

Study on the Relationship between Female College Students' Body Image and Their Physical Exercise Participation

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Abstract: Body image is an individual's subjective cognition and evaluation of one's body. This study takes female college students' body image self-recognition and physical exercise participation behaviour and their relationship as the research object. By analysing the survey results of female college students' body image self-recognition and participation in physical exercise, this paper analyses the characteristics and correlation between female college students' body image self-perception and physical exercise participation behaviour, so as to provide effective measures for improving female college students' physical exercise participation behaviour. The results are as follows: (1) Female college students' evaluation of body image is above the average level and relatively positive; female students of different majors have different body image self-cognition. (2) Different physical exercise time, frequency and intensity have significant differences in appearance evaluation, appearance concern and body part satisfaction. Compared with large and small amount of physical exercise, medium amount of physical exercise participation has a more positive impact on female college students' body image. (3) There was a significant correlation between the body image of female college students and the level of physical exercise participation. There was a positive correlation with appearance evaluation and body part satisfaction, and a negative correlation with appearance attitude.

1. Research Purpose and Significance

This study focuses on the basic status quo of female college students' physical exercise participation, the relationship between body image and physical exercise, the relationship between image and physical exercise, and discusses the status quo of female college students' body image and why being slim is so important. In recent years, body research, especially in the field of female body, has become a hot topic, focusing on biology, sociology, psychology, medicine and other disciplines. It turns out that women are more likely to suffer from anorexia, bulimia and bulimia due to their poor relationship with their bodies. Psychology holds that a person's body image is an important part of the body's self. And now these female college students as an integral part of our entire social group, their physical and mental health will also affect the improvement of national quality. Therefore, the correct guidance of positive body image is of great importance to female college students who are in the critical period of self-concept formation. Therefore, it is necessary to study the relationship

between female college students' body image and physical exercise. Through the study of the relationship between the two, we can explore a scientific, simple, economical and effective mode of physical exercise, and promote the formation of a correct aesthetic outlook and lifelong physical exercise habits of college students.

2. Research Methods

2.1. Questionnaire Method

2.1.1. Self-compiled Questionnaire on Basic Information of Female College Students

Through literature retrieval, the main variables that may affect the body image of college students were determined, including grade, major, family source and basic situation of physical exercise participation. In addition, in order to investigate college students' understanding of their body image (i.e., body shape cognition) and daily weight loss, the basic information form and set up a way to lose weight, want to reduce weight, height and weight of the actual and ideal height, weight, measure the actual body obesity with shape index BMI. The evaluation criteria for BMI were the internationally used Asian standards, that is, the actual BMI ≥ 23 for a heavier body, $18.5 \leq \text{BMI} < 23$ for a normal range, and $\text{BMI} < 18.5$ for a thinner body.

2.1.2. Multidimensional Self-image Relation Questionnaire (MBSRQ)

At present, the original version of this questionnaire is a widely used research tool abroad to measure individual body image. MBSRQ mainly measures an individual's attitude towards self-body image. MBSRQ contains 69 items and 10 subscales, and the 5-point scale is adopted. According to the purpose and content of this study, we adopt the subscale of three dimensions to form a questionnaire to measure the body image, and the three dimensions are as follows: the orientation of appearance; appearance evaluation and body part satisfaction. A total of 28 questions, the choice is still the 5-point integral method, from 1 point to 5 points are respectively from very disagree to very agree with the change gradually, and 6, 7, 15, 16 and 18 questions are scored in reverse, the higher the score, the better the body image.

2.1.3. Physical Exercise Rating Scale

This scale assesses the intensity, time and frequency of exercise, and uses it as a measure. Each option is rated on a scale of 5, from 1 to 5. The formula for the amount of physical exercise is intensity \times (time -1) \times frequency, 0 for the worst and 100 for the best. Its standard is, exercise time is equal to and more than 43 points means a lot of exercise and 20 to 42 points means moderate exercise, small exercise amount is equal to 19 points. The scale was revised by Liang De-Qing et al., and the retest reliability of the scale was 0.82.

2.2. Mathematical Statistical Method

The collected questionnaires were sorted out, and the data were integrated and processed with statistical knowledge and SPSS21.0 software, so as to analyse the correlation between female college students' body image and their participation in physical exercise.

3. Research Results and Analysis

3.1. Analysis of Body Image Measurement Results

3.1.1. Overall Situation of Female College Students' Body Image Measurement

In order to better understand the distribution of scores of female college students in various dimensions of body image, the subscales of body image were divided into high group, middle group and low group according to the score. The multidimensional self-relation questionnaire is a five-point self-report questionnaire scale, with items ranging from "totally disagree" to "totally agree" scoring 1-5 points, "totally disagree" scoring 1 point, "basically disagree" scoring 2 points, "no opinion" scoring 3 points, "basically agree" scoring 4 points, and "totally agree" scoring 5 points. According to the score standard, the score distribution of three dimensions of female college students' body image is obtained.

(1) Appearance evaluation

In terms of appearance evaluation, the low group accounted for 39.4%, the high group for 23.6%, the middle group for 37%, the mean was 3.36, and the standard deviation was 0.38.

(2) Appearance and attitude

In terms of the evaluation of appearance, the low group accounted for 42.2%, the high group accounted for 21.2%, and the middle group accounted for 36.5%, with an average value of 3.13 and a standard deviation of 0.46.

(3) Body part satisfaction

In terms of body part satisfaction, the low group accounted for 38.9%, the high group for 13.6%, and the middle group for 47.4%, with an average of 3.32 and a standard deviation of 0.65.

Further analysis of specific body parts found that the most dissatisfied part of female college students is the lower body, which accounts for 30.9%, followed by 30.1% of weight, followed by 25.6% of waist and abdomen and height. The body parts were ranked from least satisfied to most satisfy: lower body, weight, height, muscle tension, upper body, hair, and face. The average of lower body, weight and height was lower than "3". The most dissatisfied part of the lower body is the body's lower legs, thighs and buttocks, which are the easiest parts for women to accumulate fat. To a certain extent, it indicates that female college students are worried and dissatisfied about weight gain and fat accumulation. The most satisfied parts were the face and hair, while the satisfaction increased from the buttocks up.

3.1.2. Comparison of Female College Students' Body Image Characteristics among Different Majors

The body image self-cognition of female students in different majors is different. In terms of appearance evaluation, female students majoring in sports have higher evaluation on their appearance, followed by female students majoring in arts and sciences, and female students majoring in arts have the lowest evaluation on their appearance. This may be due to the specialty of art, so that they have higher requirements for their appearance. Overall, the appearance evaluation presented a normal distribution, with a smaller proportion of low and high grouping and a larger proportion of middle grouping. Girls in the sports group had more positive evaluations. In terms of appearance concern, female art majors pay more attention to their appearance and pay more attention to their own appearance. They may spend more energy on dressing and appearance care. High score 46.1%, low score 13.9%. In terms of body part satisfaction, female college students majoring in arts and sciences have more positive evaluation of their body parts, with high score

accounting for 21.1% and 20.7%, while female students majoring in sports and arts have higher requirements for body parts, especially female students majoring in arts only accounting for 15.7%.

Female college students were divided into four independent samples according to their major. One-way ANOVA analysis was carried out to observe the significant difference in three dimensions of female universities with different majors. The difference of self-cognition of body image of female college students in different majors was analysed by variance analysis. The results showed that there were significant differences in the cognition of body image among female college students majoring in arts, science, art and sports. It was shown in the dimension of appearance concern ($F = 3.3, P < 0.05$).

On the basis of one-way ANOVA, the dimension of apparent concern with significant difference was analysed by rear difference analysis, and the major of difference was further analysed. Art majors and the other three majors have significant differences in appearance attention, the average score of art major girls is the highest, while the other three majors do not pay different attention to their appearance, indicating that the art major girls to the physical appearance of the highest attention.

3.2. Analysis of Female College Students' Physical Exercise Participation

In this study, the physical activity level scale (PARS-3)) was used to investigate the basic situation of female college students' physical exercise level, and the quantitative evaluation test of female college students' physical exercise participation was conducted from three aspects, namely, the intensity, time and frequency of physical exercise.

3.2.1. Survey on Female College Students' Physical Exercise Participation Level

From high to low, female college students exercise in moderate amount (33.7%), large amount (26.2%) and small amount (40.0%). Most female students exercise in small amount, accounting for the largest number and proportion. Next, 156 female college students with moderate exercise amount, accounting for 33.7% of the total number, and 121 female college students with large exercise amount. It accounted for 26.2% of the total population.

According to the analysis, due to the particularity of physical education major, female college students majoring in physical education have the largest proportion of large amount of physical exercise in the total number of female college students. Female college students with moderate amount of physical exercise account for 38.9%, while female college students with small amount of physical exercise do not. In the proportion of large amount of exercise level, the proportion of arts, science and art is relatively average; the number of people with small amount of physical exercise participation is also more, accounting for more than half of the proportion. The grade distribution of physical exercise of female college students majoring in art is basically the same as that of arts and sciences. The proportion of the distribution from large amount of exercise to small amount of exercise increases gradually. Female college students majoring in art with small amount of exercise account for 59.1% of the total number. Female college students of arts and sciences small exercise volume admit defeat proportion slightly decreased, arts 50.8%, science 50.4%, but also accounted for more than half of the total.

3.2.2. Survey Every Time of Female College Students' Physical Exercise Participation

The majority of female college students took more than 20 minutes of exercise each time, of which 32.1% were 21 minutes 30 minutes, 31 minutes 59 minutes were 28.4%, and more than 60 minutes were 24.4%. Sports psychology has the related theory to confirm, more than 20 minutes' sports will

have the better exercise and the psychological aspect effect. Therefore, we think that female college students should keep exercise for at least 20 minutes, and the time of each exercise can be increased as appropriate, so that the effect of exercise is more obvious.

3.2.3. Investigation on the Intensity of Female College Students' Physical Exercise Participation

The effect of taking part in exercise is directly related to the intensity of exercise. The analysis shows that the intensity of every exercise of most female college students is below the medium intensity, among which, the number of middle intensity is the most, accounting for 29.6% of the total. Low intensity accounted for 24.4% of the total, followed by light exercise 15.4%. Some female college students majoring in physical education are included in this survey. They have at least twice a week specialized courses, while aerobics is the major course for female college students majoring in physical education, basketball is the majority. Therefore, in the high strength is not lasting, high strength persistence in the proportion is very large. The high strength is not lasting for 22% of the total, and the high strength is long lasting for 8.7% of the total.

3.3. Research on the Relationship between Female College Students' Body Image and Physical Exercise Participation

3.3.1. Analysis of the Difference between Different Physical Exercise Activity Levels and Female College Students' Body Image

The physical exercise activity level was analysed from three important components of physical exercise, namely, the difference of physical exercise frequency, exercise time and exercise intensity, and the difference of female college students' body image. It found that:

(1) The body image difference analysis of female college students with different physical exercise frequency shows that the frequency of female college students participating in physical exercise is evaluated in appearance ($F=2.737$, $P<0.05$), appearance attitude ($F=4.518$, $P<0.01$), body part satisfaction ($F=2.858$, $P<0.05$). From the perspective of M value of three dimensions of body image, it indicates that appearance evaluation increases with the increase of physical exercise frequency. Physical attitudes decrease; the body part satisfaction rate of exercising 1-3 times a week is higher than that of exercising less than 3 times a month and more than 3 times a week.

(2) The body image difference analysis of female college students in different physical exercise time shows that the time of female college students participating in physical exercise is evaluated in appearance ($F=3.204$, $P<0.05$), appearance attitude ($F=4.418$, $P<0.01$), body part satisfaction ($F=3.284$, $P<0.05$). From the perspective of M value of three dimensions of body image, it indicates that appearance evaluation increases with the increase of physical exercise time. Physical attitudes decrease; Body part satisfaction female college students who exercised for 31-59 minutes each time were higher than female college students who exercised for less than 30 minutes each time and more than 60 minutes each time.

(3) The body image difference analysis of female college students in different physical exercise time shows that the time when female college students participate in physical exercise is evaluated in appearance ($F=1.422$, $P>0.05$), appearance attitude ($F=1.157$, $P>0.05$), body part satisfaction ($F=0.053$, $P>0.05$). However, from the perspective of the M value of body image part satisfaction dimension, the M value of high intensity is the lowest and the M value of medium intensity is the highest.

Analysis of the difference between the time, frequency and intensity of comprehensive physical exercise and the body image of female college students shows that they often take part in physical

exercise and maintain moderate intensity, three or more times a week, and each time lasts more than 30 minutes. It can improve the individual's self-understanding and evaluation of the body, including their body shape, health level, exercise ability and so on. These improvements further enhance individual self-confidence and self-esteem. Because of the physical exercise and many factors, such as the type of exercise, the intensity of exercise, the frequency of exercise, the time of exercise, etc., will have a great impact on the research results of the influence of physical self-concept. Therefore, overall, physical exercise has a certain role in promoting the body image.

3.3.2. Correlation Analysis of Female College Students' Body Image and Physical Exercise Participation

Different body image dimensions have different influence on the prediction of physical exercise participation. Three dimensions of body image scores and three indicators of female college students' participation in physical exercise were analysed. The results show that there is a significant or very significant correlation between the three dimensions of female college students' body image and the corresponding indexes of their participation in physical exercise. Appearance concern was positively correlated with body part satisfaction and physical exercise participation, while appearance attitude was negatively correlated with physical exercise participation. This study shows that female college students' body image, as an important part of their body self, has an influence on physical exercise participation.

4. Conclusions

(1) Female college students' evaluation of body image is above average and positive; Female students of different majors have different body image self-cognition.

(2) Different physical exercise time, frequency and intensity have significant differences in appearance evaluation, appearance concern and body part satisfaction. Regular physical exercise, maintaining a moderate intensity, three times a week or more, each lasting more than 30 minutes, can improve the individual's self-understanding and evaluation of the body. Compared with large and small amount of physical exercise, medium amount of physical exercise participation has a more positive impact on female college students' body image.

(3) There was a significant correlation between the body image of female college students and the level of physical exercise participation. There was a positive correlation with appearance evaluation and body part satisfaction, and a negative correlation with appearance attitude.

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