

# A Study of the Relationship between Physical Activity Attitudes and Life Satisfaction among Retired Female Athletes: The Mediating Role of Body Satisfaction

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## ABSTRACT

With sports development, the life adaptation of retired athletes has gradually received attention. Especially retired female athletes face multiple challenges such as role change and lifestyle change after finishing their careers. This study aimed to explore the relationship between retired female athletes' sports attitudes and life satisfaction and to analyse the mediating role of body satisfaction. A questionnaire was used to quantitatively assess the sports attitudes, body satisfaction and life satisfaction of 20 retired female athletes. The study's results showed that sports attitudes indirectly positively influenced the life satisfaction of retired female athletes by enhancing body satisfaction. This finding emphasises the important role of body satisfaction in the mental health and quality of life of retired athletes. It provides a theoretical basis and practical guidance for the psychological support and life adaptation of retired female athletes.

**Keywords:** retired female athletes; sport attitudes; body satisfaction; life satisfaction; mediating effect

## INTRODUCTORY

With the development of sports, the adaptation of retired athletes' lives after retirement has become an important research topic. According to the statistics of the State General Administration of Sports in 2021, there are about 50,000 professional athletes on the register in China, and nearly 3,000 to 4,000 athletes face retirement every year <sup>[1]</sup>. With the occurrence of retirement, athletes' attitudes towards physical exercise, life satisfaction and other issues come one after another, which is not only a concern for athletes themselves, but also a thorny issue in the development of sports in China. Retired female athletes need to face many challenges such as role change, career repositioning and lifestyle change after the end of their careers. For example, on 21 March 2006, Changchun's New Culture Newspaper published a report <sup>[2]</sup> on the former national champion now rubbing baths to make a living. The news spread immediately became a national hot topic former women's weightlifting Asian champion Zou Chunlan's contrast between the past and the present situation caused people to reflect on the way out of retired athletes' sports attitudes as an important psychological factor in their post-retirement life, which may affect their life adaptation and psychological state. In addition, body satisfaction, as an evaluation of one's physical form and function, may also play a key role in retired female athletes' life satisfaction. However, there is limited research on the relationship between sports attitudes, body satisfaction and life satisfaction among retired female athletes. Therefore, the present study aims to explore the relationship between sports attitudes and life satisfaction in retired female athletes and to analyse the mediating

role of body satisfaction, to provide a theoretical basis for psychological support and life adaptation in retired female athletes.

In this study, we used a questionnaire to quantitatively assess retired female athletes' attitudes toward sport, body satisfaction, and life satisfaction. The subjects of the study were female athletes who retired within a certain range of time, and the sample size was 20. The research instruments included the Sport Attitude Scale, the Body Satisfaction Scale and the Satisfaction with Life Scale, which were used to measure retired female athletes' positive or negative evaluations of sport, their satisfaction with their body form and function, and their overall evaluation of their quality of life, respectively. Data were collected using questionnaires to ensure a representative sample. For data analysis, structural equation modelling and mediation effect analysis were used to explore the relationship between sports attitudes and life satisfaction through correlation and regression analyses and to verify the mediating role of body satisfaction. This research design not only reveals the direct relationship between the variables but also analyses the potential mediating mechanisms in depth, providing a scientific basis for understanding the psychological adaptation process of retired female athletes.

The innovation of this study is to focus on the special group of retired female athletes, which fills the gap in current research on the psychological adaptation mechanism of retired female athletes. Previous studies have mostly focused on active athletes or the general population, and research on the relationship between sports attitude, body satisfaction and life satisfaction of retired female athletes is rare. Meanwhile, body satisfaction was introduced as a mediating variable to explore its mediating role between sports attitude and life satisfaction. The exploration of this mediating mechanism contributes to a more comprehensive understanding of the psychological adaptation process of retired female athletes.

This study not only enriches the theoretical research in the field of sports psychology and the psychological adaptation of retired athletes but also provides practical guidance for the psychological support and life adaptation of retired female athletes. The results of the study can provide a theoretical basis for the development of relevant support policies and help retired female athletes better adapt to life after retirement. The main purpose of this study is to explore the relationship between retired female athletes' sports attitudes and life satisfaction and to analyse the mediating role of body satisfaction in it. Through this study, the psychological adaptation mechanism of retired female athletes can be understood in depth, which can provide a theoretical basis for the formulation of relevant support policies and help them better adapt to life after retirement and improve their quality of life and mental health. In addition, it can enrich the theoretical research in the field of sports psychology and the psychological adaptation of retired athletes, and provide a reference for subsequent research.

## **LITERATURE REVIEW**

### **Definition of Retired Female Athletes**

Retired female athletes are female athletes who have retired as active athletes and ended their careers. They usually choose to retire due to declining physical condition, injury, ageing or personal planning. After retirement, they may take up sports-related jobs such as coaching, sports event planning, etc., or they may choose to enter other industries.

### **Studies related to attitudes towards physical activity**

According to the scholar G Olbert: attitudes are directly connected with self-experience, and in conditions of psychological and neurological readiness, there is individual and different feedback in response to different instructive, motivationally exerted influences. Sports attitudes have a psychological tendency to agree and

disagree, negative and positive in their external manifestations<sup>[3]</sup>. According to Ma Qiwei: "Attitude contains the psychological tendencies of the human personality, while it has a relatively solid, more consistent characteristics<sup>[4]</sup>. Duan Hengchan explains that attitude is a psychological attitude, which has stable views on different cognitions, emotions and behaviours, including the object and the subject<sup>[5]</sup>. E.A. Jaarsma, J.H.B. Geertzen's personal views believe that the individual's attitude towards sport is mainly related to behavioural attitudes, goal attitudes, behavioural perceptions, behavioural habits, behavioural intentions, emotional experiences, sense of behavioural control, and subjective standards<sup>[6]</sup>. Fu Dong writes that sports values can positively or negatively affect sports attitudes, that self-volition and affirmation of sports functions are specific manifestations of sports attitudes, and that achieving sports goals through self-effort can drive attitudes<sup>[7]</sup>. Yair Galily's viewpoint suggests that sports attitudes are specific to feedback and evaluation but require one's participation in sports, either during or after an affective and cognitive experience<sup>[8]</sup>.

To sum up, attitude is the psychological and neurological preparatory attitude based on a person's judgement of perceptions and things, which has a subtle effect, or even a direct determining effect, on the actions that a person subsequently performs. Physical exercise attitude exists in the process of human participation in sports, and through participation in sports and because of the movement of their own value orientation and psychological tendency to have an impact on the understanding. The mentality of participating in sports will be transformed with repeated physical exercise, and each person's value judgement of physical exercise will be transformed in the process of participation. Whereas on the measurement of

### Studies on life satisfaction

To explore the research on life satisfaction, although the relevant research at home and abroad tends to be mature, scholars still have different opinions. Domestic research on life satisfaction started late and the group is mostly concentrated on college students<sup>[9]</sup>, most scholars refer to life satisfaction, and although there is no unified definition of its concept, most of them believe that the level of life satisfaction and quality of life have a very close relationship. For college students (different majors), there is no obvious difference between subjective and objective life satisfaction, even if the same group in charge of life satisfaction has a difference; In addition, Liu Loulin also pointed out that, compared to the arts and sciences students, in subjective life satisfaction scores, the former is significantly lower than the latter"<sup>[10]</sup>. The Zhuangfan empirical research put forward the following viewpoints, the college students group, their life satisfaction and coping styles are related, and the relationship between the two is a positive dependence"<sup>[11]</sup>. When researching the assessment of life satisfaction of college students in China, Professor Dong Qinwen will focus on the aspects of time management preference and adaptability. Using questionnaires to investigate the current situation of college students, he found that the main factors affecting the overall life satisfaction of college students are gender and the acquisition of scholarships, while adaptability plays a partly intermediary role in his study"<sup>[12]</sup>.

In the research results of Shin and Johnson, the concept of life satisfaction is defined as a person's overall cognitive evaluation of his/her life situation by the self-imposed life goals in each period of time or a certain period of time<sup>[13]</sup>; in Campbell's research, it is considered that self-esteem is the most important, the most powerful and the most influential. Self-esteem was considered to be the most important, the most powerful and the most influential<sup>[14]</sup>. This view is also supported to some extent by post-Diener studies"<sup>[15]</sup>. Studies such as Lamothe and Hunsberger, who believe that social support plays an irreplaceable role, confirm this in their in-depth studies, and the existence of a relationship between the two is also confirmed by them, i.e. a positive correlation: individuals who are well supported by the community also have a higher level of social support than other people. Individuals with good social support also have higher life satisfaction than others<sup>[16][17]</sup>.

As China's economy continues to develop, more and more pressures from work and life are having a very great impact on people both physically and psychologically. Especially in the non-domicile population, residents face all aspects of the greater tangible and intangible pressure. Given this situation, scholars have also carried out relevant research, Liu Kun on the protection of basic rights and interests of the urban non-domicile population, pointed out that part of the urban non-domicile population in the city by the restrictions and impact of the system of obtaining domicile and cannot obtain the domicile, and at the same time in our country in the education, health care and other related security system also exists based on the status quo of domicile and cause the non-domicile population cannot enjoy the rights and interests that should be enjoyed <sup>[18]</sup>Huang Juyun, in his study of health stress, compares the differences between household and non-household populations and points out that, compared to the two, the non-household population has a more pronounced sense of unfairness in terms of mental health problems and life stress <sup>[19]</sup>.

As we can see from the above, domestic studies on the life satisfaction of different groups are more extensive, and the factors affecting their life satisfaction are only objective factors (peer relationships, life events, etc.) and subjective factors. Foreign studies on life satisfaction are more mature than those in China, with a wider range of groups, and it is believed that life satisfaction involves many aspects and changes with age and increased goal identity.

### **Studies related to body satisfaction**

Body Satisfaction (BS) is an important component of the affective dimension of body imagery or body self-concept. As a part of the earliest development of self-concept, body satisfaction mainly includes the evaluation of an individual's ability in terms of appearance, strength and health <sup>[20]</sup>. Many studies have used the concept of dissatisfaction <sup>[21]</sup>. It can also be called body imagery satisfaction/dissatisfaction. Body dissatisfaction refers to an individual's negative assessment of his or her own body, i.e., the individual perceives a discrepancy in the assessment of the actual body versus the ideal body <sup>[22]</sup> or has negative attitudes about his or her weight and body shape. Body dissatisfaction, which includes dysfunction, negative beliefs, and perceptions of weight and body size, is also a defining characteristic and predictor of relapse in anorexia and bulimia and predicts a generalized predicament in women who are not in an eating disorder <sup>[23]</sup>.

Studies related to body satisfaction were summarized and categorized into three broad themes based on content: individual variability in body satisfaction levels, major factors affecting body satisfaction, and the relationship between body satisfaction and physical activity.

First, in terms of individual differences in body satisfaction, many studies at home and abroad have shown that there are more significant differences in body satisfaction levels in terms of gender, age and specific groups. As far as gender differences are concerned, most scholars have confirmed that men are more satisfied with their bodies than women, and the dimensions of body satisfaction also differ significantly in different life stages of specific groups <sup>[24]</sup>.

Secondly, the factors affecting body satisfaction mainly include physiological, psychological and environmental influences. In terms of physiological factors, the main indicator examined is BMI, which has been found in previous studies to be the main factor influencing adolescents' body satisfaction, with higher BMI increasing individuals' dissatisfaction with their bodies, and it can be said that BMI is a strong predictor of body satisfaction, as confirmed by Thompson et al. in the same study <sup>[25]</sup>. As far as psychological factors are concerned the more frequent is the psychological influence of perfectionism, which plays an important role in many psychological disturbances in the mind of the individual <sup>[26]</sup>. Also, self-esteem is one of the main influences on body satisfaction. Researchers have used self-esteem as a predictor of body satisfaction in numerous studies and have found that body satisfaction is significantly influenced by the level of self-esteem.

In a study between self-esteem and body dissatisfaction in women, Ricciardelli et al. found a moderating effect of self-esteem between socio-cultural influences and body dissatisfaction, with women with low self-esteem being more likely to be body dissatisfied <sup>[27]</sup>.

Thirdly, in terms of the relationship between body satisfaction and physical activity, with the development of the fields of psychology and sociology, a large number of studies at home and abroad have begun to link body satisfaction with physical activity behaviour and explore the possible influencing relationship between the psychological concept of body satisfaction and physical activity behaviour. Both Ye Weibing and Pan Mingrong confirmed that regular physical activity can effectively improve students' positive perceptions of body imagery and its dimensions, significantly improve individuals' evaluations of their body image, and have a significant positive effect on appearance evaluation, physical fitness evaluation, and health status <sup>[28][29]</sup>. In addition, improvements in body satisfaction were associated with the intensity, duration, frequency, and amount of physical activity. It was found that scores on body satisfaction and body imagery evaluation were typically higher for students who exercised at a high intensity, and perceptions of body self-appreciation, body self-assessment, and body satisfaction were generally higher for females who engaged in moderate-intensity exercise <sup>[30]</sup>.

In conclusion, scholars at home and abroad have different focuses on the study of body imagery, and the related research on body satisfaction has been favoured by many scholars at home and abroad, with the continuous change of today's society and culture, the attention of various research fields on the level of body satisfaction of different groups has also been increasing, but it is worthwhile to further explore the interrelationship between body satisfaction and physical exercise.

## RESEARCH METHODOLOGY

### Literature research method

The questionnaire was designed based on an in-depth understanding of the current status and progress of the research in this field by checking the relevant professional literature in the CNKI database the yearbook and other materials.

### Questionnaire method

The questionnaire of this study has four parts. The first part included basic information such as age, gender, height and weight, marital status, education level, occupation, monthly income level, and nature of work. The second part is the Exercise Attitude Scale, which measures the subjects' level of exercise attitude with three items, and the third part is the Multidimensional Body Imagery Questionnaire, which selects four dimensions to measure the subjects' level of body satisfaction. The fourth part was the Life Satisfaction Scale, which was used to investigate the level of life satisfaction. The questionnaire consists of 5 questions, and the results directly reflect the satisfaction level of retired female athletes at this stage of their lives. The questionnaires were distributed to 20 retired female athletes in Shandong Province and were filled in under their supervision. A total of 20 questionnaires were collected and the recovery rate was 100%. Among them, 20 questionnaires were valid, with a validity rate of 100 per cent, and the recovery rate and validity rate of the questionnaires met the statistical requirements.

## MATHEMATICAL AND STATISTICAL METHODS

The collected questionnaires were data collated, invalid questionnaires were eliminated and valid questionnaire



data were entered into Excel 2010 tables for storage. For mathematical statistical analysis, the Excel data were imported into IBM SPSSStatistics27 for statistical processing.

## FINDINGS AND DISCUSSION

Descriptive analysis of retired female athletes' attitudes towards sport, life satisfaction and body satisfaction

Table 1 Basic characteristics of physical activity attitudes

variant	frequency		per cent
EA1	Strongly disagree	1	5%
	disagree	1	5%
	neutrality	1	5%
	agree with	13	65%
	couldn't agree more	4	20%
EA2	Strongly disagree	2	10%
	disagree	6	30%
	neutrality	3	15%
	agree with	8	40%
	couldn't agree more	1	5%
EA3	Strongly disagree	2	10%
	disagree	4	20%
	neutrality	10	50%
	agree with	4	20%

Table 1 shows the distribution of attitudes towards physical activity in the sample. From the data, the majority of the respondents had a positive attitude towards EA1, with 65 per cent of them "agreeing", 20 per cent "strongly agreeing" and only 10 per cent "disagreeing" or "strongly disagreeing". Only 10 per cent of respondents "disagreed" or "strongly disagreed". For EA2, 40 per cent of respondents "agreed", 30 per cent "disagreed", 15 per cent were "neutral" and only 5 per cent "strongly agreed". "Strongly Agree". For EA3, 50 per cent of respondents were neutral, 20 per cent agreed, 20 per cent disagreed and 10 per cent strongly disagreed. "Strongly disagree". Overall, the sample's attitudes towards physical activity were generally positive, with a high level of agreement with EA1 in particular, indicating that the majority of respondents had a positive attitude towards physical activity.

### Descriptive analysis of body satisfaction

Table 2 Basic Characteristics of Physical Satisfaction

variant	frequency		per cent
BS1	Strongly disagree	4	20%
	disagree	4	20%
	neutrality	4	20%

	agree with	8	40%
BS2	Strongly disagree	1	5%
	disagree	9	45%
	neutrality	2	10%
	agree with	6	30%
	couldn't agree more	2	10%
BS3	Strongly disagree	3	15%
	disagree	7	35%
	neutrality	2	10%
	agree with	8	40%
BS4	Strongly disagree	3	15%
	disagree	3	15%
	neutrality	7	35%
	agree with	5	25%
	couldn't agree more	2	10%
BS5	Strongly disagree	2	10%
	disagree	4	20%
	neutrality	9	15%
	agree with	4	20%
	couldn't agree more	1	5%

Table 2 shows the distribution of the sample on body satisfaction. The data showed that the distribution of body satisfaction was more dispersed. For BS1, 40 per cent of respondents "agreed", 20 per cent "disagreed", 20 per cent "neutral" and 20 per cent "strongly disagreed". "Strongly disagree." For BS2, 45 per cent of respondents "disagreed", 30 per cent "agreed", 10 per cent "neutral" and 10 per cent "strongly agreed". "Strongly agree". For BS3, 40 per cent of respondents "agreed", 35 per cent "disagreed", 15 per cent "strongly disagreed" and 10 per cent "neutral". "Neutral". For BS4, 35 per cent of the respondents were "neutral," 25 per cent "agreed," 15 per cent "disagreed" and 15 per cent "strongly disagreed." "Strongly disagree" and 10 per cent "strongly agree." For BS5, 45 per cent of the respondents were "neutral," 20 per cent "agreed," 20 per cent "disagreed" and 10 per cent "strongly disagreed." "Strongly disagree," and 5 per cent "strongly agree." Overall, the distribution of body satisfaction was balanced, with some respondents being more satisfied and others showing lower levels of satisfaction, suggesting that there was some variability in the sample in terms of body satisfaction.

#### Descriptive analysis of life satisfaction

Table 3 Basic characteristics of life satisfaction			
variant	frequency		per cent
LS1	Strongly disagree	1	5%

	disagree	3	15%
	neutrality	9	45%
	agree with	5	25%
	couldn't agree more	2	10%
LS2	Strongly disagree	2	10%
	disagree	7	35%
	neutrality	5	25%
	agree with	5	25%
	couldn't agree more	1	5%
LS3	Strongly disagree	3	15%
	disagree	2	10%
	neutrality	7	35%
	agree with	6	30%
	couldn't agree more	2	10%
LS4	Strongly disagree	2	10%
	disagree	4	20%
	neutrality	8	40%
	agree with	5	25%
	couldn't agree more	1	5%
LS5	Strongly disagree	5	25%
	disagree	2	10%
	neutrality	3	15%
	agree with	10	50%

Table 3 demonstrates the distribution of the sample in terms of life satisfaction. The data shows that the distribution of life satisfaction is more dispersed. For LS1, 45 per cent of respondents were 'neutral', 25 per cent 'agreed', 15 per cent 'disagreed', 10 per cent 'strongly agreed' and 5 per cent 'strongly disagreed'. "Strongly agree" and 5 per cent "strongly disagree". For LS2, 35 per cent of respondents "disagreed", 25 per cent "agreed", 25 per cent "neutral" and 10 per cent "strongly disagreed". "Strongly disagree" and 5 per cent "strongly agree". For LS3, 35 per cent of respondents were "neutral", 30 per cent "agreed", 15 per cent "strongly disagreed", 10 per cent "disagreed" and 5 per cent "strongly agreed". "disagree" and 10 per cent "strongly agree". For LS4, 40 per cent of respondents were 'neutral', 25 per cent 'agreed', 20 per cent 'disagreed' and 10 per cent 'strongly disagreed'. "Strongly disagree" and 5 per cent "strongly agree". For LS5, 50 per cent of respondents "agreed", 25 per cent "strongly disagreed", 15 per cent were "neutral" and 10 per cent "disagreed". "Disagree". Overall, the distribution of life satisfaction shows some diversity, with some respondents being more satisfied and others less satisfied, indicating a significant split in the sample in terms of life satisfaction.



In summary, the descriptive statistical analyses of Tables 1, 2 and 3 show that the distribution of the samples in terms of physical activity attitudes, body satisfaction and life satisfaction shows some diversity and differences. Physical activity attitudes were more positive in general, especially the agreement with EA1; the distribution of body satisfaction and life satisfaction was more dispersed, with some respondents showing higher levels of satisfaction, while others showed lower levels of satisfaction. These findings provide a basis for further exploration of the relationships between the variables.

Correlation analysis of retired female athletes' attitude towards sport, life satisfaction and physical satisfaction

Table 4 Results of Pearson correlation analysis between dimensions

dimension (math.)	EA1	EA 2	EA3	BS1	BS2	BS3	BS4	BS5	LS1	LS2	LS3	LS4	LS 5
EA1	1												
EA2	.511 *	1											
EA3	0.28	0.25 2	1										
BS1	0.25 5	.489 *	.452 *	1									
BS2	0.17 8	0.37 8	0.38 5	.657 **	1								
BS3	0.11 7	0.19 3	.455 *	.718 **	.674 **	1							
BS4	0.40 3	.445 *	.727 **	.616 **	.655 **	.596 **	1						
BS5	.469 *	0.39 7	.496 *	0.37 1	.515 *	.554 *	.552 *	1					
LS1	0.07 6	0.22 4	.457 *	.560 *	.800 **	.675 **	.561 *	0.38	1				
LS2	0.07 9	0.16 3	0.38 3	.446 *	.552 *	0.40 9	.471 *	0.35 5	.512 *	1			
LS3	0.32 4	0.29 8	.506 *	.705 **	.661 **	.654 **	.789 **	.520 *	.675 **	.567 **	1		
LS4	0.20 2	0.38 6	.605 **	.746 **	.755 **	.506 *	.661 **	0.43 7	.758 **	.535 *	.750 **	1	
LS5	-0.0 08	0.20 9	0.43 7	.768 **	.646 **	.716 **	.536 *	0.35 1	.542 *	.501 *	.713 **	.616 **	1

Table 4 presents the results of the Pearson correlation analysis between the dimensions. There were significant correlations between physical activity attitudes (EA1, EA2, and EA3) and physical and life satisfaction. For example, EA1 was significantly and positively correlated with EA2 ( $r = 0.511^*$ ), EA1 was significantly and positively correlated with BS5 ( $r = 0.469^*$ ), and EA2 was significantly and positively correlated with BS1 and

BS4 ( $r = 0.489^*$ ,  $r = 0.445^*$ ). EA3 was significantly positively correlated with BS3, BS4, LS1, LS3, LS4 ( $r = 0.455^*$ ,  $r = 0.727^{**}$ ,  $r = 0.457^*$ ,  $r = 0.506^*$ ,  $r = 0.605^{**}$ ). The correlation between physical satisfaction (BS1-BS5) and life satisfaction (LS1-LS5) was strong, for example, BS1 was significantly and positively correlated with BS2, BS3, BS4, LS1, LS3, LS4, LS5 ( $r = 0.657^{**}$ ,  $r = 0.718^{**}$ ,  $r = 0.616^{**}$ ,  $r = 0.560^*$ ,  $r = 0.705^{**}$ ,  $r = 0.746^{**}$ ,  $r = 0.768^{**}$ ), BS2 was significantly and positively correlated with BS3, BS4, LS1, LS3, LS4, LS5 ( $r = 0.674^{**}$ ,  $r = 0.655^{**}$ ,  $r = 0.800^{**}$ ,  $r = 0.661^{**}$ ,  $r = 0.755^{**}$ ,  $r = 0.646^{**}$ ), and BS3 was correlated with BS4, LS1, LS3, LS4, LS5 were significantly positively correlated ( $r = 0.596^{**}$ ,  $r = 0.675^{**}$ ,  $r = 0.654^{**}$ ,  $r = 0.506^*$ ,  $r = 0.716^{**}$ ), BS4 was significantly positively correlated ( $r = 0.561^*$ ,  $r = 0.789^{**}$ ,  $r = 0.661^{**}$ ) with LS1, LS3, LS4, and BS5 was significantly positively correlated ( $r = 0.520^*$ ,  $r = 0.437$ ). There were also significant positive correlations between the dimensions of life satisfaction, for example, LS1 was significantly positively correlated with LS2, LS3, LS4, and LS5 ( $r = 0.512^*$ ,  $r = 0.675^{**}$ ,  $r = 0.758^{**}$ , and  $r = 0.542^*$ ), LS2 was significantly positively correlated with LS3 and LS4 ( $r = 0.567^{**}$ , and  $r = 0.535^*$ ), and LS3 was significantly positively correlated with LS4 and LS5 were significantly positively correlated ( $r = 0.750^{**}$ ,  $r = 0.713^{**}$ ), and LS4 was significantly positively correlated with LS5 ( $r = 0.616^{**}$ ).

Overall, there was a significant positive correlation between physical activity attitudes, body satisfaction, and life satisfaction. In particular, the correlation between body and life satisfaction was strong, suggesting that body satisfaction had a greater impact on life satisfaction.

#### Analysis of the mediating role of body satisfaction in retired female athletes

This study aimed to investigate the mediating role of body satisfaction in the relationship between sports attitudes and life satisfaction among retired female athletes. For this purpose, we adopted the mediating effect analysis method in structural equation modelling and analyzed the data using the PROCESS macro in SPSS software. The details are as follows:

Table 1 Effect of the independent variable (X) on the mediator variable (M)

variant	regression coefficient	Standard error (SE)	t-value	p-value	Confidence interval (LLCI, ULCI)
constant term (math.)	1.97	3.82	0.52	0.61	(-6.07, 10.01)
EA	1.28	0.38	3.34	0.003	(0.47, 2.09)

Table 1 demonstrates the effect of the independent variable (exercise attitude, EA) on the mediator variable (body satisfaction, BS). The results showed that there was a significant positive effect of exercise attitude on body satisfaction (regression coefficient = 1.28, standard error = 0.38, t-value = 3.34,  $p = 0.003$ ), which suggests that the more positive the exercise attitude, the higher the body satisfaction.

Table 2 Effect of Mediating Variable (M) on Dependent Variable (Y)

variant	regression coefficient	Standard error (SE)	t-value	p-value	Confidence interval (LLCI, ULCI)
constant term (math.)	4.21	2.43	1.73	0.10	(-0.94, 9.35)

EA	-0.3	0.31	-0.96	0.35	(-0.95, 0.36)
BS	0.95	0.15	6.34	0	(0.63, 1.26)

Table 2 demonstrates the effect of the mediating variable (body satisfaction, BS) on the dependent variable (life satisfaction, LS). The results showed that body satisfaction had a significant positive effect on life satisfaction (regression coefficient=0.95, standard error=0.15, t-value=6.34,  $p<0.001$ ), while the direct effect of exercise attitude on life satisfaction was not significant (regression coefficient=-0.30, standard error=0.31, t-value=-0.96,  $p=0.35$ ).

Table 3: Direct and indirect effects

Type of effect	efficiency value	Standard error (SE)	Confidence interval (LLCI, ULCI)
Direct effect (X on Y)	-0.3	0.31	(-0.95, 0.36)
Indirect effects (via M)	1.21	0.38	(0.45, 1.97)

Table 3 further analyses the direct and indirect effects. The direct effect (the effect of exercise attitudes on life satisfaction) was not significant (effect value = -0.30, standard error = 0.31, 95% confidence interval [-0.95, 0.36]), whereas the indirect effect (mediated effect through body satisfaction) was significant (effect value = 1.21, standard error = 0.38, 95% confidence interval [0.45, 1.97]), which indicates that body satisfaction plays a fully mediating role between exercise attitudes and life satisfaction.

## CONCLUSIONS OF THE STUDY

This study explored the relationship between sports attitudes, body satisfaction and life satisfaction of retired female athletes through empirical analyses, with a focus on the mediating role of body satisfaction. The findings suggest that sports attitudes indirectly and positively affect retired female athletes' life satisfaction by enhancing body satisfaction. This finding not only enriches the theory in the field of sports psychology but also provides practical guidance for psychological support and life adaptation for retired athletes.

### Research limitations

Although this study provides new insights into the mechanisms of psychological adjustment in retired female athletes, there are some limitations:

This study included only 20 retired female athletes, and the small sample size may affect the representativeness and generalizability of the results; a cross-sectional design was used, which did not allow for the identification of causal relationships between the variables, and a longitudinal design may be used in future studies for further validation. Although a standardised scale was used in this study, the applicability and accuracy of the scale still need to be validated in a larger sample.

### Future Outlook

Future research can be expanded in the following ways: increasing the sample size can improve the representativeness and reliability of the findings. Causal relationships between variables can be better understood through a longitudinal research design. In addition to body satisfaction, other possible mediating variables such as self-efficacy and social support can be explored. Considering that cultural differences may

have an impact on the results of the study, cross-cultural comparisons can be conducted in future studies to verify the generalisability of the findings.

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