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Retraction

Retracted: Health Screening and Promotion System Based on Disease Prevention

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] F. Zheng, J. Zheng, M. Han, Y. Wei, and L. Shi, "Health Screening and Promotion System Based on Disease Prevention," *Journal of Nanomaterials*, vol. 2022, Article ID 4540935, 13 pages, 2022.

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Research Article

Health Screening and Promotion System Based on Disease Prevention

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With the rapid development of modern medical technology, more and more clinicians use computerized medical images as the main diagnostic basis. At the same time, the generation of massive medical image information promotes the development of medical image management. Aiming at the above two problems, a medical image reporting system based on physical examination is designed and implemented, in which the medical image reporting system is an independent and complete system including login, registration, appointment, triage and doctor workstation (inquiry, report editing, and report printing), and other modules. Using the methods of literature review, expert interview, case analysis, and rational analysis, combined with nanotechnology research, this paper takes urban population health as the starting point and health promotion as the background. As the basis of systematic comparison, the theory, position, and function of health promotion are discussed in detail. Among them, Chinese Center for Disease Control and Prevention, World Health Organization, and Subscriber Data Center are the collection sites for the literature data mentioned in this article. With the construction of healthy towns and the development of social movements, the establishment of healthy sports to improve health promotion system aims to help sports play an important role in promoting healthy development. The results show that the average scores of step test for boys and girls in the test are 72.97 and 68.77, respectively, while the average scores of distance running in the national physique monitoring are 66 and 63. Therefore, in the newly established scoring standard, the step test scores of boys with 66 points are 72, while those of girls with 66 points are 68.

1. Introduction

Health promotion is a global strategy initiated by the World Health Organization (WHO), aiming at solving major challenges related to human health due to the speed of action. Using health promotion in urban planning is about creating a healthy city. The concept of health promotion aims to raise public awareness, encourage citizens to cooperate with local governments and social organizations, and create a series of effective health and environmental support, services, and interventions that affect human health, so as to achieve the purpose of health promotion. Urbanization is the general trend of the development of modern human society and the objective and inevitable result of the development of social productive forces. In the 2015 edition of the World Population Situation Report, it is estimated that in 2015, the urban population of the world will reach 54.4%, and that of developed countries will reach 81.6%. Today, when building a well-off society in an all-round way, China has entered a period of rapid urbanization, and it is estimated that the

level of urbanization will reach 50% in 2010. Rapid urbanization has brought about a series of changes. On the one hand, with the rapid development of urban construction, especially industrial towns, it is faced with overcrowding, homelessness, water shortage, and food insecurity, as well as many social, health, environmental, and other problems. Social problems such as environmental pollution are more and more important problems affecting human health. On the other hand, in the era of urban development, with the emergence of modern science and technology, the working and living conditions of urban residents have undergone earth-shaking changes. The intensification of social competition, the quickening pace of life, the improvement of intelligence, and the reduction of physical labor, the low grain output, and food shortage make people more vulnerable.

In view of the severe challenges brought by the urbanization process to human health, in order to ensure the sustainable development of cities and embody the concept of "people-oriented" urban development, the World Health Organization recommends that people in cities live a healthy life on a global scale. At present, many cities are building health promotion systems to build a healthy and harmonious affluent society, while the economy is growing rapidly. According to the concept of the World Health Organization, the importance of a healthy city means "ensuring the development of healthy life and work" to serve the broad masses of the people. To become an organic combination of healthy people, healthy environment, and society necessary for development, it must be suitable for the healthy development, growth, and enjoyment of human life.

Traditionally, health check-ups are usually done manually. Heavy business, insufficient statistics, poor management, and many other shortcomings are the result of human activities or complete lack of goal setting. Because of the extensive use of computer technology in disease management, the use of environment becomes more and more difficult for health promotion management. In the past, medical records and medical certificates were all paper, and many other medical records contained the results of medical examinations. This kind of storage system takes up a lot of space, and data is easy to be decomposed and lost. Importantly, it is difficult for Chinese Center for Disease Control and Prevention (CDC) to make statistical analysis and make effective use of medical information. The results of statistical analysis provide information for CDC's decision-making. Due to the rich experience in management follow-up and management and the rapid development and progress of network and computer technology, the use of advanced network and computer technology in medical care has become the inevitable status quo of the development of physical research methods. Using computer software for medical research can save a lot of people and property. It is necessary to know the authenticity of medical records, functional test results, other diagnostic criteria, and medical evidence of professionals, as well as the principles, information, and conditions of managing physical examination. The document is being worked out and will continue to study the medical information physical examination work. It is meaningful to build this part of Subscriber Data Center (SDC) knowledge.

2. Related Work

In the related fields of nanotechnology and health promotion, experts at home and abroad also have many research achievements. Mihail et al. discussed the progress of nanotechnology development since 2000, the achievements in the past ten years, and the global opportunities in research, education, innovation, and social achievements by 2020 [1]. Reis and Damgé thought that only through nanoparticles or biochips can nanoparticle-mediated materials be delivered to plants and advanced biosensors for precision agriculture [2]. The research of Falagan-Lotsch et al. introduced a new method of breast cancer nanodrugs based on active targeting. This method uses a multifunctional inorganic nanoplatform with biomedical relevance [3]. The research goal of Lee et al. was to provide a comprehensive overview of oil-water separation by nanotechnology and organic chemistry and to raise awareness of the environmental problems of water purification by nanotechnology [4]. Lisa et al. thought that although the side effects of medical interventions are well known and widely investigated, the possible unexpected effects of health promotion interventions are rarely discussed in the research [5]. These systems studied by Hors-Fraile et al. can be used to create tailor-made health interventions, thus reducing the cost of health care and fostering a healthier lifestyle among people [6]. However, due to the incomplete data of nanoanalysis, there are some controversies about the methods used in these studies, resulting in the related results not being recognized by the public.

3. Nanotechnology-Based Medical Examination Reporting System

This topic is a series of medical examination management system software developed based on Microsoft data. The software needs to be implemented in several stages, from registration to medical certificate issuance, changing the way of completing some work ahead of schedule, improving work efficiency, and simplifying workflow and product distribution [7]. Through large-scale data analysis, extensive analysis, and investigation, it is easy to generate reports such as quality statistics, turn data into useful information in decision-making, and provide faster decision-making suggestions for decision makers [8].

Individual nanoparticles such as nanotubes and nanorods have only one direction of electron motion left in it. Individual nanoparticles include nanoparticles, nanotubes, nanorods, and nanoviruses. Two-dimensional nanomaterials and three-dimensional nanoparticles are represented by nanoparticles, nanostructures, nanoceramics, and nanobodies. Nanocomposites are the most widely used materials today. From the point of view of morphology and structure analysis, nanoscale materials with one or more dimensions are called nanoparticles [9]. When nanoparticles are reduced

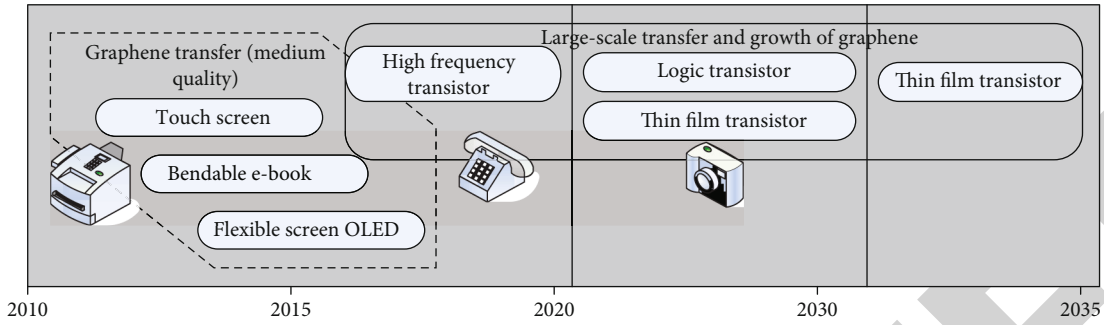

Figure 1: Timing diagram of graphene application in displays and electronics.

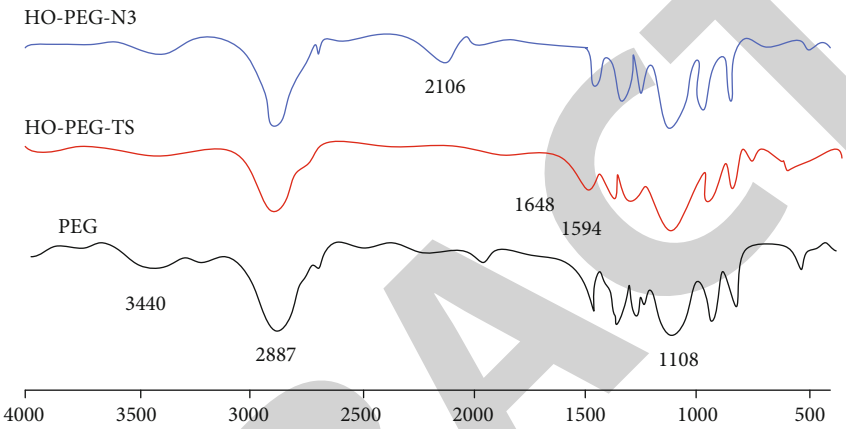

Figure 2: FT-IR spectra of PEG, HO-PEG-OTs, and HO-PEG-N3.

to the atomic or molecular level, materials show many specific effects, such as topological effect, dielectric reduction, large size, small size, and macroscopic quantum tunneling effect. Among the core materials, nanoparticles exhibit special physical and chemical properties such as optics, electricity, magnetism, mechanics, and heat. Different from the conventional properties in nanobelts and chemical converters, it can open the energy gap of graphene and increase the transmission current management ratio. Graphene is expected to be used in more industries in the near future [10]. Figure 1 shows the application schedule of graphene in displays and electronic devices.

In this paper, the change of PEG structure was detected and characterized by FT-IR spectra. The analysis of PEG, HO-PEG-OTs, and HO-PEG-N3 in this paper can help to understand the structure and display process of medical imaging system. Figure 2 shows the FT-IR spectra of PEG, HO-PEG-OTs, and HO-PEG-N3, respectively. Among them, 3440 cm-1, 2887 cm-1, and 1108 cm-1 are the O-H telescopic vibration absorption peaks of PEG, C-H telescopic vibration absorption peaks of methylene, and C-O telescopic vibration absorption peaks, respectively [11, 12]. In contrast, the FT-IR spectrum of HO-PEG-Ts not only has the characteristic absorption peak of PEG but also has two characteristic peaks of benzene ring skeleton vibration at 1648 cm-1 and 1594 cm-1. At the same time, the absorption peak of O-H stretching vibration at 3440 cm-1 obviously weakened, which indicated that the hydroxyl group at one end of PEG successfully reacted with p-toluenesulfonyl chloride to form p-toluenesulfonate. In the FT-IR spectrum of HO-PEG-N3, two peaks at 1648 cm-1 and 1594 cm-1 disappeared, but the characteristic absorption peak of azide group appeared at 2106 cm-1. It shows that the tosyl group of HO-PEG-Ts is replaced by azide group [13].

The amino group at the end of DSPE reacts with PEG modified by chloroformate to obtain DSPE-PEG conjugate. Its characterization was mainly carried out by FT-IR and nuclear magnetic resonance. Infrared contrast is shown in Figure 3. In the infrared spectrum of DSPE-PEG, the characteristic peaks of DSPE (2887 cm-1 and 2851 cm-1) and PEG (1111 cm-1) appeared. Therefore, we can judge that DSPE-PEG long-acting phospholipid was successfully synthesized, and its nuclear magnetic resonance further proved the structure of the compound. Among them, the peak at the chemical shift of 0.86 ppm is the methyl peak of DSPE, 1.23 ppm is the methylene peak of DSPE alkyl chain, and 3.51 ppm is the characteristic peak of polyethylene glycol.

Up to now, micronanomaterials can be derived from fiber structures such as ceramics and polymers, spherical structures, and tubular structures. However, the most common product of electrospinning is fiber structures. At present, there are two shortcomings in electrospinning technology: most fibers are nonwoven fabrics. The voltage required for the electrospinning process is very high. To expand the application of fiber in microelectronic devices, people have invented and developed many methods,

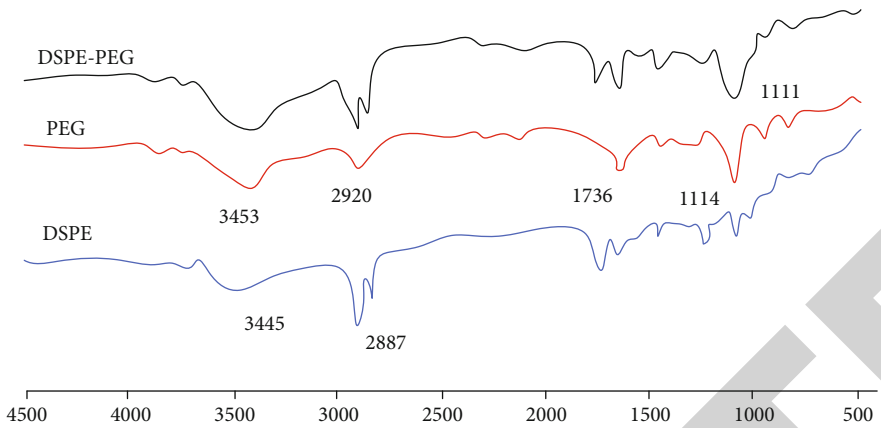

Figure 3: FT-IR spectra of PEG, DSPE, and DSPE-PEG.

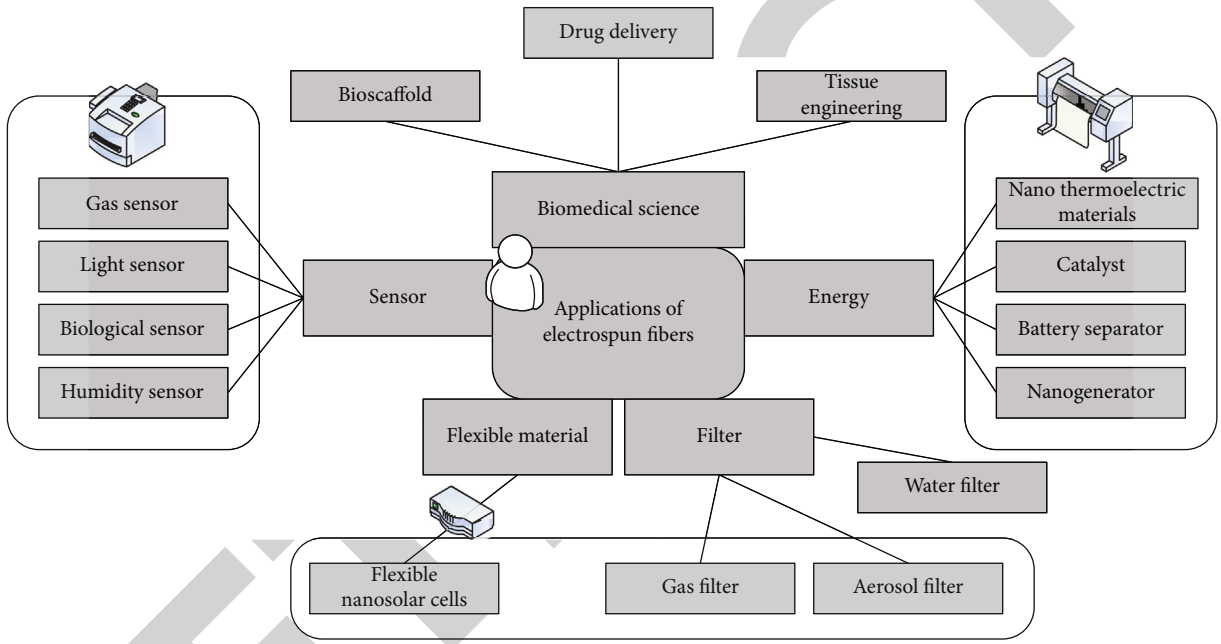

Figure 4: Various application areas for electrospun fibers.

including parallel double-electrode collection method and magnetic field electrospinning, to prepare micronanofibers [14]. By controlling the above experimental parameters, fibers with different morphologies such as coaxial structure, beaded structure, porous structure, red blood cell structure, ribbon structure, patterned fiber structure, spider web structure, and array structure can also be obtained [15]. Nonwoven fabric fiber is the most common fiber morphology. Electrospun fibers play an important role in the fields of sensors, filtering devices, tissue scaffolds, implant coating films, and wound dressings. As shown in Figure 4, there are many application fields of electrospun fibers [16].

Up to now, there are many methods to prepare nanomaterials, such as vacuum condensation method, ball milling method, chemical vapor deposition method, hydrothermal method, sol-gel method, spraying magnetron method, nanoprinting method, electrostatic spinning method, and template method. Sequential or random nanostructures can be obtained by these methods. These electrothermal technologies can produce long-sized nanofibers with uniform diameters and different compositions. Fibers can be organic or inorganic [17, 18]. The method has the characteristics of simple operation process and wide application. According to the physical state of nanomaterials, it can be divided into gas phase method, liquid phase method, and solid phase method. In recent years, hydrothermal method, magnetron spraying method, chemical vapor deposition method, and electric drying method have been adopted. Nanotechnology has attracted much attention because of its simple tools, low cost, high efficiency, and convenience. With the progress of science and technology, people have a deeper understanding of nanomaterials, and the application of nanomaterials in people's lives is also more extensive [19].

In today's society, which has stepped into the post-Moore era, devices are gradually developing towards the fields of multifunction, miniaturization, and flexible

wearable. As a representative, ZnO (ZnO) is a semiconductor material of group II-IV direct band gap compounds. It can be used as a display interface module for medical imaging systems. It is an ideal material for developing ultraviolet detectors, blue-ultraviolet light emitting devices, and blue laser. In addition, compared with Si, GaAs, and InP, ZnO has higher breakdown electric field, thermal conductivity, electron saturation rate, and radiation resistance due to its unique wide bandgap structure [20]. It is ZnO that has these excellent properties at the same time, which has aroused extensive research by researchers. ZnO fiber has special crystal structure, wide band gap, high breakdown electric field, high thermal conductivity, high electron saturation rate, high radiation resistance, and so on and has many excellent properties, which can emit blue-violet light. As a typical representative of the third generation semiconductor, ZnO has a very wide application prospect. For example, it can be used in blue LED, photodetector, flexible nanosolar cell, nanopiezoelectric material, ZnO arrester, and tester and can also be used to prepare ZnO carriers. In addition, it can also be used to make facial masks. Figure 5 shows the application picture of ZnO [21].

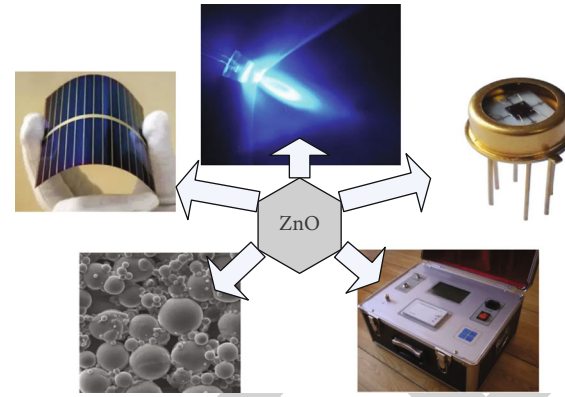

Figure 5: Application picture of ZnO.

However, these methods can only prepare ZnO thin films and short nanowires, which greatly limits the preparation of ZnO-based devices. Compared with other technologies, electrospinning technology has its unique advantages. For example, the device is simple, the cost is low, the applicable materials are wide, the modification is strong, the fiber morphology is diverse, and the specific surface area is large. In addition, it can prepare ultrathin fibers and long continuous fibers. Ce-ZnO prepared by electrospinning is spun. Long filiform ones have the advantages of large specific surface area, especially suitable for sensing applications and so on. In the literature on the properties and applications of electrostatically woven nanofibers, the application of electrospinning ZnO nanofibers is also very extensive, among which the representative applications are shown in Table 1.

PVDF has five different crystal phases, of which β phase has the best piezoelectric properties. In the process of electrospinning, the parameters such as voltage, polymer solution pushing speed, and boiling point of solvent are closely related to the formation of β phase PVDF. In order to study the influence of PVDF nanofiber membranes on the output performance of devices, it prepared a series of PVDF nanofiber membranes with different parameters and assembled them into devices for performance testing. Table 2 summarizes the parameters of these different samples. The definitions and dimensions of ZnO and PVDF are explained in the texts of Tables 1 and 2, and the display modules in the subsequent system architecture design are better constructed. Among these parameters, it changed the voltage and spinning time of electrospinning, and other constant parameters can be seen in the experimental part. When the spinning voltage is 12 KV, the α phase peak at 18.4° and 26.7° shifts to the β phase peak at 20.6°, showing an obvious broad peak at 20.1. This shows the transformation of PVDF from α phase to β phase during spinning. The output voltage results also show that when the voltage is 12 KV, the output value is the largest. In addition, the film thickness is also an important parameter that affects its output performance. As we know, for friction nanogenerators, the smaller the film thickness, the better the device output performance, while for piezoelectric devices, the increase of film thickness in a certain range is beneficial to the device output performance. Therefore, it is very important to find an optimal film thickness for PVDF film used as both friction material and piezoelectric material. PVDF nanofiber membranes with different thicknesses were prepared by controlling the spinning time. The thickness of PVDF film increases with the extension of spinning time. When the PVDF thickness is 145.3 μm, the maximum output voltage of 98 V is obtained. Therefore, the best preparation conditions are as follows: spinning voltage 12 KV and spinning time 2 h.

Figure 6 shows the XRD patterns of the prepared pure ZnO and cerium-doped ZnO nanofibers, which reflect the crystalline characteristics of pure ZnO and cerium-doped ZnO nanofibers. The clear diffraction pattern has higher peak position and narrower half-peak width, which indicates that pure ZnO and cerium doped ZnO have good crystallinity. XRD spectrum shows that pure ZnO nanofibers have hexagonal wurtzite structure (observed by JCPDS36-1451); the 2θ values of the strong diffraction peaks are 31.77°, 34.42°, and 36.26°, respectively; and the corresponding diffraction planes are (100), (002), and (101), respectively. Compared with pure ZnO, the diffraction peak of CeO2 (JCPDS34-0394) appears at the crystal plane (111) of $2\theta =$ 28.55° after cerium doping. Moreover, by comparing the XRD profiles of pure ZnO and cerium-doped ZnO, it can be seen that the peak position of cerium-doped ZnO has a small angle (~0.31degree) shift. The radius of cerium atom is larger than that of zinc atom, which will make the crystal lattice of ZnO larger. According to Bragg formula, the lattice parameters are related to the interplanar spacing d. With the increase of atomic radius, the diffraction peak shifts to a small angle. It shows that cerium ions are successfully doped into the crystal lattice of ZnO. XRD results show that the synthesized nanofibers are the mixed phase of hexagonal ZnO and cubic cerium oxide. In XRD pattern, except Ce element, there are no other peaks. Therefore, the prepared sample is a combination of high-purity hexagonal ZnO and cubic ceria.

Table 1: Diameters, properties, and applications of electrospun ZnO-based nanofibers.

Material	Fiber diameter/nm	Performance	Application
Cu-ZnO	100	HRP2 protein detection limit is 10 μg/ml	Biological sensor
ZnSe/ZnO	200	Short circuit current density 6.60 mA/cm^2. Maximum power conversion efficiency of 1.24%	Solar battery
ZnO/CNFs-PA	150	At a current density of 200 mAg-1, the capacity is 702 mAhg-1	Lithium ion battery
CuO-ZnO	312 183	The maximum adsorption capacity of Congo red dye is 126.4 mg/g	Shows significant antibacterial activity against Staphylococcus aureus
ZnO/PVA	200	Detection limit for NO2 is 10 ppm	Sensor
PVDF-HFP/Co-ZnO	300	Maximum output voltage 2.8 V	Nanogenerator
ZnO/Al2O3/AuNPs	200	Detection limits of 0.19 μM and 15.0 μM for tea phenol and hydroquinone, respectively	New sensor (detection of tea phenol and hydroquinone)
TMCNF/ZnO	200	Ultrafast cycling stability (452 mA hg−1 after 500 cycles)	Lithium ion battery
PA6/PPy/ZnO	80	Urea detection limit is 0.011 mg DL−1	Biological sensor
ZnO/PU	250	Improve photocatalytic efficiency	Organic pollutant degradation and wastewater purification

Table 2: Dimensions of PVDF nanofibers electrospun with different process parameters.

Sample	Applied voltage (KV)	Applied time (h)	Diameters of nanofibers (nm)	Thickness of the film (μm)
1	10	1	180	68
2	12	1	160	68
3	14	1	152	68
4	16	1	122	68
5	18	1	123	68
6	12	0.5	160	37
7	12	1.5	160	97
8	12	2	160	145
9	12	3	160	189

Although the physical conditions of different materials are different, the thermal conduction modes are different due to different compounds. There are also significant differences in thermal conductivity. However, in different states of matter, one thing is similar, that is, heat in matter is transferred by collision and particles. The thermal conductivity κ of all solids can be directly expressed as the thermal conductivity of atomic gas as a thermal conductor, namely,

$$K = \frac{1}{3} C v \Lambda. \tag{1}$$

Among them, C represents thermal conductivity of the solid per unit volume. V represents the average velocity of hot carrier movement per unit volume. Λ represents the mean free path of hot carrier movement per unit volume.

$$f = \frac{1}{e^{hwIk} - 1}, \tag{2}$$

$$U = \sum_{i=1}^{3N} \frac{hw}{e^{hwIK_B T} - 1}. \tag{3}$$

Assuming that the number of vibration modes of the crystal with a given polarization mode is $D(\omega)d\omega$ in the frequency range of $\omega + d\omega$, the formula can be changed into integral form:

$$U = \int \frac{hw}{e^{hwIk_B T} - 1} D(w) dw, \tag{4}$$

$$C = \frac{dU}{dT} = \frac{3Vh^2}{2\pi^2 v^3 k_B T^2} \int_0^{wD} \frac{w^4 e^{hw/r}}{\left(e^{hw/r} - 1\right)^2} dw. \tag{5}$$

The relaxation time of phonon scattering is a function $\tau(\omega)$ related to phonon frequency. According to the empirical formula of scattering probability of inverse scattering between phonons, impurity scattering, and boundary scattering, the relaxation time of inverse scattering can be obtained as follows:

$$\tau_{umkl}^{-1} = B_1 w^2 T \exp\left(\frac{-B_2}{T}\right), \tag{6}$$

$$\tau_{imp}^{-1} = A_1 w^4, \tag{7}$$

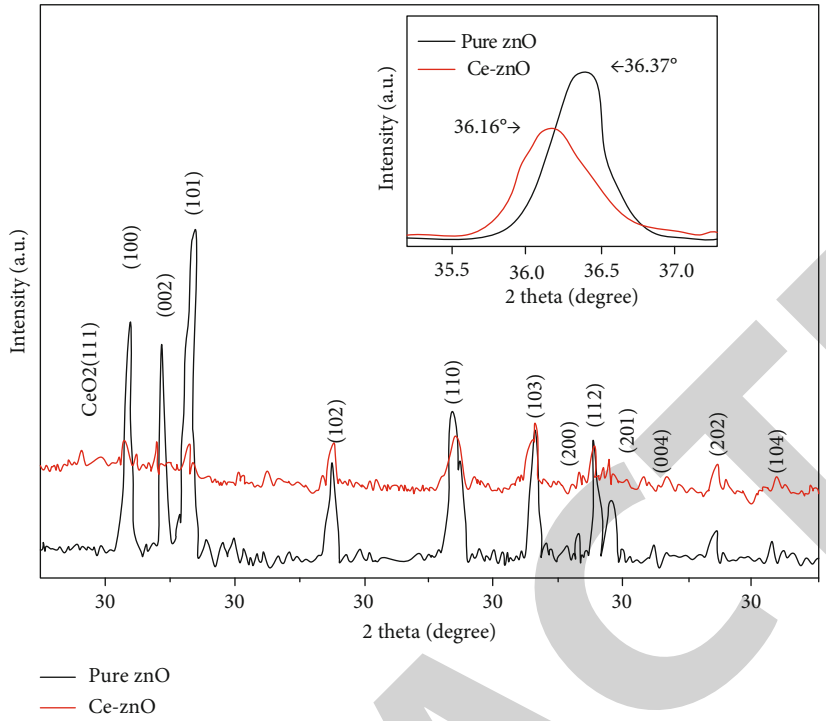

Figure 6: XRD patterns of pure ZnO and Ce-ZnO nanofibers, the inset is an enlarged view of the (101) diffraction plane.

$$\tau_{bdy}^{-1} = \frac{v_g}{L}, \tag{8}$$

$$\tau_{tol}^{-1}(w, T, L) = \tau_{umkl}^{-1}(w, T) + \tau_{imp}^{-1}(w) + \tau_{bdy}^{-1}(L), \tag{9}$$

$$\Lambda_{eff}^{-1}(w, T, L) = \Lambda_{umkl}^{-1}(w, T) + \Lambda_{imp}^{-1}(w) + \Lambda_{bdy}^{-1}(L). \tag{10}$$

The longitudinal acoustic lattice wave (LA) and the transverse acoustic lattice wave (TA) are not distinguished, and the thermal conductivity of germanium at low temperature is well predicted. Callaway model considers isotope impurity scattering, inverse scattering, normal scattering, and boundary scattering, respectively; and the expression of relaxation time is

$$\tau_C^{-1} = \tau_I^{-1} + \tau_U^{-1} + \tau_N^{-1} + \tau_b^{-1}, \tag{11}$$

$$Aw^4 + B_U T^3 w^2 + B_N T^3 w^2 + \frac{c}{L}, \tag{12}$$

$$Aw^4 + (B_U + B_N) T^3 w^2 + \frac{c}{L}. \tag{13}$$

Holland model is an extension of Callaway model. Different relaxation time approximations are adopted, so that the calculated results can accord with the experimental results at high temperature. The formula for calculating the thermal conductivity of Holland mode is

$$K_H = K_L + K_T, \tag{14}$$

$$KL = \frac{1}{3}\int_0^{\theta r/T} \frac{C_L T^3 x^4 e^x (e^x - 1) dx}{\tau_L^{-1}}, \tag{15}$$

$$KT = \frac{2}{3}\int_0^{\theta r/T} \frac{C_L T^3 x^4 e^x (e^x - 1)^{-2} dx}{\tau_L^{-1}}. \tag{16}$$

This indicates the contribution of the two transverse acoustic lattice waves TA to the thermal conductivity. When Holland model calculates the relaxation time, the thermal conductivity of LA is integrated in the whole frequency range:

$$\tau_L^{-1} = \frac{v_b}{FL + Aw^4 + B_L w^2 T^3}, \tag{17}$$

$$\tau_T^{-1} = \frac{v_b}{FL + Aw^4 + B_T w T^4 (w < w_1)}, \tag{18}$$

$$\tau_T^{-1} = \frac{v_b}{FL} + Aw^4 + B_T w T^4 + \frac{B_{TU} w^2}{\sinh x(w1 < w < w2)}. \tag{19}$$

The SW potential of silicon contains a two-body potential term and a three-body potential term, and the specific expression is

$$u_3(r_i, r_j, r_k) = \varepsilon\left[h(r_{ij}, r_{ik}, \theta_{jik}) + h(r_{ji}, r_{jk}, \theta_{jik}) + h(r_{ki}, r_{kj}, \theta_{ikj})\right]. \tag{20}$$

It can be seen from the above that such formulas related to thermal conductivity can help the construction of the LCD display interface in the health promotion system.

Table 3: Segmentation results of the segmentation model.

Soccer-men	Number of people	Soccer-women	Number of people	Yoga-male	Number of people	Yoga-female	Number of people
Cluster 1	66	Cluster 1	31	Cluster 1	24	Cluster 1	52
Cluster 2	29	Cluster 2	19	Cluster 2	17	Cluster 2	38
Cluster 3	20	Cluster 3	15	Cluster 3	15	Cluster 3	23
Cluster 4	11	Cluster 4	12	Cluster 4	10	Cluster 4	15
						Cluster 5	10

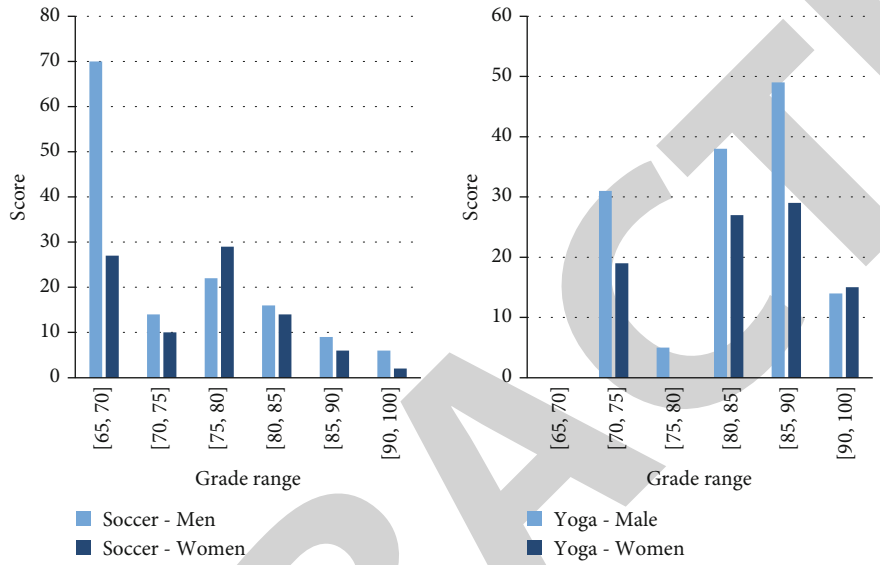

Figure 7: Number distribution of grade predictions.

4. Health Promotion System Experiment

Two common items, football and yoga, were selected in the experiment. Through nanotechnology, health promotion and health examination decision-making are studied. The former focuses on the quality of endurance and strength, while the latter focuses on the quality of practicing soft keys. The subjects were 137 males and 90 females. The hypothesis of this study is that students with higher endurance and strength qualities are more likely to get high scores in football matches, while students with flexible choice qualities are more likely to get good results in yoga activities. The main purpose of the experiment in this section is to establish the performance prediction model of health promotion and predict the results of these two items for the theme experiment to verify the accuracy of the hypothesis. It randomly selects the historical data of 136 men and 77 women in a football project and 66 men and 138 women in a yoga project to build the performance prediction models of the two projects. Through correlation analysis, it is found that the test indexes with higher correlation coefficient with football performance are step test and long standing jump. The test index with higher performance correlation coefficient of yoga is forward flexion, which is consistent with the results of the questionnaire. When building the partition model, the four data sets are divided into 4, 4, 4, and 5 subsets, respectively. To verify the health promotion model, Table 3 shows the division of the subdivision model.

On this basis, a performance prediction model is established for each subset of men's soccer, women's soccer, yoga men, and yoga women. The physical fitness data of these students have been used to verify the model. Of the four data sets, only one, two, and three made accurate predictions, with the accuracy rates of 99.2, 95.5, and 97.8%, respectively. The physical health data of 37 males and 90 females were included in the prediction model with the same degree to predict the performance of each student in health promotion activities. The results are shown in Figure 7. Therefore, the result of achievement prediction is consistent with the level of students' physical quality.

From the comparison of events, the expected performance of yoga events is higher than that of football events, because students' soft back quality is better than endurance and strength quality. From the comparison of men and women, the performance of women's football is better than that of men's football. Although men are usually less flexible than women, their yoga performance is not inferior to that of women. The reason may be that the gender orientation in football and yoga is obvious. Teachers will take care of disadvantaged gender groups and give them higher scores. This has a certain influence on the results of the health promotion system under nanotechnology. The results of data standardization are shown in Figure 8 and Table 4.

There are 1, 2, 3, and 4 categories. In terms of male or female, the degree of similarity is similar to normal distribution. The more equal the classification of boys, the greater

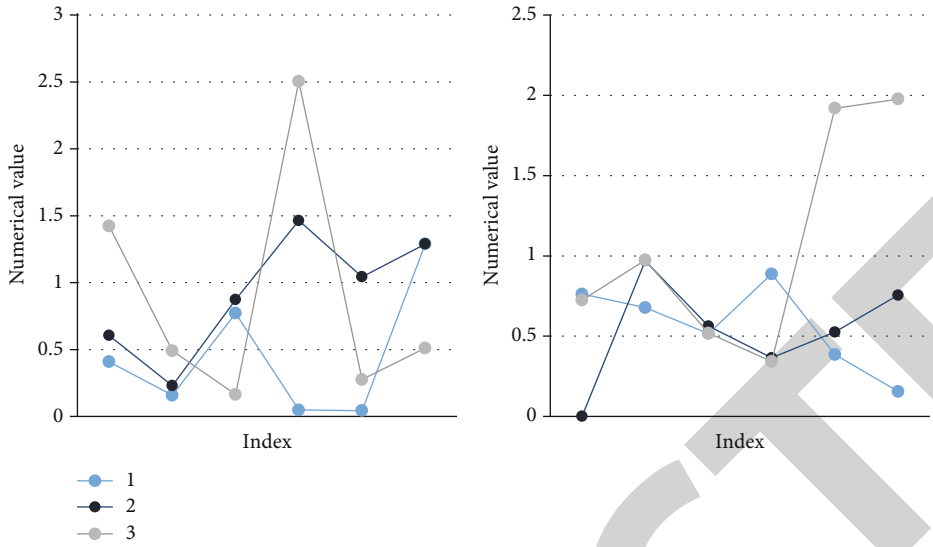

Figure 8: Sample data normalization.

Table 4: Effects of nanosystems on health promotion.

	Z height	Z weight	Z lung capacity	Z balance ability	Z body composition	Z cardiovascular
Male						
1	0.81401	0.85614	0.12564	0.36451	1.31456	0.53122
2	1.61914	1.03153	0.25612	0.24561	0.08312	0.23641
3	0.40257	0.95212	0.23152	1.13212	0.42312	1.05641
4	1.21362	0.22314	2.32212	1.61251	0.64652	0.51312
5	2.63296	0.22315	0.38515	0.16965	1.06315	2.84165
6	1.82162	2.54512	0.56123	0.05561	3.31322	0.51233
7	0.00214	0.95451	1.75123	0.26341	0.75612	0.26452
Female						
1	0.13564	0.45612	0.54522	0.39231	0.56123	0.75562
2	1.34561	0.15532	0.72131	1.00324	0.59221	0.75562
3	1.36123	0.28512	1.12356	0.15633	0.35121	1.65612
4	0.75132	2.35612	0.43221	0.34551	2.61521	0.75612
5	0.35641	0.69122	0.00656	0.67512	0.27512	0.75612
6	0.94512	1.24562	1.54233	0.54512	0.68963	0.75612
7	0.75212	1.23136	0.86312	0.34752	1.30312	1.95612

the difference between girls. The figure clearly shows the number of each type and the difference between the sexes. This is important because the classification and analysis of the variable table can be used to evaluate whether the type is reasonable. After the differential function is detected, the formula $Xi = (X1i, X2i, X3i, X4i, X5i, X6)$ is normalized. To obtain the required difference, it is necessary to compare it with the value of Y and classify the scores according to the rules. In this study, boys are used as case studies. According to the boys of four classes, five data sets of 20 people were selected, and the first data was normalized (Figure 9).

Then discriminate and predict the data (as shown in Figure 10).

First of all, according to the different data units of the training samples, this paper is dedimensioning, that is, standardization. Then, SPSS software is used to quickly cluster the standardized data. Finally, Fisher linear discriminant function is obtained, and the classification model is constructed. In Figures 9 and 10, the probability of dividing men and women is 99.3% and 99.2%, respectively, which indicates that the distribution model has a high probability of distribution results. Finally, according to the existing samples' 1, 2, 3, and 4 categories, this cycle is obtained, and a total of 20 model cycles are tested by the difference program. The correct rate was 99.5%. As long as the six types of information and their corresponding numerical values are standardized and modeled, the model can be inspected. Moreover, the six indicators proposed in this study have not been combined with the research. Samples measure the internal characteristics of the human body. Based on the

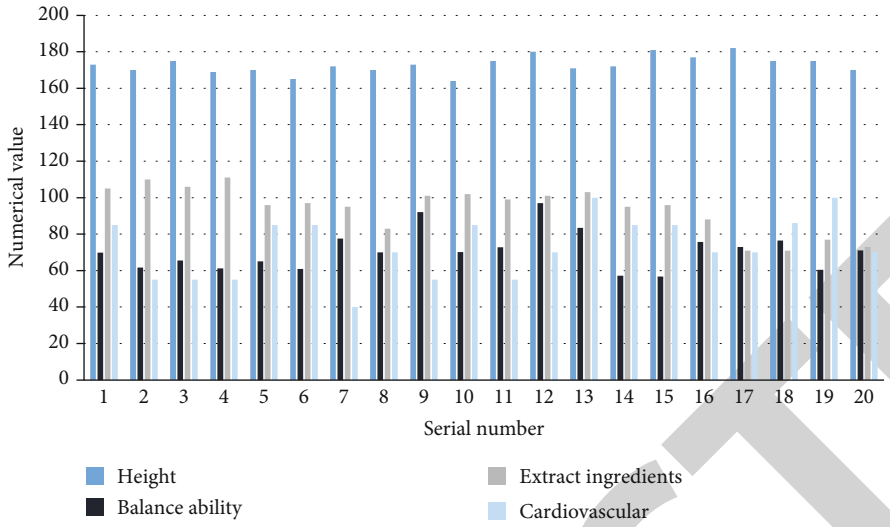

Figure 9: Standardization of sample data to be tested.

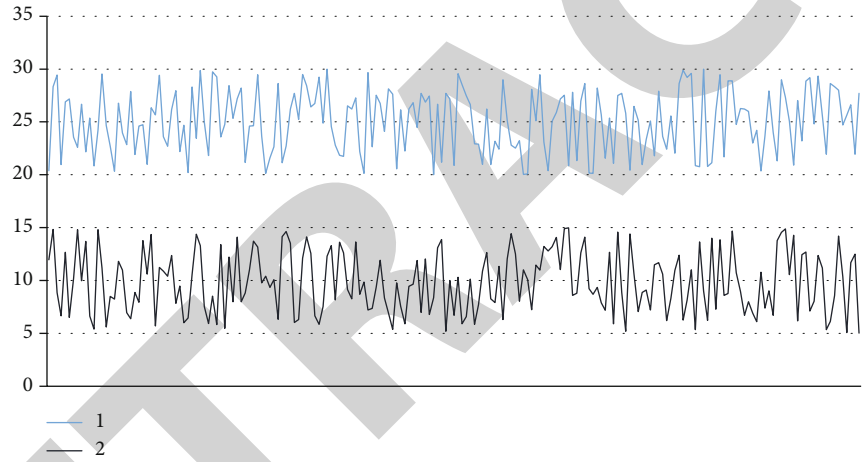

Figure 10: Sample prediction results.

intelligent health promotion service system, the corresponding index data of human body can be measured by simple instrument operation. It not only simplifies the process of obtaining test data but also reduces human error, which provides important scientific and technological support for studying physical health. Through the above data analysis, it can know that the physical health of boys is evenly distributed, which accords with normal distribution, while that of girls is unevenly distributed, showing a trend of two-level differentiation. As the social rhythm continues to accelerate, the pressure on students becomes more and more. For a long time, it has formed bad living habits, such as excessive intake of fat and calories. In addition, the structure of food is not very reasonable, and there is a lack of adequate physical exercise, which leads to physical deterioration, great influence on physical health and polarization. This needs attention. Therefore, it must pay more attention to the problems of physical health and adopt practical and feasible countermeasures to further improve the physical health in the actual process. This model can be used to comprehensively evaluate the physical health of individuals and groups. In the process of applying this model, it is only necessary to standardize all kinds of index values actually measured by each individual into the corresponding model for calculation, so that the physical health level of an individual or a group can be obtained. The establishment of the grading model avoids the score according to each item in the standard. It then uses the weight to calculate the total score in this complicated process. To some extent, this simplifies the operation procedures, achieves the goal of simplicity, and then makes the evaluation results very clear and effective.

5. Discussion

Through the analysis of the model of the article, the article constructs the health promotion system from the aspects of physical quality, skills, and shape; tests the physical health data; realizes real-time analysis; and gives warnings. The early warning mechanism accurately provides health

information and is supplemented by early warning statement. This kind of early warning statement is predictive, and if individuals are allowed to develop continuously, physical health may be damaged. According to the warning statement, targeted prevention and exercise can effectively avoid this kind of future harm. The health examination management system introduced in this paper is based on the actual application requirements of the physical examination institute of the Center for Disease Control and Prevention. It is developed by Delphi and SQL server 2000. Through the comprehensive application of data analysis, data encryption, software reuse and other technologies, and information maintenance, it perfectly shows the modular design idea, and at the same time, it integrates the management mode of modern CDC physical examination center into it. The system has the characteristics of strong practicability, good real-time, high work efficiency, and easy data maintenance, which has brought higher economic benefits and good social reflection to the physical examination of center for disease control.

This paper designs the input module and physical examination and perspective module. The result is automatically judged. Single-particle imaging and single-particle spectroscopy based on the optical properties of metal nanoparticles, with nanoscale spatial resolution and millisecond temporal resolution, have become important tools for studying the behavior and function of biomolecules at the single-cell level. It uses bar code to scan and input the whole process, which simplifies unnecessary time in work. It provides users with a variety of flexible access methods. Customized human search object function, powerful demand function, and statistical analysis function help users easily understand daily tasks and problems and calculate relevant information. Data from the health screening system have been analyzed and evaluated by nanotechnology and medical promotion verification data, providing detailed data of disease prevention. The advantages of this system include developing a suitable C/S search engine, which is convenient and fast to use, improving the efficiency, improving the running speed of SDC, and realizing the verification data to test the physical form. It improves the speed and efficiency of data retrieval, the sorting of selection and record results, the sorting of people and laboratories, and the combination of physical screening software and verification tools to ensure that data will not be lost. It simplifies the workflow of SDC, improves performance, and provides detailed information during data analysis. Due to the limitation of resources, time, hardware, or other conditions and the standardization of medical information disclosure, there is no integration between the standardization of CDC management model and the standardization of information system model, and the system still has a lot of room for development. Even if there is relatively complete physical examination data, more detailed data mining research is needed. The system design should also fully consider the future upgrade and expansion of the system to promote the integration of the existing system and the proposed system. This system only realizes the interface with some inspection instruments, and it needs to reserve interfaces for other system equipment.

In view of vital capacity and cardiovascular index, according to relevant research, the vital capacity and maximum oxygen uptake of human body are closely related to body weight, height, body surface area, chest circumference, and sitting height. Therefore, according to different gender, age, race, region, and different types of sports groups or individuals, comparing and analyzing this index of vital capacity, and carrying out quantitative analysis on it, it can objectively reflect the differences among different individuals and carry out evaluation. Body mass index, the individual's fatness, and thinness directly affect the level of physical health. One of the criteria to measure the individual's weight is the height and body mass index (BMI). According to the BMI value, it can know the fat and thin level of individual figure. Therefore, the new early warning indicators in this paper still retain the height and weight indicators, body composition, and balance index. Body composition includes internal indexes related to physical health level, such as bone density and muscle. It can reflect the existing level of each index inside the body of the tested person and the ability of balance and coordination. Balance ability is to analyze the individual balance ability through the completion result of a given action. If the two indexes of body composition and balance ability are too low, early warning is needed so as to exercise pertinently and improve the physical health level.

6. Conclusion

Health promotion is the process of improving the health status of different groups of people. It improves people's lifestyle by means of sports intervention. It promotes the formation of healthy sports knowledge, improves the sports environment, and improves the quality of life. Health promotion system is a service and safety system that can provide sports health services for people, improve sports health, promote environmental conditions, meet the scientific needs of human health, and improve people's quality of life and health level. The goal system of sports promotion is to form healthy sports knowledge, including the formation of sports positive attitude, sports true values, and emotional sports positive experience. Sports lifestyle includes reasonable sports lifestyle, colorful sports activities, and sports content. The formation of a healthy sports environment includes the development of sports facilities, the formation of a strong institutional network, the formation of a good sports atmosphere, and other components. Health promotion action system includes raising residents' awareness of sports, encouraging residents to improve sports, shaping sports lifestyle, and improving sports environment. The safety system of sports promotion includes organizational guarantee, talent guarantee, fund guarantee, and facility guarantee. This is the guarantee for the smooth operation of the sports health promotion operation system and the realization of the sports health promotion purpose. Community organization network is an organization and operation organization that cooperates with sports health promotion association, individual community sports association, and community sports associations led by various committees

to promote community health. This paper basically realizes the medical image transmission and storage system based on ultrasonic equipment. However, there are still some problems in this system due to various reasons such as short development time and insufficient manpower. Therefore, in order to become a mature and stable system and put it into hospital use, it should continue to improve the problems existing in the system. The following aspects need to be completed. The encryption algorithm involved in the system only refers to the method of regular expression matching when the user logs in. Therefore, there are not many encryption algorithms used in the system, which leads to the low security performance of the system. Therefore, the following work needs to study the knowledge related to software encryption. The encryption algorithm is used in the programming that the system needs to be encrypted to improve the security of the system to prevent malicious damage by illegal personnel. The system needs to generate standard DICOM files for the transmission and storage of medical images, such as images collected by video acquisition card, patient basic information, examination information, and diagnosis information. The analysis and format conversions of DICOM files are involved when the patient history examination needs to consult DICOM files. In order to realize the above two aspects, this paper uses the executable file in DCMKT. However, the files in DCMKT are not flexible enough to realize the system functions accurately. Therefore, in the following work, it is necessary to reduce the reference to the executable files in DCMTK and fully grasp the DICOM protocol. Using c++ programming language to develop DICOM can accurately realize the functions required by the system. The actual use of the hospital needs to be integrated with the hospital information system, health examination information management system, and other information systems. Due to the lack of actual installation test in the hospital, this system has poor compatibility and can only be used as an independent system. Therefore, in the following work, according to the HIS system and health examination information management system of the hospital, the data interface between medical image reporting system and HIS system and health examination information management system is designed and implemented, so that the medical image reporting system can exchange data with HIS system and health examination information management system.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

Authors' Contributions

Fangjiang Zheng and Jie Zheng are co-first author.

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