Design and Application of Mental Health Intelligent Analysis System for College Students Majoring in Physical Education

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Abstract. In today's society, whether in business life or in private life, establishing relationships with friends and acquaintances effectively emphasizes the important role of Esq. As a person with high EQ, he should provide self-identity and proof needs, pay attention to consumption and insufficiency, control his temper, and establish relationships with friends and acquaintances. In this study, sports colleges and sports major students as the research object, to compare their multiple intelligence fields. Starting from the connotation of EQ and the analysis of EQ of independent college students, this paper puts forward that physical education is the only way to cultivate students' EQ, and puts forward suggestions that physical education should cultivate college students' self understanding ability, self motivation ability, self-control ability and self-control ability, so as to resist setbacks. Comparison method and non intelligence scale were used. A questionnaire survey was conducted on college students, and their life experience, self-esteem, self-confidence and hope were evaluated. Self reported self-esteem, self-confidence and stress levels are used to distinguish between resilient and inelastic students. The results show that the minimum support of a is 25%, the minimum confidence is 9%, and the number of association rules is 213; the minimum support degree of B is 16%, the minimum confidence is 16%, and the number of association rules is 194.

Keywords: Physical Education, College Students' Mental Health, Intelligent Analysis, Health Design

1. Introduction

With the continuous development of science and technology, computer technology has become an indispensable part of our life. Since mental disorders usually occur throughout life, maintaining mental stress and well-being can play an important role. The purpose of this study is to explore the relationship between mental health and mental health of college students. As an important part of College Students' study and spare time life, physical exercise can effectively promote the development of College Students' mental health.

With the continuous progress of Internet technology, many experts have studied intelligent
technology. For example, some Chinese teams have studied the role of physical exercise in promoting healthy behavior, analyzed the role of physical exercise on the development of College Students' mental health from both internal and external aspects, and put forward suggestions on how to play this positive role. This paper describes and analyzes the current situation of sports application, and classifies and defines the concept of sports. Through on-line and off-line questionnaire survey, this paper makes a preliminary study on the use of sports application. Through the analysis of survey data and interview results, this paper discusses sports, summarizes the existing problems and future development direction, whether the self presentation of college students in social network and the use of sports application in real life have media dependence and health belief To explore the value of health behavior communication. The propagation process and strategy of class application [1-3]. Some experts have studied the impact of fitness app on College Students' physical health in Michelangelo Province. Through the investigation and comparative analysis of the people who use fitness app, it is found that the students who apply the app have more professional exercise skills and higher fitness enthusiasm. Therefore, fitness app can be judged that it has a significant positive impact on Enhancing College Students' physical exercise ability and enthusiasm, urging college students to exercise, learning exercise methods, improving sports skills, statistics of physical exercise data records, making friends and exchanges, video teaching, etc. among them, the core function of College Students' application of this kind of APP reflects the speed of the subjects' physical exercise test, the speed of their physical fitness test, and the improvement of their sports skills Endurance and explosive direction. Through the experimental intervention and comparison, the test scores of college students have been significantly improved. Through the comprehensive analysis of the test results, the fitness app can effectively improve the fitness level of colleges and universities. It is suggested that college students should reasonably arrange their own exercise time, use fitness app, reasonable and effective sports fitness plan, according to their own situation, targeted application of fitness app function, adhere to physical exercise, and enhance physical fitness [4-6]. Some experts have studied the design and application of College Students' health intelligent analysis system. In this paper, through consulting the relevant literature of data mining technology in this field at home and abroad, this paper analyzes and summarizes the research status in this field, and puts forward its own solutions. In the aspect of cause analysis of mental health problems, comprehensive use of a variety of data and association analysis technology for deep mining and analysis, so that the analysis results are more reasonable and effective. The basic principle of data mining and data warehouse, clustering analysis method, exception mining method and association rule algorithm are analyzed in detail. Then, an anomaly mining algorithm based on clustering is designed to quickly find the abnormal data from the mental health problem data of college students. In the aspect of cause analysis, association rule algorithm is used to predict the test data set, mainly analyzing the internal relationship between mental health problems and attributes. According to the actual data for cause analysis, can provide a reliable basis for psychological educators, so as to improve the efficiency and effect of school psychological consultation work [3]. Although there are many achievements in the research of College Students' mental health, there are still some deficiencies in the design and application of the mental health intelligent analysis system for sports majors.

In this paper, in order to study the design and application of the intelligent analysis system for the mental health of the students majoring in physical education, through the study of the intelligent technology, the personal health risk assessment model is found. The results show that the intelligent analysis system is convenient and conducive to the analysis of College Students' mental health.

2. Method

2.1. Intelligent Technology

(1) Intelligent technology

There are four macro learning methods: neural network and neural network. Statistical methods can be divided into regression analysis, discriminant analysis, cluster analysis, exploratory analysis, etc.;
machine learning methods can be divided into induction learning method, case learning method, genetic algorithm, etc. Neural network method can be divided into positive neural network and self-organizing neural network; database method can be divided into multidimensional data analysis, OLAP technology, attribute oriented induction, etc. In intelligent technology, statistical methods can be used to mine data sets. The main idea is to use statistical methods to simulate a specific model for a given data set, such as distribution model, probability model, etc. on the basis of this model, the specified method can be used for data mining [6].

(2) Artificial neural network

The basic processing unit of artificial neural network is neuron, also known as node. Artificial neural network is a widely parallel network composed of these neurons. The classical neuron model is M-P model, which can reflect the functional and structural characteristics of biological neurons to a certain extent. The adjustment of network weight is the learning process of neural network. The main learning methods are: supervised learning, unsupervised learning, supervised and unsupervised mixed learning, rote learning and so on.

(3) Data mining technology

In data mining, statistical methods can be used to mine data sets. The main idea is to use statistical methods to simulate specific models for a given data, such as distribution model, probability model, etc. based on this model, the specified method can be used for data mining [7-8]. The three parts of evolutionary computation have the same goal and idea in the process of solving, and all of them are looking for the optimal solution. It is a new tool for dealing with uncertainty. Rough set theory is becoming more and more mature [9-10]. In the theory of fuzzy sets, membership degree is used to represent the intermediate transition of difference, and the description of fuzziness is realized with precise mathematical language. Fuzzy set theory is also applied to cluster analysis, classification problems, rule-based systems and so on.

(4) Personal Health Risk Assessment Model

Input personal information into the model, combined with the characteristics of the project and time perception, the health evaluation score is obtained after calculation, which provides reference for users. Therefore, through the establishment of the digital virtual model, we can accurately infer the scope of disease possibility of the research object, and then get the possible risk factors. Therefore, the general process of personal health risk assessment is as follows: first, establish the assessment deduction model. According to the calculation scheme, the calculation formula is determined, and the characteristics of the possible influencing factors are determined by analyzing the specific scores derived. In the analysis, the calculation model is shown in formula (1):

$$RP = \frac{\sum_{i=1}^{n} X_i}{\sum_{i=1}^{n} \text{Max}(X_i)}$$

(1)

The main data included waist circumference, sleep time, waist hip ratio, diastolic blood pressure, systolic blood pressure, sitting time and breakfast time. For example, we select the heartbeat data of a bracelet mobile phone as the research object, and the demonetization of heartbeat is expressed by formula (2):

$$\text{scr}(t) = \begin{cases} -1, & (n < 60) \\ 0, & (60 \leq n \leq 80) \\ 1, & (80 \leq n \leq 100) \\ 2, & (n > 100) \end{cases}$$

(2)

The data items included medical behavior history, two-week medication history, tumor, tooth brushing, smoking and drinking. Through the analysis, the relationship between drinking data items is as follows (3-4):
\[scr(x2) = \text{sum}(\text{family} - \text{history} - \text{gro})\]  
\[scr(x3)\begin{cases} 0, & \text{count}(\text{drink}) = 0 \\ 1, & \text{count}(\text{drink}) \neq 0 \end{cases}\]  

3. Experience

3.1. Experimental Object Extraction
In the limited time to do more in-depth research, we need to define a most valuable research scope. Through the previous literature research and social scene analysis, we can basically determine that the physical space attribute of the current office scene is open office layout. Therefore, qualitative research is based on VDT office environment employees. According to the analysis of the impact of social scene on organizational scene, the current society tends to be flat organization. Therefore, qualitative research focuses on employees in IT industry and design service industry with relatively flat organization.

3.2. Experimental Analysis
Using observation method and in-depth interview method to conduct user survey, the purpose is to observe and excavate the health-related activity characteristics and human-computer interaction behavior characteristics of respondents in VDT office environment. Then, through in-depth interviews, we can find out the reasons behind these activities and behaviors, that is, what causes users to feel uncomfortable, how they usually deal with this discomfort, why they have not changed the uncomfortable state, etc. In order to explore the causes and related factors of user health problems in VDT office environment, as well as possible solutions. It provides a practical research basis for design principles and strategies. The whole research is divided into two parts: observation and in-depth interview. The basic composition of observation log is the observation record and analysis around users. Due to the tight time between observation and in-depth interview, the observation log needs preliminary analysis of the observation content.

4. Discussion

4.1. Motivation and Occasion of Taking Part in Physical Exercise
The main reason for taking part in physical exercise is to improve health, optimize body shape, regulate emotions, reduce pressure, improve learning efficiency, etc., which shows that social competition is intensifying, and the pressure from study and life is gradually increasing. We found that the cost of sports is low, and the way to get high health effect after exercise is to reduce pressure. The emotional needs of satisfaction theory can relieve the pressure in sports and release emotions. There are also a small number of people who participate in sports because of making friends, which makes sports more interesting. Most stadiums and gymnasia are campus stadiums and gymnasiums. Among the interviewees with less exercise frequency, the reasons why they seldom take part in physical exercise are shown in Table 1.

| Cause analysis                        | data |
|--------------------------------------|------|
| There is not enough time             | 12%  |
| School sports facilities are not     | 21%  |
| complete                             |      |
| Not enough willpower                 | 32%  |
| No hobbies                           | 8%   |
| Exercise without a playmate          | 27%  |

It can be seen from the above that 12% of the students take part in sports because they don't have enough time to do exercises, 21% of them take part in sports because the sports facilities in the school
are not complete, 32% of them are lack of willpower, and 8% of them are interested in sports. The proportion of exercise without playmates was 27%. The results are shown in Figure 2.

![Figure 1](image)

**Figure 1.** Statistical chart of the reasons for infrequent physical exercise

It can be seen from the above that the proportion of people who take part in sports exercise is the largest because of their lack of willpower, and the proportion of those who take part in sports exercise because they have no interests and hobbies is the smallest.

4.2. Association Rule Mining

Through the abnormal data mining, we can understand the scores of each college student in various aspects, that is, the projection value of each data object in ten factors, and the comprehensive mental health status. At this time, we can set the corresponding 10 Tags of the rule class. However, the scores of these ten factors can only reflect part of the time performance of college students. Some small problems of college students need to be solved by themselves. What are the reasons for the "serious" or "obvious" situation of college students. Before mining association rules, we need to determine two parameters, namely the minimum support threshold and the minimum confidence threshold. It should be pointed out that few college students have "serious" or "obvious" mental health status, which brings difficulties to the excavation work. No matter how small the minimum support threshold or the minimum confidence threshold is set, the rules obtained are not ideal. As shown in Table 2.

| type                  | A    | B    | C    | D    | E    |
|-----------------------|------|------|------|------|------|
| Minimum support threshold | 25%  | 16%  | 19%  | 24%  | 16%  |
| Minimum confidence threshold | 9%   | 16%  | 30%  | 17%  | 28%  |
| Number of association rules | 213  | 194  | 217  | 196  | 203  |

From the above, the minimum support threshold of A is 25%, the minimum confidence threshold is 9%, and the number of association rules is 213; the minimum support threshold of B is 16%, the minimum confidence threshold is 16%, and the number of association rules is 194; the minimum support threshold of C is 19%, the minimum confidence threshold is 30%, and the number of association rules is 217; the minimum support threshold of D is 24% and the minimum confidence threshold is 17% The minimum support threshold of E is 16%, the minimum confidence threshold is 28%, and the number of association rules is 203. The results are shown in Figure 2.
Figure 2. Minimum support threshold
From the above, the minimum support threshold of A is the largest, and that of B and E is the same.

5. Conclusion
In the current employment crisis, the employment of college students has become a hot issue. The change of employment situation will inevitably lead to the change of College Students' employment psychology. College students show anxiety, inferiority, pessimism, indifference and dissatisfaction. How to correct these errors is a hot issue. There are many factors causing these bad psychology, including external factors and internal factors. Based on the questionnaire survey of college students majoring in physical education and other students, this paper studies the different reactions of college students to sports from the aspects of body, compulsion, interpersonal sensitivity, depression, anxiety, hostility, fear, paranoia and mental illness. According to the special reflection of generality, this paper discusses the realistic influence of College Students' psychology and movement logic. Objective to explore the effect of physical exercise on mental health of college students. This study takes a group of college students as the research object, which is divided into exercise group and non exercise group. The results show that, on the one hand, exercise has a direct effect on promoting mental health; on the other hand, exercise can indirectly relieve stress, improve interpersonal relationship and regulate emotions. In a word, taking part in sports can help students reduce their pressure.

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