is a high correlation between an eating disorder, body image, depression and self-esteem for college women.

Some counterplans are indicated to prevent eating disorders from proliferating among college women. Additionally, the best way to manage an eating disorder is to approach individually to prevent the sufferer from psychological and physical damage due to the eating disorder.

IV. Conclusion

This study was conducted to investigate the relationship between an eating disorder, body image, depression and self-esteem amongst a subject group of 282 college women between Jan.,1st and 30th,2002, to provide base data for eating disorder levels of college women and to provide base data for health control. The evaluative instrument was a constructive questionnaire that consisted of 8 items of general characteristics and weight control questions, 24 questions relating to eating disorders, 17 questions pertaining to body image, 10 questions pertaining to depression and 10 questions pertaining to self- esteem. Numbers and percentages were used to identify the state of weight control amongst the subjects. To identify the levels of an eating disorder, body image, depression and self-esteem perceived by subjects, the researcher used means and SDs. To test the significance of a subject"s eating disorder, body image, depression and self-esteem according to the BMI, the researcher used the t-test.

To test the correlation between the BMI, an eating disorder, body image, depression and self-esteem, the researcher used Pearson correlation coefficient.

The results of this study are as follows.

The mean height was 161.76 cm, mean

weight, 51.67 kg. 62.1 % of the subjects were in the underweight group, 37.9 % were in the normal weight group.

45.7 % of the subjects perceived their own figure as "standard", 35 % as " a little fat", 5.7 % as "very fat". The majority of subjects perceived themselves as overweight in spite of not being obese. 88 % of the subjects were not satisfied with their own figure.

82 % of the subjects had an experience with weight control. The majority of subjects depended on light eating (42.6 %) and a reduction of snacks (30.5 %) as methods of weight control.

The mean score for anorexia nervosa was 31.52 and the mean score for bulimia nervosa was 24.12.

Differences between the underweight group and the normal weight group in the level of eating disorders were significant (t=-6.94, p=.000).

There were high positive correlations between the BMI and an eating disorder (r=.383, p<.01), between an eating disorder and depression (r=.161, p<.01), between body image and self-esteem (r=.653, p<.01). In addition, there were high negative correlations between an eating disorder and body image (r=-.214, p<01), between an eating disorder and self-esteem (r=-.196, p<.01), between depression and body image (r=-.541, p<.01), and between depression and self-esteem (r=-.537, p<.01).

These results indicate that Korean college women need more education and counseling on dietary habits. Also, the systemic efforts reestablish the social standard of the beauty should be taken. Further empirical and experimental studies would be required for investigating for the factors influencing the eating attitude of the college women and discriminating the variables affecting the various specific dimensions of the eating attitude.

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ABSTRACT

This study was conducted to investigate the relationship between an eating disorder, body image, depression and self-esteem amongst a subject group of 282 college women between Jan.,1st and 30th,2002, to provide base data for eating disorder levels of college women and to provide base data for health control.

The evaluative instrument was a constructive questionnaire that consisted of 8 items of general characteristics and weight control questions, 24 questions relating to eating disorders, 17 questions pertaining to body image, 10 questions pertaining to depression and 10 questions pertaining to self- esteem. To identify the levels of an eating disorder, body image, depression and self-esteem perceived by subjects, the researcher used means and SDs. To test the significance of a subject's eating disorder, body image, depression and self-esteem according to the BMI, the researcher used the t-test.

To test the correlation between the BMI, an eating disorder, body image, depression and self-esteem, the researcher used Pearson correlation coefficient.

The results of this study are as follows.

The mean score for anorexia nervosa was 31.52 and the mean score for bulimia nervosa was 24.12.

Differences between the underweight group and the normal weight group in the level of eating disorders were significant ($t=-6.94$, $p=.000$).

There were high positive correlations between the BMI and an eating disorder ($r=.383$, $p<.01$), between an eating disorder and depression ($r=.161$, $p<.01$), between body image and self-esteem ($r=.653$, $p<.01$). In addition, there were high negative correlations between an eating disorder and body image ($r=-.214$, $p<01$), between an eating disorder and self-esteem ($r=-.196$, $p<.01$), between depression and body image ($r=-.541$, $p<.01$), and between depression and self-esteem ($r=-.537$, $p<.01$).

These results indicate that Korean college women need more education and counseling on dietary habits. Also, the systemic efforts reestablish the social standard of the beauty should be taken. Further empirical and experimental studies would be required for investigating for the factors influencing the eating attitude of the college women and discriminating the variables affecting the various specific dimensions of the eating attitude.