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Research Article

The Effect of Jogging on the Physical Health of College Students Based on Intelligent Computing

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Intelligent computing is an environment-adaptive computing method developed by using various mechanisms of physical or natural phenomena. The university stage is a critical period for a person's physical and mental development. Healthy psychology and physical quality are the basic characteristics of students' talents and a reliable guarantee for students' normal study, life, and work. The purpose of this article is to study how to analyze and study the impression of jogging on the physical health of college students based on intelligent computing and describe the intelligent computing algorithm. This article puts forward the problem of the impact of jogging on the body, which is based on intelligent computing, elaborates on the concept of intelligent computing and related algorithms, and designs and analyzes the impact of jogging. The experimental results showed that after 5 months of jogging, there was no significant difference in the height and weight of the subjects. The body fat percentage of boys decreased significantly before and after exercise, but there was no significant difference after the statistical test ($P > 0.05$), from 20.42 ± 2.53 to 20.21 ± 3.28. The body fat percentage of girls decreased significantly, with a significant difference ($P < 0.05$), from 29.43 ± 4.27 to 25.72 ± 2.94.

1. Introduction

As human society enters the new century, "health" has become one of the most concerned topics in the world and an important social goal worldwide in the new century, an important symbol of social development and progress. The booming economy and modern culture have brought great benefits and convenience to people, but at the same time, they have also affected people's survival and health, and people's health needs are becoming more urgent. Faced with various pressures such as attention from all walks of life and future employment, college students have to bear more than ordinary people. To a certain extent, the physical health of college students has been declining in recent years, and problems such as insufficient muscle strength and muscular endurance, obesity, and deviation of cardiopulmonary function have appeared. Of course, there are some reasons for this phenomenon and the poor subjectivity of domestic college students participating in physical exercise. On the other hand, it is mainly due to the lack of time for college students to effectively participate in physical exercise during school and the lack of supervision by relevant departments. College students shoulder the mission entrusted by history and the people. Their mental health not only directly affects their progress and growth but also affects the rise and fall of the country and the nation.

As the country's future college students, their educational work has always been highly valued by the country, and their good physical quality is the basic guarantee for socialist construction. In recent years, the physical health of college students who are responsible for the future construction of the country has been declining, which not only affects the future life of individuals but also affects the future development of the country. Although this situation has already attracted the attention of the country and society, educators are also making unremitting efforts, and the reform of the physical education curriculum has achieved initial results. However, it has to be admitted that physical

education in colleges and universities has not been effectively implemented due to various factors and has not been well integrated with national fitness and lifelong sports. This puts forward urgent requirements for the effective play of college sports, and this situation must be effectively changed. Correct physical activity can strengthen people's physical health and get a stronger physique.

The innovations of this article are as follows: (1) This article combines intelligent computing with motion analysis, introduces the theory and related methods of intelligent computing in detail, and mainly introduces the related content of artificial neural network and support vector machine (SVM). (2) Using literature, physical fitness measurements, and other research methods to find out the impact of jogging on the health of college students. Using scientific data to explain the problem and then let the college students themselves, the school, and the society pay attention to it and give some reference and theoretical support to the way of college students' sports.

2. Related Works

An intelligent computing system, described as a collection of connected devices that work to understand each other to achieve a specific purpose, is a combination of artificial intelligence and computational intelligence and is used in a variety of applications. Sundaresan et al. [1] proposed a new computing framework named VEERBENCH for learning and training mechanisms using kernels in heterogeneous architectures according to workload. The framework uses fuzzy clustering with extreme learning machines and formulation of adaptive and cognitive energy (FACE) rule sets for energy and performance-based allocation of cores. His proposed knowledge-based testbed has been compared with other tools such as MACPACT and ESEC and other energy-based scheduler benchmarks. However, his accuracy is not enough [1]. Singh aims to gain insight into how the third wave of information technology, the Internet of things (IoT), will use artificial intelligence to interconnect the physical world. He further discusses the building blocks of IoT and the promising areas that can be implemented intelligently. However, he lacks an objective basis [2]. The objective of the Tarawneh study was to develop a formula that can be used in conventional geotechnical work but is sufficient to address granular soil behavior associated with settlement problems. He used the penetration test and foundation load test data to generate settlement prediction formulas, and genetic programming (GP)-based symbolic regression (GP-SR) and artificial neural networks were used to develop the optimization formulas. The settlement was also calculated using the finite method and compared with the results of the developed formula. Among all developed ANN and GP-SR models, ANN model 1 has the highest R value (0.93) and the lowest MSE (0.16). In some cases, the settlement of the finite element method is almost double the measured value. However, his network energy consumption is large [3]. Iwin [4] introduced an overview of data mining algorithms and technologies that can be used in intelligent computing systems, introduced the basic concepts of data mining and the classification of the main algorithms and technologies of data mining, and further reviewed. He concludes with a summary of the challenges contained in the survey overview as well as future enhancements to research that analyzes data mining techniques in intelligent computing applications. However, his technique is less efficient [4]. Sun et al. [5] proposed an optimized cluster communication protocol (CCP-IC) based on intelligent computing. First, he uses intelligent algorithms to optimize the clustering in the sensor network, introduces adaptive functions and heuristic functions, and selects the next hop of nodes in the network on the cluster head. Second, he employs controllable threshold parameters and coefficients of variation to optimize the shortest path for network routing. Therefore, the node energy consumption is reduced and the transmission efficiency is improved while ensuring the minimum network delay. Finally, the simulation results are verified and compared with other algorithms. It reduces the network energy consumption and prolongs the network life, which proves the effectiveness of the protocol. However, its scope of application is limited [5]. Malathy and Shunmugalatha [6] proposed to apply soft computing techniques to evaluate the optimal location and control settings of flexible AC transmission system (FACTS) equipment to improve the maximum loadability (ML) of the pool. Particle swarm optimization (PSO) and hybrid particle swarm optimization (HPSO) algorithms are used to optimize the solution. In the case study, three different FACTS devices are considered, namely series thyristor-controlled series compensator (TCSC), parallel-type static VAR compensator (SVC), and series-parallel-type unified power flow controller (UPFC). It can be concluded that HPSO provides better results with minimal computation time (ToC) and faster convergence. However, his cost consumption is relatively large [6]. Sabir et al. [7] designed a novel neural swarm computing standard using an artificial intelligence scheme to utilize Goodman neural networks (GNNs) with global and local search capabilities of particle swarm optimization (PSO) and sequential quadratic programming schemes (SQPS). It is called GNN-PSO-SQPS to solve a class of second-order Lane–Emden singular nonlinear models (SO-LES-NM). The performance of GNN-PSO-SQPS is tested by statistical operators to verify its constancy, convergence, and accuracy. However, his experimental data are limited [7].

3. Methods Based on Intelligent Computing

3.1. The Concept of Intelligent Computing. Intelligent computing is an environment-adaptive computing method developed by using various mechanisms of physical or natural phenomena. Intelligent computer technology describes the object of the problem through a specific mathematical model, making it a functional, programmable discipline, computable, and intuitive. It has the characteristics of parallelism, adaptability, and self-learning, and remote control has been developed and widely used in the fields of science, bioinformatics, and chemistry [8, 9].

The development of intelligent computing has a long history. Symbolism, connectionism, evolutionary computing, and simulated annealing algorithms developed in the early days are the main research schools of classical intelligent methods; they still occupy an important position in the field of intelligent computing and have achieved very rich theoretical and application results. With the development of the times, the combination of classical intelligent algorithms and other biological theories in life sciences has made great progress in intelligent computing. It has developed into a multidisciplinary, multi-intelligence fusion and penetration of information and computing field. Modern intelligent computing has gradually developed many potential research branches based on classical intelligent algorithms such as the theory and application of the human immune system, particle f group optimization algorithm (PSO), support to the machine (SVM), etc.

It includes neural networks, fuzzy systems, and evolutionary computing, among others. The neural network algorithm classifies knowledge according to the way of teacher learning or non-teacher learning and has good learning ability. The fuzzy system solves the problem of uncertain factors in human life and production process in the application of computer so that the computer can better solve the problems in people's life and production. Evolutionary computing represents various complex structures through simple coding techniques, guides learning, and determines the direction of search through natural selection of the survival of the fittest. With the rapid development of computer technology, the application fields of intelligent computing methods are becoming more extensive.

3.2. Artificial Neural Network. An artificial neural network is a multilayer feedforward neural network trained according to the error backpropagation algorithm, and it is one of the most widely used neural network models. In the feedforward artificial neural network based on the gradient descent method, the BP algorithm is one of the most commonly used and effective learning methods [10]. For this reason, the feedforward artificial neural network using the BP algorithm is often referred to as the BPNN algorithm. Figure 1 shows the structure of a BPNN algorithm with j hidden layers.

The input is divided into n layers, which correspond to the dimensions of the sample vector. The specific content of each layer in the input is relative to the sample vector. Using N_i to represent the ith data in the hidden layer, the output of the first hidden layer can be expressed as:

$$Y_i^1 = \frac{1}{1 - \left(\sum_{a=1}^{n} X_a \cdot w_{ia}\right)}, i = 1, L, N_1. \tag{1}$$

The outputs of the other hidden layers are:

$$Y_i^j = \frac{1}{1 - \left(\sum_{a=1}^{N_{j-1}} Y_a^{j-1} \cdot w_{ia}^j\right)}, \quad k = a, \Lambda, J;\ i = 1, \Lambda, N_j. \tag{2}$$

If the problem has m expected outputs, the output layer should have m nodes, and the outputs are as follows:

$$Z_i^1 = \frac{1}{1 - \left(\sum_{a=1}^{N_1} Y_a^J \cdot w_{ia}^0\right)}, \quad i = 1, L, m, \tag{3}$$

where w_{ia} represents the weight relationship between the ith node in a layer and the ath node in the previous layer. This weight value is obtained through prior training. This method of training is called the BP training method.

3.3. Genetic Algorithms. A genetic algorithm (GA) is a group-type operation, which mainly includes three main parts: selection, crossover, and mutation [11]. The main process is shown in Figure 2. A genetic algorithm is a global heuristic search algorithm used to solve optimization problems in the field of artificial computer science and is often used to create useful solutions to optimization and search problems.

In Figure 2, we describe the process of the genetic algorithm in detail:

(1) Coding and initial population: since the algorithm itself cannot directly deal with the solution number, it must be represented by the coding form of the genotype string structure, which can be expressed in a binary form such as 11001, and generate n initial groups according to the encoding form; n is usually set according to the actual situation [12].

(2) Fitness calculation: the fitness calculation is to evaluate the pros and cons of the individual through an evaluation function, which is the main basis for the next round of operation of the genetic algorithm, so the design of the fitness algorithm is very important.

(3) Selecting an action: the selection operation of the genetic algorithm mainly includes the wheel method and the tournament method.

(4) Crossover: crossover is to exchange some information with each other for two individuals that are successfully paired randomly to form a new individual and then calculate the fitness. If the fitness data of the new individual improve, it means that the individual is optimizing in the desired direction.

(5) Variation: in order to make the individuals in the group have diversity and prevent the problem of local solutions, the operation of the individual parts is performed bitwise, so that the group can survive and develop better.

3.4. Support Vector Machine Classification and Regression. Support vector machine (SVM) is a kind of generalized linear classifier that performs binary classification on data according to supervised learning. Its decision boundary is the maximum-margin hyperplane that is solved for the learning samples.

The SVM method is proposed according to the optimal classification surface in the case of linear separability. Based

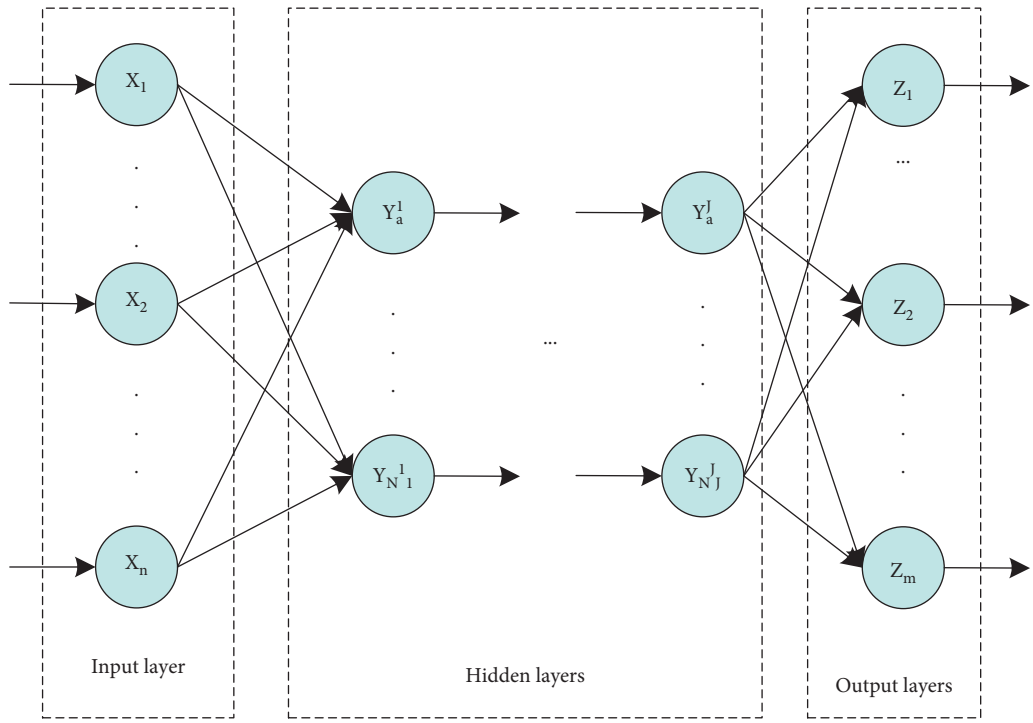

Figure 1: BPNN structure.

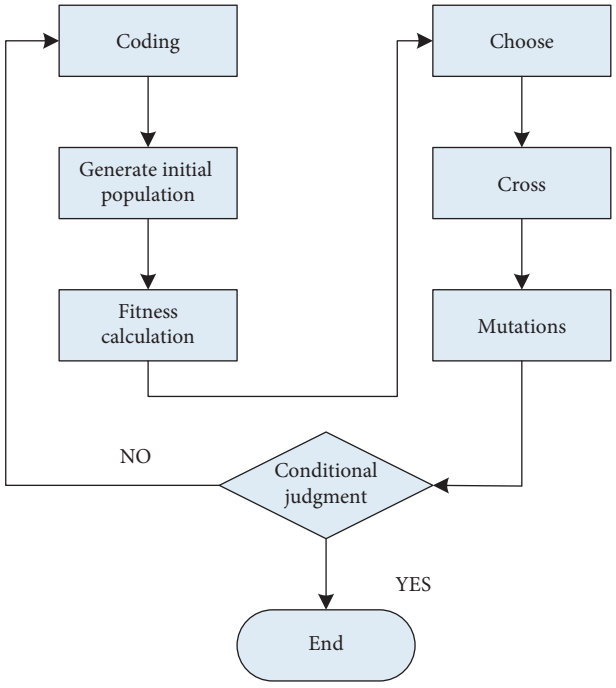

Figure 2: Basic flow of the genetic algorithm.

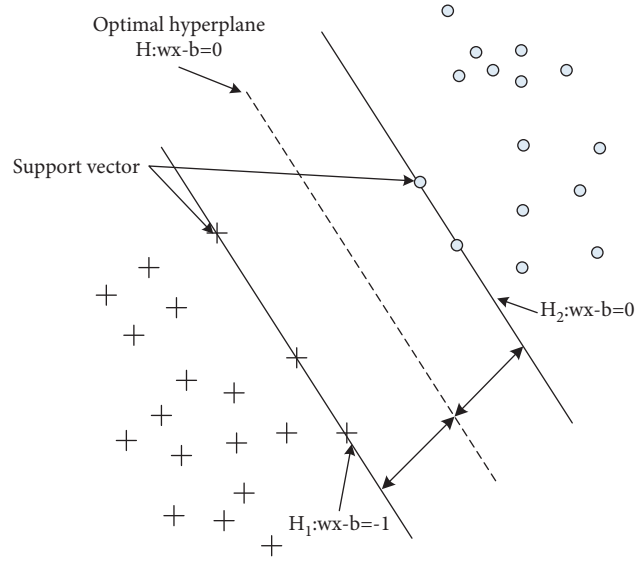

Figure 3: Schematic diagram of the optimal hyperplane.

on such a classification hyperplane, the SVM can not only correctly classify all training samples but also make the points in the training samples closer to the grading surface to the longest distance from the grading surface [13], as shown in Figure 3. In Figure 3, H is the classification line that separates the two categories without errors, $H1$ and $H2$ are the straight lines parallel to the classification line through the point H closest to the classification line in each sample, and the distance between $H1$ and $H2$ is called the classification interval. The optimal classification line is not only able to separate the two classes without error but also to maximize the classification interval of the two classes. The former is to ensure that the empirical risk is minimized, and the maximum classification interval is actually to minimize the confidence interval in the bound of the generalization ability, thereby minimizing the true risk. Generalized to high-dimensional space, the optimal classification line becomes the optimal classification surface.

Assuming that the training data $\{x_a, y_a\}(a = 1, \ldots, j, \quad x_a \in R^e; y_a \in \{-1, 1\}$ can be separated from an error-free hyperplane $(\sigma \cdot x) - b = 0$, the classification hyperplane that is farthest from the sample points of the two classes should obtain the best generalization ability. The optimal hyperplane will be determined by the few sampling points closest to it (called support vectors) [14]. The classification hyperplane with sample interval θ is:

$$\begin{aligned}(\sigma \cdot x) - b = 0, \|\sigma\| = 1,\\ y = 1, \quad if \sigma \cdot x - b \geq \theta,\\ y = -1, \quad if \sigma \cdot x - b \leq -\theta.\end{aligned} \tag{4}$$

The classification superlevel for SVM optimization problems should be normalized as follows, at least $\theta = 1$, σ and b can be scaled. The hyperplane is represented as:

$$\begin{aligned}\sigma \cdot x - b \geq 1, \text{ if } y = 1,\\ \sigma \cdot x - b \geq -1, \text{ if } y = -1.\end{aligned} \tag{5}$$

The distance from the support vector on the hyperplane is $1/\|\sigma\|$. Therefore, the optimization problem is formulated as:

$$\begin{aligned}&\min \quad \frac{1}{2}\|\sigma\|^2,\\ &\text{s.t.} y_a(x_a \cdot \sigma + b) - 1 \geq 0 \quad (a = 1, 2, \ldots, j).\end{aligned} \tag{6}$$

According to the square programming method in the optimization theory, the problem is transformed into a double Wolfe problem to solve, and the Lagrange function is constructed:

$$\begin{aligned}L(\sigma, c, b) = \frac{1}{2}\|\sigma\|^2 - \sum_{a=1}^{j} c_a y_a (x_a \cdot \sigma + b)\\ + \sum_{a=1}^{j} c_a, \quad (c_a \geq 0; a = 1, 2, \ldots, j),\end{aligned} \tag{7}$$

where c_a is the Lagrange multiplier.

According to the optimization principle:

$$\begin{aligned}\frac{\beta}{\beta\sigma} L(\sigma, c, b) = 0,\\ \frac{\beta}{\beta b} L(\sigma, c, b) = 0.\end{aligned} \tag{8}$$

That is

$$\begin{aligned}\sigma = \sum_{a=}^{j} c_a y_a x_a,\\ \sum_{a=1}^{j} c_a y_a = 0.\end{aligned} \tag{9}$$

Substituting the two formulas back into the Lagrange function and eliminating σ and b, the Wolfe dual problem of the original optimization problem is obtained by the following operation:

$$\begin{aligned}&\max W(c) = \sum_{a=1}^{j} c_a - \frac{1}{2} c_a c_l y_a y_l x_a x_l,\\ &\text{s.t.} \sum_{a=1}^{j} c_a y_a = 0 (c_a \geq 0; a = 1, 2, \ldots, j).\end{aligned} \tag{10}$$

Its solution is the optimal solution of the initial optimization problem [15]. An optimization algorithm can be used to solve c; the parameter b can be calculated according to the Karush–Kuhn–Tucker condition:

$$b = y_a - \sigma^T x_a (c_a (0, D) \tag{11}$$

So, the optimal hyperplane is:

$$f(x) = \text{sgn}\{(\sigma \cdot x) + b\} = \text{sgn}\left\{\sum_{a=1}^{j} c_a y_a (x_a \cdot x) + b\right\}. \tag{12}$$

For linear inseparable classification problems, the x input can be assigned to a high-dimensional feature space $\varphi(x)$ by a nonlinear function, and linear classification is performed in this space, which is:

$$f(x) = \text{sgn}\left\{\sum_{a=1}^{j} c_a y_a K(x_a \cdot x) + b\right\}. \tag{13}$$

The structure diagram of this type of SVM with lower classification is shown in Figure 4, which is equivalent to a two-layer feedforward neural network in structure.

Data $j\{x_a, y_a\}_{a=1}^{j}$, where the sample output is $y_a \in R$ and the e-dimensional input is $\{x_a, y_a\}_{a=1}^{j}$. Nonlinear regression is the discovery of a nonlinear function f that approximates the relationship between input and output. Using a method similar to nonlinear hierarchical SVMs, the input is first assigned to a high-dimensional F feature space through a nonlinear function $\varphi(\cdot)$, and then the nonlinear function regression problem is transformed into a linear regression in the high-dimensional space [16, 17].

Let the desired approximation function be:

$$f(x) = \sigma^T \cdot \varphi(x_a) + b\left(\sigma \in R^h, \quad b \in R\right), \tag{14}$$

where the dimension of the high-dimensional feature space is h and the offset is b.

Since Φ is stable, it affects the empirical risk of σ and makes the f-function smooth $\|\sigma\|^2$ in high-dimensional space, then there are:

$$R(\sigma) = R_{cmp}(\sigma) + \lambda\|\sigma\|^2 = \sum_{a=1}^{j} v(f(x_a) - y_a) + \lambda\|\sigma\|^2, \tag{15}$$

where the loss function is $v(\cdot)$ and the regularization constant is λ.

Minimizing $R(\sigma)$ yields σ in data points:

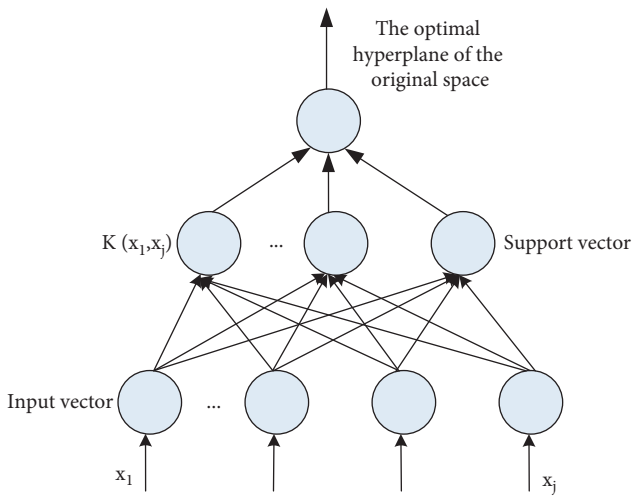

Figure 4: Support vector machine structure.

$$\sigma = \sum_{a=1}^{j} (c_a - c_a^*)\varphi(x_a), \tag{16}$$

where c_a, c_a^* is the solution that minimizes $R(\sigma)$.

According to formula (14) and formula (16), $f(x)$ can be expressed as:

$$\begin{aligned} f(x) &= \sum_{a=1}^{j} (c_a - c_a^*)\{\varphi(x_a) \cdot \varphi(x)\} + b, \\ &= \sum_{a=1}^{j} (c_a - c_a^*)K(x_a, x) + b. \end{aligned} \tag{17}$$

For different loss functions $v(\cdot)$, the optimization problem of formula (15) has different forms. Commonly used loss functions are Vapnik ε (insensitivity loss function), quadratic ε, and Huber. The parameter b can be obtained according to the Karush–Kuhn–Tucker condition.

3.5. Jogging for College Students. The university stage is an important transition stage for students to leave campus and enter the society. At this stage, students must strive to become perfect social beings and achieve a major turning point in their lives. Therefore, they are in a sensitive period, and their physical health is directly related to their physical condition and working ability after studying, living, and working. On the other hand, influenced by the current mainstream aesthetics, by improving social living standards, students have higher requirements for appearance and use different methods to achieve a slimming result [18, 19].

Jogging is a moderate-intensity aerobic exercise. One of the effective ways to lose weight is to perform aerobic exercise, which refers to endurance exercise in which the body's metabolism is dominated by aerobic metabolism during exercise. In addition, it converts body fat into free fatty acids in the blood, because the energy expended during exercise and the free fatty acids that are not consumed will no longer be broken down into fat. Studies have shown that aerobic exercise can regulate metabolic function, promote fat decomposition, reduce blood sugar and insulin levels, reduce appetite, increase energy consumption, improve cardiopulmonary function and blood lipid levels, etc., which is an effective weight loss method.

4. Experiment and Analysis on the Effect of Jogging on the Physical Health of College Students

4.1. Experimental Subjects. This article takes a college student who is not a sports major in 2019 (junior year) as the research object. Before the start of the study, it is ensured that the research object is in good physical condition, has no long-term professional sports experience, and has not participated in similar sports activities. The age of the research subjects ranged from 20 to 22 years old, with a total of 100 people, including 54 males and 46 females. The relevant data obtained are shown in Table 1.

Body mass index (BMI) is an effective and practical method for international obesity testing, and it is commonly used to assess the prevalence of obesity (BMI and body fat content vary by body composition). Waist-to-hip ratio assesses abdominal fat distribution and correlates with CT-measured abdominal fat area. The waist circumference or minimum waist circumference is used for measurement, and waist circumference (umbilical point) is not used. Upper body obesity is a high WHR value, and lower body obesity is a low WHR value. Assessment criteria vary by age, gender, and race. The World Health Organization recommends that the distribution pattern of excess abdominal fat is: male WHR > 1 and female WHR > 0.8 [20].

Body mass index is an important indicator for judging a person's body type. If it is calculated with body mass index, its formula is body mass index = weight (kg)/height squared (m^2), and it is extended to all parts of the world. WHO defines a body mass index as underweight if less than 18.5; normal physique between 18.5 and 22.9; overweight between 23 and 24.9; and obese if greater than 25.

4.2. Experimental Results. Table 2 shows that after 5 months of jogging, there was no significant difference in the height and weight of the research subjects, but the BMI value decreased after exercise compared with before exercise, but there was no significant difference in the data of each group ($P > 0.05$). Before and after exercise, the changes in WHR values of boys and girls were slightly different. The related values of girls decreased significantly after exercise, and the declining trend of boys was not obvious. As can be seen from Table 2, after 5 months of exercise, the body indicators of the research subjects changed less.

As can be seen from Table 3, the body fat percentage of boys before and after exercise decreased significantly, but there was no significant difference after the statistical test ($P > 0.05$). The body fat percentage of girls decreased significantly, with a significant difference ($P < 0.05$).

As can be seen from Table 4, the flexibility of the research subjects has been improved to a certain extent, but there is no significant difference after statistical testing ($P > 0.05$).

Table 1: Basic physical conditions of the research subjects.

Gender	Male	Female
Age ± standard deviation	20.86 ± 0.94	20.67 ± 0.93
Height ± standard deviation	171.46 ± 6.12	160.35 ± 4.66
Weight ± standard deviation	63.26 ± 5.62	52.46 ± 4.85

Table 2: Effects of body shape test metrics.

Gender	Test items	Male	Female
Before exercise	Height (cm)	171.46 ± 6.12	160.35 ± 4.66
	Weight (kg)	63.26 ± 5.62	52.46 ± 4.85
	BMI (kg/m^2)	21.72 ± 2.09	20.46 ± 2.47
	WHR	0.87 ± 0.04	0.77 ± 0.03
After exercise	Height (cm)	171.53 ± 6.31	160.62 ± 4.78
	Weight (kg)	62.57 ± 4.33	52.22 ± 3.54
	BMI (kg/m^2)	21.32 ± 1.68	20.30 ± 1.88
	WHR	0.87 ± 0.06	0.73 ± 0.02

Table 3: Effects of body fat percentage test metrics.

Gender	Test items	Male	Female
Before exercise	Body fat percentage (%)	20.42 ± 2.53	29.43 ± 4.27
After exercise	Body fat percentage (%)	20.21 ± 3.28	25.72 ± 2.94
Difference		0.21 ± 0.75	3.71 ± 1.33

Table 4: Effects of flexibility test metrics.

Gender	Test items	Male	Female
Before exercise	Sitting forward flexion (cm)	12.06 ± 6.92	13.37 ± 5.18
After exercise	Sitting forward flexion (cm)	12.21 ± 6.12	13.94 ± 4.38
Difference		0.15 ± 0.8	0.63 ± 0.8

Figure 5: Changes in male and female gender composition indicators before and after exercise.

Among them, the improvement rate of girls is significantly greater than that of boys. The main reason is that the research subjects do not pay attention to the training of ligament and muscle stretching in the process of exercise, and the jogging itself does not require high flexibility for beginners. At the same time, there are some innate differences between boys and girls.

As can be seen from Figure 5, after 5 months of exercise, the body composition indicators of the research subjects changed significantly. Among them, lean body mass and muscle mass increased significantly ($P < 0.05$). Lean body mass, also known as "at-free body," is the weight of body components other than fat. It consists of body cell weight (BCW), extracellular water (ECW), and fat-free solid fraction (FFS). Its main components are bones, muscles, etc. The bone weight of adults is constant. There was no significant change in fat weight in boys before and after exercise ($P > 0.05$), but there was a significant change in girls ($P < 0.05$). Fat is an oily substance in humans, animals, and plants, existing in the subcutaneous tissue of humans and animals and in plants, and is an integral part of living organisms and energy storage materials. When the human body is deficient in glucose, fat can be decomposed to generate energy, so long-term aerobic exercise can allow the body to metabolize and consume excess fat [21]. In addition, there was no significant change in the weight data of the researchers themselves ($P > 0.05$). This is mainly because the exercise profile does not involve strength training with heavier loads.

As can be seen from Figure 6, the vertical jump data of boys have been significantly improved ($P < 0.05$), while the vertical jump data of girls have not improved to a large extent ($P > 0.05$). The strength and endurance data of the researchers were significantly improved, and the data between boys and girls were also significantly different ($P < 0.05$). After 5 months of exercise, the strength and endurance of the study subjects were significantly improved.

As can be seen from Figure 7, the resting heart rate of the research subjects did not decrease significantly ($P > 0.05$). However, the data of vital capacity, 1-second rate, and MVV were significantly improved ($P < 0.05$), which indicated that the lung function was improved and the heart pumping function was enhanced.

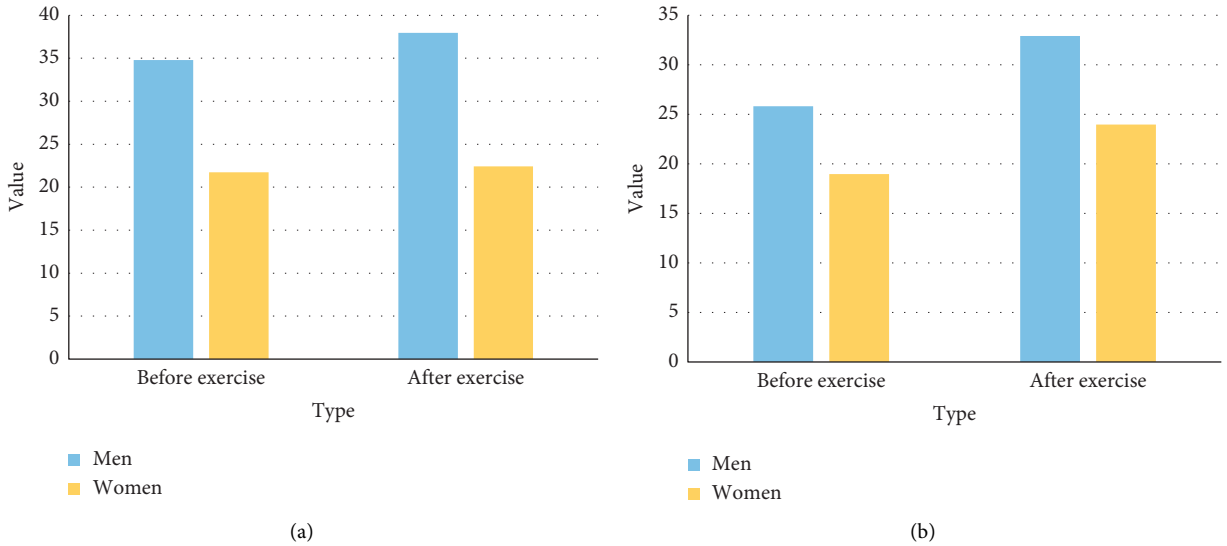

Figure 6: The influence of muscle explosive power and endurance test indicators. (a) Changes in the vertical jumping ability of men and women before and after exercise. (b) Changes in 1-minute push-ups for men and 1-minute sit-ups for women before and after exercise.

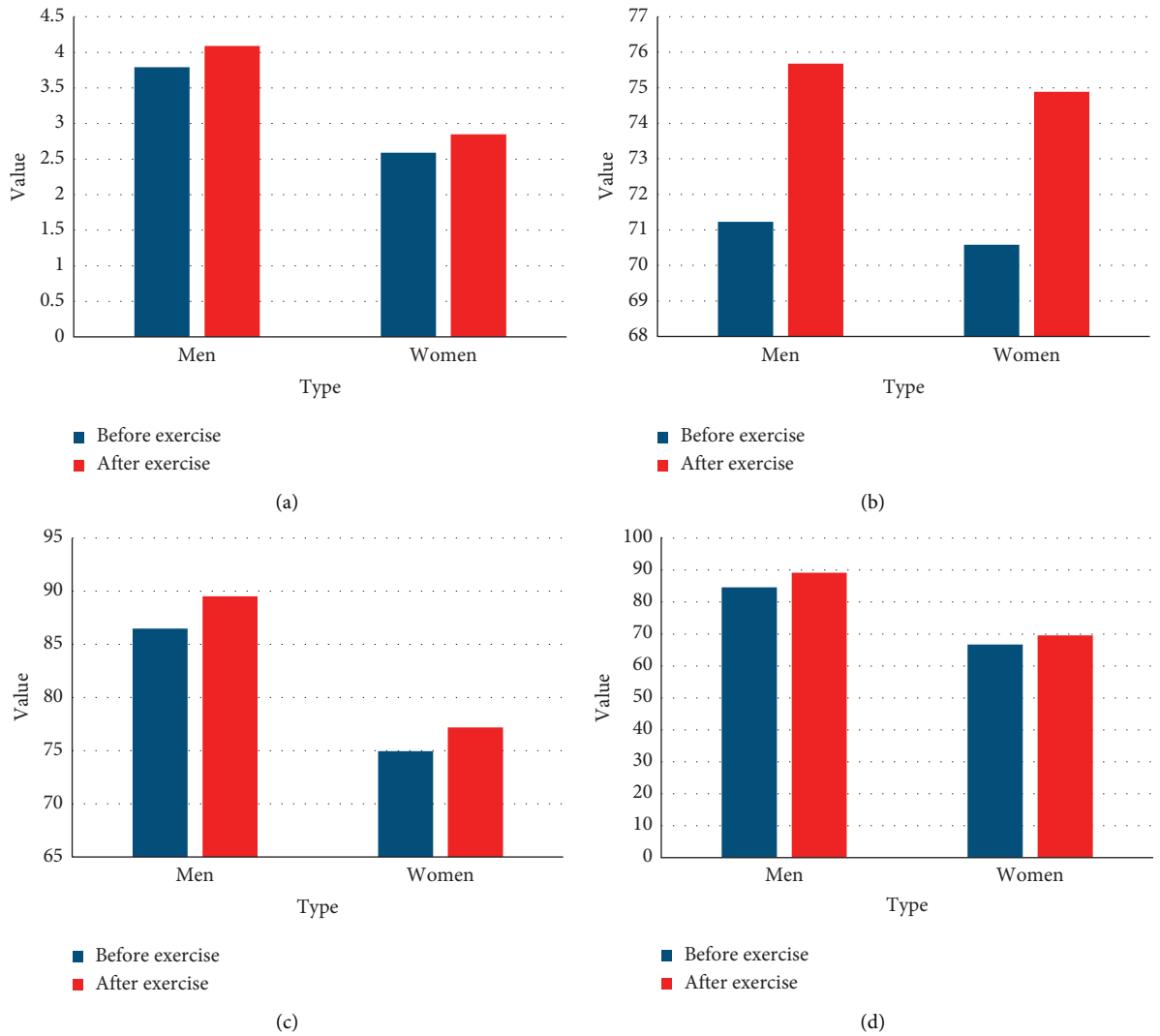

Figure 7: Changes in each index of cardiopulmonary function test before and after exercise. (a) Changes in the lung capacity of boys and girls before and after exercise. (b) Changes in the resting heart rate of boys and girls before and after exercise. (c) Changes in the 1-second rate of boys and girls before and after exercise. (d) Changes in maximum pulmonary ventilation in boys and girls before and after exercise.

4.3. Experimental Analysis. A large number of relevant studies have shown that moderate and high-intensity exercise has better psychological effects, and moderate-intensity exercise has the greatest impact on mental health. This is because excessive exercise usually exceeds the normal load, and it can cause heart, stomach, muscle, and bone discomfort and make people feel extremely tired. The physiology and psychology of thousands of people are closely linked and influence each other. Therefore, excessive exercise can also lead to psychological discomfort and disgust. If the amount of exercise is too small, it cannot meet the needs of physical development, and the purpose of physical and mental exercise cannot be achieved through physical exercise. Only moderate physical activity can have a positive impact on human functioning and mental health.

The data in the above table show that the body mass index of the research subjects is within the healthy range. After 5 months of tennis exercise, their body mass index has no significant change and gradually develops to a normal direction. It can be seen from this study that after 5 months of jogging, only the female WHR of the study subjects decreased. And under the premise of no significant changes in body weight and BMI index, the decrease in WHR value indicates that the body fat mass is decreasing and the fat distribution is more reasonable. It can be seen from this analysis that the decline in WHR values of female subjects was larger than that of male subjects.

The waist always plays the role of transmitting power. After sufficient exercise, the muscles become stronger , the muscle fibers become thicker, the muscle strength increases, and the lean body mass increases. Increasing lean body mass can improve exercise capacity, so after long-term exercise, there is a significant loss of fat, but since lean body mass can be increased, weight loss is not necessarily lost [22].

Long-term physical activity can reduce body fat to change a person's body shape. Exercise can reduce body fat, and muscle movement leads to the release of epinephrine, which increases cAMP (cyclic adenylate) levels in adipocytes, thereby activating hormone-sensitive lipase and promoting fat hydrolysis. In addition, exercise reduces the activity of glucose-6-phosphate dehydrogenase, reducing the supply of hydrogen required for fatty acid synthesis, thereby inhibiting fatty acid synthesis, resulting in reduced fat synthesis. In addition, exercise can also increase the activity of α-glycerol phosphate dehydrogenase and accelerate the oxidation of α-glycerol phosphate. Therefore, exercise promotes fat catabolism and weakens anabolism to reduce body fat and control obesity.

5. Discussion

First of all, through the study of relevant knowledge points of literature works, this article initially masters the relevant basic knowledge and analyzes how to analyze the physical health of college students based on intelligent calculation and analysis of jogging. The concept of intelligent computing and related technologies are expounded; artificial neural network, genetic algorithm, and SVM-related technologies are studied; SVM classification and regression are mainly explored; and the impact of jogging on the health of college students is analyzed through experiments.

This article focuses on the related algorithms of SVMs. Support vector machines are designed to be extended to nonlinear fields based on linear classification using statistical theory. The multi-bit surface constructed by the model maximizes the Euclidean distance of different categories of samples from the solution surface. As researchers continue to expand the application field of SVM, SVM can also be used to solve traditional problems such as excessive problem solution space and overlearning. Support vector machine is that the error rate on the limited sample test set is bounded by the sum of the terms associated with the VC dimension of the training error rate. When faced with these limited data samples that can be separated, the value of the training error rate is zero at this time, and the value of structural risk is guaranteed to be minimized.

Through the experimental analysis in this article, we can see that after 5 months of jogging, the body fat percentage of boys decreased significantly, but there was no significant difference after statistical testing. The girls' body fat percentage dropped significantly, and the difference was significant. The body composition indicators of the study subjects changed greatly, among which lean body mass and muscle mass increased significantly. There was no significant change in fat mass in boys before and after exercise, but there was a significant change in girls [23]. In addition, there was no significant change in the weight data of the researchers themselves ($P > 0.05$). This is mainly because the exercise profile does not involve strength training with heavier loads.

6. Conclusions

The development of intelligent computers has a long history, and many classic intelligent algorithms have been successfully implemented. With the development of intelligent computer technology, classical intelligent algorithms have been combined with other biological theories in life sciences, and great progress has been made in such algorithms and finally formed the modern intelligent algorithm intelligent computer theory. Students' sports motivation reflects the sports social psychological state of the new generation of teenagers, showing the better social sports psychology of the younger generation. Among them, improving physical fitness is still the main motivation of college students, indicating that the educational concept of "health first" has been accepted by the majority of college students. At the same time, exercising and enhancing physical fitness are also the main purposes of sports, which have a great role in promoting the healthy physical quality of students.

Data Availability

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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