

An Effect of Attitude toward Body Image of Adolescent Dance Majors upon Their Weight Control Behavior and Eating Disorder

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Abstract

Background/Objectives: The present study was aimed to examine an effect of attitude towards body's image of dance major female students upon their weight control behavior and eating disorder. **Methods/Statistical Analysis:** This study carried out a survey with 415 students attending arts high schools located in 3 Daejeon, Chungnam, and Chungbuk regions. Questionnaire was employed as survey instrument and the collected data were analyzed for one-way analysis of variance, correlation analysis, multiple regression analysis, and path analysis. **Findings:** First, eating disorder was significantly different by school year and major. Second, weight control behavior revealed that interest in weight has impact on dietary therapy, drug therapy, and exercise therapy. Third, eating behavior found that interest in weight has impact on anxiety over weight, anorectic behavior, and consciousness in others while interest in physical attractiveness has impact on absorption in food, anorectic behavior, and consciousness in others. Fourth, eating disorder demonstrated that dietary therapy has impact on anxiety over weight and anxiety over food while drug therapy has impact on anxiety over weight, anxiety over food, anorectic behavior, and consciousness in others. Fifth, there was causal relationship between the attitude toward body image perceived by the dance major female students mediates and their weight control behavior and eating. **Application/Improvements:** The dancer's qualifications (physical form, dance tendency and parent's support) and teaching methodology that dance educators and teachers pursue for dance major students have a considerably important influence over the students.

Keywords: Attitude Toward Body Image, Eating Disorder, Weight Control Behavior

1. Introduction

Lookism means a social climate or tendency in which people are obsessed with appearance. Since it is believed that appearance can govern not only private life matters such as entertainment and marriage, but also social life matters such as employment and promotion, people invests a lot of time and effort in taking care of appearance¹. Likewise, as the modern society is turning to appearance-oriented views, appearance tends to be regarded as ability. Furthermore, distorted criteria to beauty, which have been formed mainly by TV, Internet, magazine, and movie, brainwashed people that thin and slim entertainers are standard physical shape, trapping the public into

false idea that thin body is standard of beauty and bubbling expectation and desire for thin body shape. People prefer thin body, comparing one's body with others', without establishing right knowledge and standard of sound body. As a result, they suffer from the compulsive idea that they always have to stay thin.

Particularly for a dancer, a body is an important means, because it is the subject of performing dance and the object shown to the audience, while expressing artistic motions on a stage². Moreover, the reason why dance-major female high school students want to have ideal physical conditions is that they think that ideal body is a critical factor to determine success in admission to university or rank in dance contest. Therefore, they are more obsessed

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with weight loss through excessive dietary intervention, which can lead to eating behavior disorder though they are already underweight or normal in weight³.

Eating disorder is psychological disorder related to eating, mainly classified as anorexic nervosa or bulimia nervosa. Both have in common that they are related to fear of weight gain and desire for weight loss. While anorexic nervosa (or loss of appetite) is expressed into extreme fasting, bulimia nervosa (or compulsive overeating) triggers repetitive bulimia behavior and, accordingly, inappropriate compensatory behavior (deliberate vomiting, taking diuretic, and cathartics purgative). It has been reported that eating disorder has negative effect to women in age between 18 and 25 in emotional, social, economical, and physical aspect⁴. As such undesirable problems of adolescent's eating disorder came to the surface, many academic fields such as medical science, health and welfare, home economics, social studies, and psychology have conducted a variety of studies. Also in the field of physical education or dance studies⁵, a considerable number of studies have been carried out on the current status, analysis, cause, prevention of eating disorder related to university students and occupational dancers, but few studies have paid proper attention to the relationship between the factors of inappropriate dietary attitude and eating disorder of dance-major female high school students, who are still in adolescence during which emotional values have rarely not been established. and their self-attitude toward a body. The most direct and influential factor among eating behaviors is related to satisfaction with a body.

As dance major students perceive thin body shape as ideal physical image, they feel discord between their perceived physical image and the ideal image, which leads to dissatisfaction with their bodies. It drives them into immoderate weight control, which results in a negative outcome of both physical and psychological health. Physical image is an image one has on his or her physical appearance and multi-dimensional concept including cognitive, mental, and behavioral orientation to a body⁶. In the field of dance,⁷⁻⁹ are reported that positive attitude to physical image or distorted physical image is a factor to improve or deteriorate appearance, performance anxiety, confidence in dance, and dance performance achievement and has a negative impact on drastic diet and weight control, too. Precedent studies demonstrate that eating disorder that results from excessive weight control behavior is one of pervasive and negative practice of dancers and it is more often observed in dancers than general people. Therefore,

it is likely that weight control behavior mediates between attitude toward body image and eating disorder.

There exists invisible pressure on dance majors to practice weight control and dietary restraint, taking advantage of their distorted attitude toward body image and they can resort to even a negative method. When they discontinue an abnormal method after relying on it, it creates new side effects due to weight gain and nutritional unbalance, which damage health as well as psychological and social disorder. Therefore, it is urgent that dance major students themselves make sound dancing environment, in which health is taken care of, through having right awareness of their bodies, receiving educational method in accord, and reviewing emotional matters. In this respect, it is worth having academic curiosity how much attitude toward body image has impact on weight control behavior and eating disorder. In addition, investigating in the relationship among variables is expected to contribute to building the knowledge base of dance as sociology, which is shallow now and to provide basic data for the leaders in educational domain to initiate desirable and sound physical culture for students.

The purpose of this study is valid under the assumption that dance major female students' attitude toward body image has impact on the degree of eating disorder and tried to demonstrate the causal relation between the variables. To fulfill the objective of the study, the following questions were set: first, is the degree of eating disorder different by personal characteristic of dance-major female students?; second, does physical image that dance-major female students have impact on their weight control behavior?; third, does dance-major female students' physical image have impact on the degree of their eating disorder?; fourth, does the weight control behavior of dance-major female students have impact on their eating disorder?; and fifth, is there causal relation among physical image, weight control behavior, and eating disorder of dance-major female students?

2. Research Methods

2.1 Research Subjects

This study selected high school students majoring in dance as population. According to purposeful sampling method, 430 samples were chosen from arts high schools located in 3 regions: Daejeon City, Chungcheong Province. Of the samples, 15 were excluded due to insincere response

or low reliability. Finally, 415 samples were employed for data analysis. Table 1 shows the general characteristics of the research subjects.

2.2 Survey Instrument

The questions of attitude toward body image were designed from the questionnaire used in the study of¹⁰ that modified Multidimensional Body-Self Relation Questionnaire (MBSRQ) of Cash⁶ for their study. It is composed of total 11 questions for interest in weight, interest in appearance, interest in physical attractiveness. Each question is designed to answer in 5-point scale [from 'Not At All (1)' to 'Very Much (5)']. The reliability of physical image is .802~.870 and cumulative variance is 72.665%, which indicates that each question is reliable.

For weight control behavior, this study used¹¹'s questionnaire, which was originally designed to examine the extent of practice to lose weight or maintain normal weight, and modified and complement it to the purpose of this study. It consists of total 10 questions for dietary restriction dietary restriction therapy, drug therapy, and exercise therapy. Each question is designed to answer in 5-point scale [from 'Never (1)' to 'Always (5)']. The reliability of weight control behavior is .617~.849 and cumulative variance is 65.424%, which indicates that each question is reliable.

EAT26¹² was used as measuring instrument for eating disorder. EAT26 is a test questionnaire that¹² used¹³'s The Eating Attitudes Test (EAT-26) and verified its reliability and validity. It consists of total 26 questions for anxiety over weight, absorption in food, anorectic behavior, and consciousness in others. Each question is designed to answer in 5-point scale [from 'Never (1)' to 'Always (5)']. The reliability of eating disorder is .705~.848 and cumulative variance is 70.031%, which indicates that each question is reliable.

Table 1. Heneral characteristic of study subjects

Individuality	Level	Frequency(N)	Ratio(%)
Grade	1st grade	115	27.7
	2nd grade	128	30.8
	3rd grade	172	41.1
Major	Korea Traditional Dance	120	28.9
	Ballet	178	42.9
	Modern Dance	117	28.2

2.3 Research Procedure and Data Processing

The research of this study contacted the schools in advance and visited them in person to distribute and collect questionnaires. The respondents were asked to fill in the questionnaires in self-administration manner. To encourage them to answer more sincerely, the researcher explained the purpose of the study and matters to be attended to first and asked them to response in comfortable mind.

The collected data was analyzed with SPSS Version 18.0 and the reliability and validity of the questionnaire were verified with exploratory factor analysis and Cronbach's a. To examine the degree of eating disorder by personal characteristic, frequency analysis and one-way analysis of variance were applied. And correlation analysis, multiple regression analysis, and path analysis were conducted to know the impact of variables on each other.

3. Results

3.1 The Degree of Eating Disorder by Personal Characteristics

The level of eating disorder of dance-major female students by personal characteristic turned out as follows. As seen in Figure 1-2, By the sub-variable of school year, anxiety over weight of the 3rd school year ($M=3.57$) and the 1st school year ($M=3.23$) was significantly higher than that of the 2nd school year ($M=3.03$). Absorption in food of the 3rd school year ($M=2.97$) and the 2nd school year ($M=2.92$) was significantly higher than that of the 1st school year ($M=2.59$). Anorectic behavior of the 3rd school year ($M=2.35$) and the 2nd school year ($M=2.06$) was significantly higher than

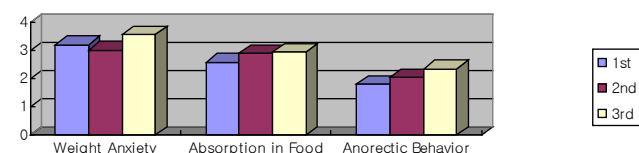


Figure 1. Degree of Eating Disorder by Grade.

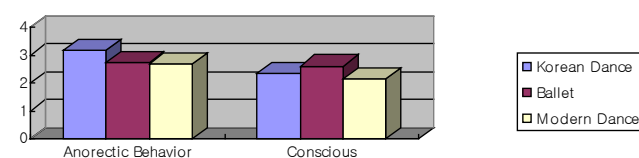


Figure 2. Degree of Eating Disorder by Type of Dance.

that of the 1st school year ($M=1.80$). However, there was no statistically significant difference in consciousness in others by school year. By major, there was no statistically significant difference in anxiety over weight and anorectic behavior. BY the sub-variable of major, however, absorption in food of Korean traditional dance major ($M = 3.16$) and ballet major ($M=2.75$) was significantly higher than that of modern dance major ($M=2.69$). In consciousness in others, ballet major ($M=2.61$) was significantly higher than Korean traditional dance major ($M=2.34$) and modern dance ($M=2.14$).

3.2 Impact of Female Students' Attitude Toward Body Image upon Their Weight Control Behavior

Before data analysis, interaction of all the variables was reviewed. And correlation analysis was carried out among physical image, weight control behavior, eating disorder to confirm multicollinearity (correlation between independent variables). Table 2 shows the results. As seen in Table 2, the correlation coefficients of the entire measurable variables turned out lower than .511, which verifies the independence of the variables and insignificant multicollinearity.

Multiple regression analysis was conducted to know the impact of attitude toward body image perceived by the dance major female students upon their weight control behavior and the results turned out like in Table 3. As shown in Table 3, among the sub-variables of attitude toward body image, it turned out that interest in weight ($\beta = .488$) and interest in appearance ($\beta = -.240$) had a significant impact on dietary therapy, which is one of the sub-variables of weight control behavior; interest in

weight ($\beta = -.504$) and interest in physical attractiveness ($\beta = .129$) had a significant impact on drug therapy and; interest in weight ($\beta = .334$), interest in physical attractiveness ($\beta = .200$), and interest in appearance ($\beta = -.182$) had a significant impact on exercise therapy.

3.3 Impact of Dance Major Female Students' Attitude Toward Body Image on Level of their Eating Disorder

The result of conducting multiple regression analysis to verify the impact of dance major female students' attitude toward body image on level of their eating disorder is shown in Table 4. As shown in Table 4, the interest in weight has impact on anxiety over weight, anorectic behavior, and consciousness in others while interest in physical attractiveness has impact on absorption in food, anorectic behavior, and consciousness in others. And interest in appearance has impact on absorption in food.

3.4 Impact of Weight Control Behavior of Dance Major Female Students on Level of Eating Disorder

The result of conducting multiple regression analysis to verify the impact of weight control of dance major female students on level of their eating disorder is shown in Table 5. As shown in Table 5, the dietary therapy has impact on anxiety over weight and anxiety over food while drug therapy has impact on anxiety over weight, anxiety over food, anorectic behavior, and consciousness in others. In addition, exercise therapy has impact on anxiety over weight and consciousness in others.

Table 2. Correlation analysis of body image, weight control behavior, and level of eating disorder

	1	2	3	4	5	6	7	8	9	10
1. Interest in Weight	1									
2. Physical Attraction	.080	1								
3. Interest in Appearance	.219**	.404**	1							
4. Dietary Therapy	-.443**	.034	-.096*	1						
5. Drug Therapy	.507**	.157**	.130**	.488**	1					
6. Exercise Therapy	.310**	.153**	-.028	.413**	.176**	1				
7. Weight Anxiety	.788**	.127**	.237**	.507**	.501**	.375**	1			
8. Absorption in Food	.418**	.165**	.225**	.115*	.385**	.075	.437**	1		
9. Anorectic Behavior	.497**	.220**	.131**	.350**	.367**	.148**	.502**	.492**	1	
10. Conscious. In Others	.209**	.369**	.244**	.195**	.283**	.190**	.336**	.431	.511	1

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Impact of Attitude toward Body Image upon Their Weight Control Behavior

Variables	Dietary Therapy		Drug Therapy		Exercise Therapy	
	β	t	β	t	β	t
Interest in Weight	.488	11.091***	.504	11.689***	.334***	7.108***
Physical Attraction	.091.	1.948	.129	2.811**	.200***	3.994***
Interest in Appearance	-.240***	-5.005***	-.033	-.692**	-.182***	3.559***

** $p < .01$, *** $p < .001$ **Table 4.** Impact of attitude toward body image upon level of eating disorder

Variables	Weight Anxiety		Absorption in Food		Anorectic Behavior		Conscious. In Others	
	β	t	β	t	β	t	β	t
Interest in Weight	.774	25.072***	.388	8.581***	.494	11.534***	.166	3.616***
Physical Attraction	.044	1.344	.092	1.910	.205	4.484***	.325	6.623***
Interest in Appearance	.050	1.498	.103	2.091*	-.060	-1.279	.077	1.536

* $P < .05$, *** $p < .001$ **Table 5.** Impact of Weight Control Behavior upon Level of Eating Disorder

Variables	Weight Anxiety		Absorption in Food		Anorectic Behavior		Conscious. In Others	
	β	t	β	t	β	t	β	t
Dietary Therapy	.254	5.266***	-.166	-2.074*	.075	1.528	.015	.258
Drug Therapy	.340	7.637***	.434	8.360***	.547	12.005***	.251	4.690***
Exercise Therapy	.210	4.927***	.047	.944	.020	.459	.139	2.713**

* $P < .05$, ** $p < .01$, *** $p < .001$ **Table 6.** Causality

Path	Path Coefficient	SD	CR	P	Acceptance	Direct Effect	Indirect Effect	Total Effect
Body→Weight	.469	0.52	9.012	.000	Accepted	.405	.000	.405
Body→Eating	.378	.041	9.215	.000	Accepted	.468	.144	.612
Weight→Eating	.575	.048	12.091	.000	Accepted	.357	.000	.357

3.5 Causal Relationship Among Body Image, Weight Control Behavior, and Eating Disorder of Dance Major Female Students

The result of conducting casual relationship among dance major female students' attitude toward body image, weight control behavior, and eating disorder are shown in Table 6 and Figure 3. As shown in Table 6 and Figure 3, there were causal relationship between the attitude toward body image perceived by the dance-major female students

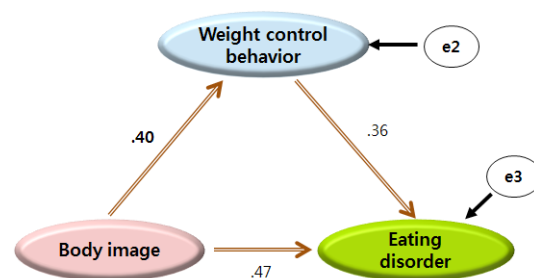


Figure 3. The causal relationship between body image of majoring in dance and weight control behavior and eating disorder.

mediates and their weight control behavior and eating disorder. It turned out that attitude toward body image has direct impact on the level of eating disorder and indirect impact on it through weight control behavior.

4. Conclusions

The study was aimed to examine an effect of attitude towards body's image of dance major female students upon their weight control behavior and eating disorder. To examine the effect of the attitude toward body image perceived by dance-major female students on their weight control behavior and eating disorder, this study carried out a survey with 415 students attending arts high schools. The conclusions are as follows:

First, there is difference in the level of eating disorder by school year and major. By school year, anxiety over weight, absorption in food, anorectic behavior, and consciousness in others, which are the sub-variables of eating disorder turned out higher in the 1st and the 2nd school year than in the 3rd school year. This result is identical to that of the precedent study by Song³ reporting that dance-major female students in their 3rd school year showed higher level of eating behavior. The possible reason for this result is that the 3rd year is the period during which dance-major female students most trouble themselves with college entrance, contest and so on, so they have to compensate for their shortcomings. By major, it turned out that Korean traditional dance majors had higher level of absorption in food, which is one of the sub-variables of eating disorder, than ballet majors and modern dance majors. Meantime, ballet majors had higher level of consciousness in others than other major groups. The possible explanation of this result is that while foreign dance (e.g. ballet) majors tend to wear tight fitting clothes because they are more conscious of others and thus bear controlling behavior on eating while Korean traditional dance majors feel less burden on controlling food intake because they wear Korean traditional clothes (Hanbok), which are loose. However, this assumption needs verifying through in-depth comparison by dance major.

Second, the analysis of the effect of attitude toward body image on weight control behavior revealed that interest in weight has impact on dietary therapy, drug therapy, and exercise therapy while interest in physical attractiveness has impact on drug therapy and exercise

therapy. In addition, interest in appearance has impact on dietary therapy and exercise therapy. It implies that dancers can have positive or negative weight control behavior depending on their attitude toward body image. This result is partially identical to that of¹⁴ demonstrating that dancers implemented dietary therapy, medication, and reinforcing exercise as weight control behavior for desirable health. It is thought that the dancers had felt nutritive conditions threatened by excessive weight control and thus turned to eating regular meal and having health supplement food for insufficient nutrition. Also, it is assumed that the dancers came to have weight control behavior to strengthen their muscles to extend range of joint motion, rather than only to build slim body shape. On the other hand, dance-major female students tend to think they are 'fat' and need to be on a diet due to distorted attitude toward body image, and to that of¹⁵ reporting that so they are led to excessive weight control behavior to keep thin body shape in direct terms of dance motion(thin), thinking that thin body shape is ideal for dancer shape. Distorted physical image attitude can do damage to dance majors through resorting to extreme method of weight loss. Therefore, it is necessary to establish education for proper attitude toward body image and body shaping.

Third, the analysis of the impact of attitude toward body image upon eating behavior found that interest in weight, which is the sub-variable of attitude toward body image, has impact on, anxiety over weight, absorption in food, anorectic behavior, and consciousness in others while interest in physical attractiveness has impact on anorectic behavior and consciousness in others. And interest in appearance has impact on absorption in food. Dance majors who consider physical image important has relatively high level of eating disorder. This result is supported by the finding of¹⁶ reporting that fasting and 'binge' among irregular dietary habits are attributed to multi-dimensional causes such as perfectionism, sensitivity to losing face, social comparison, physical supervision, and dissatisfaction with body. It is thought in this study that social compulsive idea that dancers should always be slim and thin and dancers' pursuit of goal drive them to eating disorder. And eating habit of carbonated beverages and fast food, ramen appeared to reduce a quality of life and life expectancy. Furthermore, breakfast consumers ate fewer sweet diet and fast food¹⁷.

Fourth, the analysis of the impact of weight control behavior on eating disorder demonstrated that dietary therapy has impact on anxiety over weight and anxiety over food while drug therapy has impact on anxiety over weight, anxiety over food, anorectic behavior, and consciousness in others. In addition, exercise therapy has impact on anxiety over weight and consciousness in others. This finding is partially in line with² maintaining that stress from contest and college entrance and psychological burden on weight the dance-major female students are likely to cause dancers to rely on inappropriate weight control behavior, which leads to eating disorder. 63.7% of the surveyed dance major female students had stress of having to be slim and they resort to fad dietary method (21.6%), one food diet (17.7%), fasting (14.7%) and medication (11.7%) to lose weight¹⁵. Also this result is supported by the study of⁸ reporting that those who have higher level of public self-consciousness, which occurs when one is aware of others, have more interest in others' view and perspective. It is thought in this study that dance-major female high school students who are under stress of preparing for college entrance, contest, high expectation from surroundings, and so on tend to have eating disorder due to excessive obsession with food, rejection of it, or consciousness in others.

Fifth, there was causal relationship between the attitude toward body image perceived by the dance-major female students mediates and their weight control behavior and eating disorder. It turned out that attitude toward body image has direct impact on the level of eating disorder and indirect impact on it through weight control behavior. As demonstrated in the study of⁸ that maintained negative practice, which causes eating disorder, is pervasive among dance-major female students through excessive weight control behavior, it is very important for dance-major female students to have a positive attitude toward body image because it affects their physical, mental and emotional health.

The dancer's qualifications(physical form, dance tendency and parent's support) and teaching methodology that dancer educators and teachers pursue for dance major students have a considerably important influence over the students. Therefore, right education on physical image should come first to the durational forefront, which requires careful instruction of the teachers.

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