Influence of swimming athletes' sports psychological fatigue on sports performance

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Abstract

This study aims to examine the influence of swimming athletes' sports psychological fatigue on sports performance in China. The subjects selected for this study are active swimmers participating in competitions. Eighty questionnaires were issued during this study's investigation, with a 100 % recovery rate. The PES-T was used to assess emotion before to competition. The data was collected using literature research, questionnaire, interview, data statistics, logical analysis, personality questionnaire (EPQ), and representative questions from the 90-item symptom self-rating scale. (SCL90). All parameters of exercise-induced mental exhaustion, training and competition satisfaction in swimmers obtained a significant connection (p<0.05) and had a significantly negative correlation regression model overall test F (p<0.05), and their impact is negative. The two predictive factors effectively accounted for 41.5% of the variance in training and Competition Satisfaction, and both impacts were negative. It is crucial to increase the competitive performance of swimmers to enhance the performance of athletes more effectively and stimulate the creation of sports memory. It is necessary to enhance the theoretical system of swimming sports psychological training further to improve the theoretical system of swimming sports psychological training, assist swimmers in effectively controlling and relieving sports psychological fatigue, and enhance training effect and competition results. Consider psychological choices carefully. Trait anxiety is a stable personality trait and a favorable predictor of psychological exhaustion in sports. One of the psychological selection indications for swimmers can be trait anxiety.

Keywords: Mental fatigue; Training and Competition Satisfaction; Sports performance; Swimmer

Introduction

Several prior research have identified sports performance across multiple games as an essential construct (Dong et al., 2021; Hernández et al., 2022; Rajendran & Vasudevan, 2020; Ribeiro et al., 2019). This concept is significant to the body of knowledge since it depicts the global performance of athletes in competition. Numerous earlier studies recognized sports performance in various ways (Lin, Lee, & Chang, 2020; Logue et al., 2018). However, the present study adds novel elements to athletic performance. This study expanded the significance of the literature on athletic performance with the aid of psychological exhaustion in sports. In the literature, the variable sports psychological weariness is discussed, but not concerning swimming athletes. In China, the performance of swimmers is of the utmost importance, as the country participates in international swimming competitions. However, very few studies have examined the relationship between swimming athletes' athletic performance and psychological tiredness. Therefore, past research has not identified the performance of swimmers affected by psychological exhaustion, which the current study investigates. Thus, the results of this study are beneficial for the management of sports clubs and team coaches.

High-level competitive sports are, to some part, a contest of psychological potential. The higher the level of competition of an athlete, the bigger the proportion of psychological level. In large-scale international tournaments, the psychological variables of elite athletes have a substantial effect on their sports skills, technical strategies, and athletic performance. On the assumption of an equal level of competition, psychological variables and other elements decide the contest's outcome (Kumar et al., 2020). This paper examines and cites numerous sports psychology documents. Based on interviews with swimmers and coaches of varying sports levels, events, educational levels, and other factors, it is concluded that, among numerous sports psychology factors, the emotional problem of fatigue has the greatest impact on the performance of swimmers. There is currently no international consensus on psychological weariness in sports. However, sports psychological tiredness does exist in training and competition and must be addressed immediately (Oktavius et al., 2021).

During our psychological research for the national swimming team, we came across this phenomenon. Monitoring a world-class swimmer's physiological indicators for two consecutive weeks was normal. Still, phenomena such as a drop-in training quality, fatigue, and depression were observed in the early stages of the championship trial. Therefore, the coach devised a

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training plan for her to limit the amount of training to maximize the program's effectiveness. However, the athletes still felt extremely tired, were unable to swim, and panted at the edge. The coach was nervous but had nothing to do, so he had to notify the scientific research team for assistance (Pokrovskaia et al., 2021). A preliminary conversation with the athletes revealed that they, too, are worried and desire to train well. However, even when they arrive at the pool, they feel weak and have no idea what is happening. They are in great trouble. Because of this, they cannot eat, sleep, or control their temper, and the quality of their training continues to decline. The participant was then asked to complete the athlete exhaustion questionnaire. The results indicated that the athlete's three indexes were above average. Existing evidence suggests that the athlete is suffering from sports psychological weariness (Ahmad & Jasimuddin, 2021).

In swimming, the national team now offers numerous opportunities for external training, which can help athletes alleviate mental fatigue to a certain extent. However, regardless of how the training environment changes, athletes repeat the same monotonous movements every day in the pool. In addition, swimming's performance has increased in recent years, and the sport is receiving more and more attention from the outside world, which increases the psychological pressure on swimmers. All of these will cause mental weariness in athletes. We discovered this behaviour during our psychological research service for the national swimming team. Monitoring a world-class swimmer's physiological indicators for two consecutive weeks was normal. Still, in the early stages of the championship trial, the quality of training declined, training was despised, and the swimmer experienced emotional depression. The coaches devised a strategy to limit the quantity of training to maximize the program's effect. However, the athlete still felt extremely tired, was unable to swim, and was out of breath when she approached the water's edge. The nervous coach was compelled to report the problem to the research team for assistance. We began with an interview with the athletes. We discovered that the athletes were similarly anxious and eager to train well, yet they felt helpless when they arrived at the pool. The results indicate that three of the athlete's indicators are elevated. Hence there are grounds to suspect that the athlete is suffering from sports mental weariness.

Literature Review

Anxiety is a general psychological characteristic in competitive sports, and anxiety has been the focus of sports psychology research since its inception. The research findings regarding trait and state anxiety have not reached a consensus. The results of H Havlucu's research on the association between trait anxiety and state anxiety of athletes in various sports and levels of competition indicate that trait anxiety and state anxiety are significantly correlated (Havlucu, Coşkun, & Özcan, 2021). Among these are Cao, P. The research on Chinese teenage women's volleyball players also indicated that the association between trait anxiety and state anxiety increases as emotional pressure increases (Cao et al., 2021). In his research on impaired athletes, Xu et al. (2021) found that the trait and state anxiety of disabled athletes in typical conditions are distinct. There are numerous explanations for the aforementioned divergent research outcomes. Still, it can be extrapolated from the existing data that the relationship between trait anxiety and state anxiety in sports items and sports grades is identical (Yang, Gu, & Chen, 2021). Liu et al. (2020) investigated the association between trait anxiety and nerve type and found no correlation between nerve type and pre-competition trait anxiety (Liu, Y., 2020). As for the association between trait anxiety and self-confidence, Xu et al. (2021) research reveals a strong negative correlation between trait anxiety and self-confidence.

To more accurately assess the symptoms of psychological weariness in sports, it is necessary to monitor psychological and physiological signs. Currently, observation techniques, self-report method, computerized implicit attitude experiment, response time, flash fusion frequency, and physiological index evaluation method are utilized to assess psychological weariness in sports. The self-report approach is the most frequently utilized among them (Millour et al., 2020). Lee, Gan, and Christopoulos (2021) compiled and reviewed the pertinent literature on sports psychological tiredness and discovered that some studies utilized the self-report method to examine athletes' sports psychological exhaustion. In contrast, self-report method research on coaches' sports psychological weariness was as high as 80%. Maslach sports psychological exhaustion scale, Edes athletes sports psychological fatigue scale, Athletes fatigue questionnaire, and Athletes training status monitoring scale are sports psychological fatigue scales. Figure 1 depicts the categories of psychological fatigue:

Training interval	Maximum heart rate %	Subjective feeling
Level 1 endurance training	<75	Easily
Level 2 endurance training	76-85	Comfortable
Level 3 endurance training	86-92	Discomfort
Level 4 endurance training	>92	Under pressure

Figure.1 Classification of psychological fatigue

Fatigue and its management are prominent topics in sports training. The source of physiological exhaustion in athletes is physiological load, while psychological fatigue is caused by psychological stress. Mental tiredness in sports has distinct characteristics and assessment methods. Rifai, H. E. defines sports psychological fatigue as the phenomenon that occurs when athletes face endogenous and exogenous pressure. Psychological and physiological resources are continuously depleted and not replenished promptly, the psychological function cannot maintain the initial level of psychological activity, and the psychological function declines (El Rifai, Al Qadi, & Elnagar, 2022). The manifestation of such phenomena. It will negatively affect athletes' training, competition, and even long-term career growth. Under a competitive sports environment, the deterioration of athletes' state and the fall of sports performance, when sports performance serves as the primary evaluative metric, are directly associated with the onset of sports psychological fatigue. The pre-competition mood is the second key psychological component determining athletes' performance (Chen & Zhao, 2021). The diversity of the influence of emotion on Athletes' competition level reflects the complexity of the influence of emotion on Athletes' competition level. For instance, a competition with the same difficulty level and moderate optimism or anxiety are conducive to normal or superior performance; excessive optimism or anxiety will limit normal performance (Luo et al., 2021). The research on pre-competition emotion and athletes' competition performance focuses on the correlation between different emotions and athletes' arousal, the difficulty of competition tasks, personal characteristics, and other variables, in addition to the impact on competition performance (Marsh, 2021). Athletes' training and competition satisfaction is another psychological component closely related to sports psychological weariness and pre-competition emotion. Rajendran and Vasudevan (2020) considers training and competition satisfaction a unique form of life fulfilment. He argues that the purpose of measuring training and competition satisfaction is to examine athletes' cognitive evaluations of training and competition experience. Alouges and Di Fratta (2020), defined training competition satisfaction as the emotional response created by athletes following a thorough study of training and elements directly associated with training. Although there is no direct evidence that high-level training and competition satisfaction will result in high-level competition play, training and competition satisfaction are frequently discussed as a related variable to other important psychological factors affecting athletes' competition play in

sports psychology research. In addition, as a measurement index, training and competition satisfaction can provide psychological feedback on athletes' phased training and competition from the application level, facilitate the diagnosis and evaluation of the psychological state of athletes, and provide data support for the adjustment of the training plan and the management of the sports team. Smith et al. (2020) argues that exogenous training and management elements are the most significant causes of sports psychological exhaustion in athletes. Although extrinsic influences are significant, we cannot disregard the impact of endogenous factors on psychological weariness in sports. Kumar et al. (2020) believe that sports psychological fatigue is a psychological skill that occurs when athletes continuously consume psychological and physiological resources without timely supplementation when coping with internal and external pressure and are unable to maintain the initial level of psychological activity. Trait anxiety is a significant endogenous element that affects the production of psychological weariness in sports. However, the influence of trait anxiety on psychological exhaustion in sports will be influenced by several other variables. Investigating how these factors influence the association between trait anxiety and psychological tiredness in sports is crucial. This research aims to investigate the connection between sports psychological skills, trait anxiety, and sports psychological tiredness. According to the extant research literature, there are numerous causes of psychological weariness in sports. Long-term accumulation of its own internal and external elements results in psychological tiredness in sports. Due to the unique qualities of each sporting event, the mechanism of psychological weariness in sports will vary. Future research should investigate the mechanism of psychological exhaustion in sports in conjunction with the features of each event. The initial studies demonstrate that the relationship between exercise-induced psychological weariness and exercise motivation is exceedingly complex and that the diversity of study objects may result in divergent research outcomes. To elucidate the connection between the two, additional research is required. Under the assumption of an equal level of competition, the effect of psychological elements and other factors will determine the outcome of the competition. This paper cites numerous works on sports psychology. Through interviews with swimmers and coaches of various sports levels, events, education levels, and other factors, it is concluded that, among numerous sports psychology factors, anxiety, an emotional problem, has the most common effect on the performance of swimmers. Anxiety frequently determines the outcome of a match. By

investigating athletes' personal and societal characteristics, the researchers studied the statistical data to determine the specific elements of the influence of various factors on swimmers' anxiety. The fundamental process examined in this research is depicted in Figure 2:
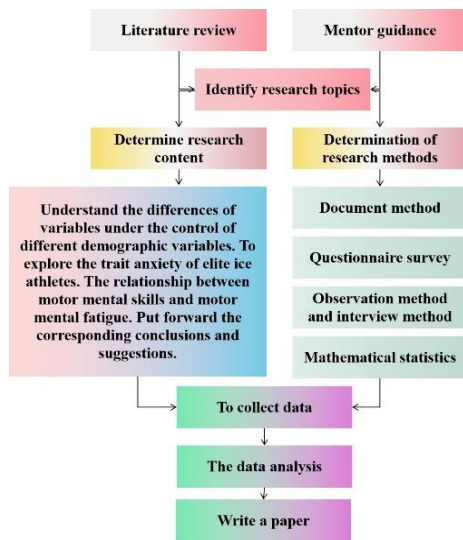

Figure. 2 Research flow chart

Methodology

Research object

The subjects chosen for this study are active swimmers participating in competitions. Eighty questionnaires were issued during this study's investigation, with a 100 % recovery rate.

Measurement of exercise-induced psychological fatigue

The athletes' Psychological Fatigue Questionnaire (ABQ) Luo et al. (2021); Okholm Kryger et al. (2020) was created by Leclerc, J. in 2001 and is the most often used instrument in the field of sports. The measure consists of 15 items separated into three dimensions: diminished sense of accomplishment, emotional/physical tiredness, and unfavorable appraisal of exercise. Using a 5-point Likert scale, from 1 to 5 corresponds to never too often. The score indicates the degree of psychological tiredness associated with this component. In this study, the internal consistency reliability coefficients for each subscale are as follows: a diminished sense of achievement, 0.617, emotional/physical tiredness, 0.851, and negative evaluation of exercise, 0.712, and the reliability is perfect. To comprehend athletes' regular training, emotional shifts, and the phenomenon of sports anxiety in the training process. Acquire many swimming-related resources and provide more exhaustive reference materials for composing papers. The following describes the psychological tiredness questionnaire (ABQ):

Swimming Athletes' Mental State Research Questionnaire
Dear Athletes,
Hello! Thank you for your participation in this survey. This questionnaire aims to investigate your mental state in training and competition. The information is only for research purposes. All information you fill in will be kept strictly confidential. Please feel free to fill in.
The integrity of the information you provide will determine the accuracy of our investigation results. Please read the questions and choices carefully and choose your answers objectively. If you have any questions, please contact me. Thank you again for your cooperation!
1. Basic Information (Please tick "√" or directly fill in the blank after matching your options)
Name: ()
Gender: Male (); Female ()
Age: ()
Training years :()
Sports level: International Master level (); Sportsman class (); Level 1 (); (2); Level 3 ()
Main event: freestyle (); Backstroke (); Butterfly (); Breaststroke (); Medley ()
Here are some questions about training and competition. Please fill in the appropriate box according to your true feelings (out of 10).
1. I have a strong motivation to produce good athletic performance. ()
2. When I did the action, I was almost completely unaware of the audience. ()
3. I often dream about racing. ()
4. A minor injury or unsuccessful practice can shake my confidence. ()
5. I get along well with my teammates. ()
6. I often panic at the last moment before I start to do something. ()
7. I try not to think about my moves for 24 hours before a meeting. ()
8. I wish I were more motivated. ()
9. I sometimes lack the motivation to train. ()
10. I get upset when my teammates don't do well. ()

Measurement of pre-competition emotion

Using the pre-competition emotion scale-t (PES-T), established by tension in 2001 and incorporates Chinese collectivism culture traits. In consideration of the age and cultural characteristics, the pes-t-16x4 short form was used. The scale consists of 16 items separated into four dimensions: individual failure fear, self-confidence, social expectation anxiety, and bodily anxiety. Adopting Likert's 4-point score, from 1 to 4 corresponds to never to always. The higher the score, the greater the emotional experience of the athlete in this area. In this study, the internal

consistency reliability coefficients for each subscale are as follows: individual failure anxiety = 0.847, self-confidence = 0.751, social expectation anxiety = 0.636, and physical anxiety = 0.821. The reliability is perfect.

Measurement of training and Competition Satisfaction

The 2002 Training Competition Satisfaction Scale was utilized. The scale consists of six items and is unidimensional. It is scored on the seven-point Likert scale. From 1 to 7, the range is from total disagreement to total agreement. The scale's overall score is the sum of the six-item scores. The higher the score, the greater the training and competition satisfaction of the athletes. The scale's coefficient of internal consistency dependability is 0.775, and its reliability is superb. According to the collected data, combined with the existing features, the prior study results and research methodologies, conduct a thorough analysis of the problems and causes and the development and preparation of the paper.

Research methods

Under the requirements of the research content and measurement instruments, to minimize the error variation as much as possible: (1) the scales used by Shi Hong in this study are distributed and collected the day before the competition stage - to avoid the influence of the competition process and

results on the psychological state of the athletes; (2) The questionnaires were checked, and valid questionnaires were obtained. Spreadsheets in Excel were utilized to process the data. The respondents' various personal variables, societal factors, and sports anxiety were compared and studied. The scales are completed anonymously to ensure the validity of the athletes' responses. SPSS 21.0 was used to manage the data. Statistical techniques.

Results and Discussion

The relationship between sports psychological fatigue and pre-competition emotion of swimmers

Using multiple linear regression analysis, this research explores the predictive ability of the independent variable on the dependent variable, using swimmers' sports psychological weariness as the independent variable and their pre-competition emotion as the dependent variable. As the premise and necessary condition of regression analysis, conduct pears on correlation analysis on each dimension of the independent variable and dependent variable before multiple linear regression analysis to determine the strength and direction of the relationship between each dimension of the independent variable and dependent variable, as shown in Table 1:

Table 1

Correlation matrix between sports psychological fatigue and pre-competition emotional questions

	Reduced sense of achievement	Emotional/physical exhaustion	Sports negative evaluation	Individual failure anxiety	self-confidence	Social expectation anxiety	Somatic anxiety
Reduced sense of achievement	1						
Emotional / physical exhaustion	0.56** (R^2=0.3)	1					
Sports negative evaluation	0.40** (R^2=0.16)	0.59** (R^2=0.34)	1				
Individual failure anxiety	0.47** (R^2=0.22)	0.45** (R^2=0.21)	0.40** (R^2=0.16)	1			
self-confidence	-0.55** (R^2=0.31)	-0.51** (R^2=0.26)	-0.34 (R^2=0.11)	-0.42 (R^2=0.17)	1		
Social expectation anxiety	0.38** (R^2=0.14)	0.47** (R^2=0.22)	0.52** (R^2=0.27)	0.68** (R^2=0.46)	-0.41** (R^2=0.17)	1	
Somatic anxiety	0.59** (R^2=0.35)	0.63** (R^2=0.40)	0.32** (R^2=0.1)	0.71 (R^2=0.51)	-0.51** (R^2=0.26)	0.60** (R^2=0.36)	1

**P < 0.01, the decisive coefficient is in brackets

There is a significant association between the dimensions of swimming competitors' psychological exhaustion and the dimensions of pre-competition mood, as shown in Table 1. All aspects of exercise-induced psychological weariness are strongly positively connected, except for the self-confidence component of pre-competition emotion, which is significantly adversely correlated. This study's initial assumptions are supported by the correlation degree of each dimension of the two variables, which ranges from low to moderate. Multiple linear regression analysis was performed to investigate the predictive effect of swimming players' sports psychological tiredness on their pre-competition emotions.

Regression analysis

Standard multiple regression analysis primarily uses the forced entry variable method to determine whether the explanatory power of independent variables to dependent variables is statistically significant. This study employs stepwise multiple regression analysis to evaluate the predictive capacity of sports psychological tiredness on pre-competition emotion in swimmers. The independent variable is pre-competition emotion, and the dependent variable is sports psychological fatigue. Since the pre-competition emotion-dependent variable has four dimensions, there will be four regression equations, as shown in Tables 2 and 4.

Table 2 shows that the most predictive factor of individual failure anxiety dimension is the decrease in the sense of achievement, whose explanatory variation is 22.4%; The second is the negative evaluation of exercise, and the explained variation is 5.4%. The overall test f value of the regression model was 14.983 (P < 0.05). The two predictive variables could effectively explain 27.8% of the variation of individual failure anxiety, and both effects were positive. The standardized regression equation is individual failure anxiety of swimmers = (0.370 × reduced sense of achievement) + (0.253 × exercises negative evaluation).

Table 2

Stepwise multiple regression of individual failure anxiety on various dimensions of sports psychological fatigue

Predictive variable	β	t	R^2	ΔR^2	F	ΔF
Reduced sense of achievement	0.37	3.52**	0.22	0.22	22.81***	22.81***
Sports negative evaluation	0.25	2.40**	0.28	0.05	14.98***	5.78*

***p<0.001，**p<0.01，*p<0.05

Table 3 shows that the highest predictive power of the self-confidence dimension is the decrease in the sense of achievement, and its explanatory variation is 30.5%; The second was emotional/physical exhaustion, and the explained variation was 5.8%. The F value of the integrity test of the model is 22.240 (P < 0.05). The two predictive variables can effectively explain 36.3% of the variation in self-confidence, and both effects are negative. The standardized regression equation is Swimmers' self-confidence (~ 0.386 × reduced sense of achievement) + (-0.293 × emotional / physical exhaustion).

Table 3

Stepwise multiple regression of self-confidence on various dimensions of sports psychological fatigue

Predictive variable	β	t	R^2	ΔR^2	F	ΔF
Reduced sense of achievement	-0.38	-0.35**	0.30	0.30	34.62***	34.62***
Emotional / physical exhaustion	-0.29	-0.27**	0.36	0.06	22.24***	7.15**

***p<0.001，**p<0.01

It can be seen from Table 4 that the highest predictive power of the dimension of social expectation anxiety is the negative evaluation of exercise, and its explanatory variation is 27.3%; The second was emotional/physical exhaustion, and the explained variation was 3.9%. The F value of the integrity test of the model is 17.672 (P < 0.05). The two predictive variables can effectively explain 31.2% of the variation of social expectation anxiety, and both effects are positive. The standardized regression equation is Swimmers' social expectation anxiety I (0.379 × negative evaluation of exercise)+ (0.244 × emotional/physical exhaustion).

Table 4

Stepwise multiple regression of social expectation anxiety on various dimensions of sports psychological fatigue

Predictive variable	β	t	R^2	ΔR^2	F	ΔF
Sports negative evaluation	0.38	3.27**	0.27	0.27	29.62***	29.62***
Emotional / physical exhaustion	0.24	2.11*	0.31	0.04	17.67***	4.44*

***p<0.001, **p<0.01, *p<0.05

Table 5 shows that the highest predictive power of physical anxiety is emotional/physical exhaustion, and its explanatory variation is 40.3%; The second is the decrease in the sense of achievement, and the explained variation is 8%. The F value of the integrity test of the model is 36.322 (P < 0.05). The two predictive variables can effectively explain 48.2% of the variation of somatic anxiety, and both effects are positive. The standardized regression equation is: Swimmers' physical anxiety = (0.441× emotional / physical exhaustion) + (0.342 × reduced sense of achievement). To sum up, the data supports this study's first set of research hypotheses.

Table 5

Stepwise multiple regression of physical anxiety on various dimensions of sports psychological fatigue

Predictive variable	β	t	R^2	ΔR^2	F	ΔF
Sports negative evaluation	0.44	4.46***	0.40	0.40	53.26***	53.26***
Emotional / physical exhaustion	0.34	3.46**	0.48	0.08	36.32***	11.98**

***p<0.001, **p<0.01

Relationship between swimming athletes' sports psychological fatigue and training and Competition Satisfaction Correlation analysis

Table 6

correlation matrix between sports psychological fatigue and training and Competition Satisfaction

	Reduced sense of achievement	Emotional/physical exhaustion	Sports negative evaluation	Training Competition Satisfaction
Reduced sense of achievement	1			
Emotional / physical exhaustion	0.56** (R^2=0.32)	1		
Sports negative evaluation	0.41** (R^2=0.16)	0.59** (R^2=0.34)	1	
Training Competition Satisfaction	-0.62** (R^2=0.38)	-0.50** (R^2=0.25)	0.34** (R^2=0.11)	1

**p<0.01, the decisive coefficient is in parentheses

It can be seen from Table 6 that all dimensions of swimming athletes' sports psychological fatigue and training and competition satisfaction have not only reached a significant correlation (P < 0.05) but also a significant negative correlation. The range of correlation degrees is a mainly low and medium correlation, which supports the hypothesis of this study. The following will test the predictive power of sports psychological fatigue on training and competition satisfaction through stepwise multiple regression analysis.

Regression analysis

The exercise-induced psychological fatigue of swimmers was taken as the independent variable, and the satisfaction of training and competition was taken as the dependent variable. Stepwise multiple regression analysis is also used to explore the predictive power of independent variables to dependent variables, as shown in Table 7:

Table 7

Stepwise multiple regression of Training Competition Satisfaction on various dimensions of sports psychological fatigue

Predictive variable	β	t	R^2	ΔR^2	F	ΔF
Sports negative evaluation	-0.49	-4.64***	0.38	0.38	48.40***	48.10***
Emotional / physical exhaustion	-0.23	-2.17*	0.41	0.03	27.71***	4.73*

It can be seen from Table 7 that according to the ranking of the predictive power of training and Competition satisfaction, the sense of achievement decreased in turn, and the explanatory variation reached 38.0%; The second is emotional/physical exhaustion, with an explanatory variation of 3.5%. The F value of the overall test of the regression model is 27.709 (P < 0.05). The two predictive variables can effectively explain 41.5% of the variation in training and Competition Satisfaction, and both effects are negative. The standardized regression equation is: Athletes' training and Competition Satisfaction (0.487 × reduced sense of achievement) + (-0.228 × emotional / physical exhaustion).

Discussion

There are relative adjustment approaches for pre-competition, competition, and post-competition anxiety, as illustrated in the table below.
(1) Anxiety before competition is connected to the level of training, competitive experience, and athlete's personality traits. Athletes frequently experience intense and tense emotions because another rapidly replaces one emotional state. The degree of worry correlates strongly with intramuscular tension. Important between the human body and psychology is the principle that worry and relaxation cannot coexist. When physical strain is relieved, the level of tension decreases, and anxiety and negative psychological states vanish at the psychological level.
(2) Anxiety in competition is highly associated with the strength of athletes' opponents and the circumstances of on-the-spot competition, which frequently varies as both variables alter. When the opponent's strength is strong, but the athlete's strength is weak, it is easy for the athlete to be psychologically dominated by the opponent's strength, resulting in faith shaking and emotional strain, a lack of competition courage, and a progressive loss of judgment. When their opponents' advantages are steadily reversed, athletes frequently display wrath and irritation, exhibiting a poor condition of tension, impatience, and dyskinesia. Athletes must focus on themselves, recollect their conduct with the right activation level during the swimming process, develop a clear comprehension of their technical swimming activities, and release their nervousness due to the unique nature of swimming.

(3) Whether the outcome of a sports competition is favorable or unfavorable, it will have a particular cognitive impact on the athletes and cause a variety of emotional responses. Specifically, the outcomes of important competitions frequently induce intense psychological stimulation in athletes due to gaming loss or psychological damage. A few athletes concluded their athletic careers. To assist athletes in overcoming post-competition anxiety, the following adjustment techniques may be utilized: Self-suggestions and muscle relaxation; Warm water or a massage after the game to relax the muscles; Distraction; Revisit self-awareness and conduct a thorough self-evaluation.

Conclusion

The combination of various dimensions of sports psychological exhaustion can strongly predict the various dimensions of athletes' pre-competition emotion and the sports psychological fatigue elements of the individual failure anxiety dimension in swimmers' pre-competition emotion. According to the predictive power, it is classified as having a diminished sense of accomplishment and a negative view of sports. According to the results of regression analysis, swimmers' pre-competition concerns and anxieties regarding their ability to play at a normal level and achieve the established competition goals stem primarily from a long-term decline in their sense of competence and achievement in training and competition, as well as their enthusiasm and motivation for training and competition. Reduced sense of accomplishment and emotional/physical weariness can strongly predict the self-confidence dimension of pre-competition emotion as elements of sports psychological fatigue. The pre-competition mood measurement distinguishes self-assurance from the other three characteristics. It mostly assesses the athletes' positive or positive emotions before the competition. According to the regression analysis results, the self-assurance of swimmers prior to competition is mostly influenced by the fall in their sense of competence and achievement throughout training and competition, as well as the athletes' excessive consumption of emotion and energy—the greater these two levels, the lower the level of confidence before to the game.

Research Implications

This investigation focused on the athletic performance of Chinese swimmers. Although the literature has explored the athletic performance of athletes in numerous sports, it has disregarded the athletic performance of swimmers. The present study examined a novel relationship between swimmers, psychological exhaustion, and athletic performance. This association is significant because it correlates with sports psychological exhaustion, a relatively uncommon phenomenon in the performance of swimmers. While swimming-related athletes in China are considered, sports psychological weariness is not highlighted.

Consequently, this is an important study since it examined the significant impact of sports psychological weariness on athletic performance. It is crucial to determine the role of sports psychological tiredness since it is associated with athletic performance and can affect competitive performance. Likewise, this study is essential for the management of the sports club to enhance the athletic performance of various athletes. Therefore, this study is essential for swimming instructors working in various academies to teach athletes. The instructors that educate athletes at various academies should reduce psychological tiredness. Coaches should reduce psychological weariness in sports by employing various techniques that may result in improved athletic performance. As demonstrated by this study, psychological weariness can negatively impact athletic performance. Therefore, the management of various sports clubs and the coaches of various academies are advised to focus on psychological exhaustion to improve sports performance.

Suggestions for Future Research

Even though there have been significant accomplishments in this study, there are still several flaws worth mentioning: the sample size is too small due to the low sample size, which may lead to significant inaccuracies in the analysis and processing of statistical data, as this study primarily picks swimmers training for the London Olympics. This article has investigated and studied just good swimmers based on convenience sampling. In the course of the research, questionnaires were used. This work examined trait anxiety and its association with outcome and moderator variables. However, trait anxiety's antecedent variables were not considered. In future research, in addition to educating the investigators, we should also carefully screen the survey items to assure the survey results' accuracy and increase the survey results' authenticity and dependability. Future research should add antecedent variables to construct a comprehensive research framework. Focus on the development of the sports psychology skills of athletes. The level of sports psychology skills can influence the development of sports psychological tiredness; therefore, enhancing the psychological skills of athletes is favorable to preventing and eliminating sports psychological weariness. For top swimmers, considerable emphasis should be placed on developing psychological preparation skills, whereas collective importance skills should receive relatively less attention.

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