Study on Factors Influencing Sleep Quality

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Abstract: There are many indicators that affect the quality of sleep, among which the most significant ones are Psychoticism, Reliability, painting, Character and age. By considering the correlation between these indicators and sleep quality, as well as the correlation between People's Daily sleep habits and mental diseases, this paper constructed relevant models and found the correlation between various factors affecting physical health and sleep.

Keywords: Factors; Influencing; Sleep; Quality

1. Introduction

There are many indicators that affect the quality of sleep, among which the most significant ones are Psychoticism, Reliability, painting, Character and age. By considering the correlation between these indicators and sleep quality, as well as the correlation between People's Daily sleep habits and mental diseases, this paper constructed relevant models and found the correlation between various factors affecting physical health and sleep.

Firstly, reliability analysis is used to obtain effective data. The relationship between the quality of sleep and each index is concluded by the effective data. The correlation matrix between Reliability, Psychoticism, loyalty, Character and age was analyzed by principal component analysis, and the correlation rule was obtained. In order to get the relationship between diagnosis and sleep, we need to use problem one to establish the optimization model, and use the fuzzy comprehensive evaluation method to get the correlation. We made a deep excavation of annex ii, and used cluster analysis to obtain the relationship between daily sleep habits and pathology. Finally, we used grey correlation analysis to diagnose the patients in annex iii and obtain the diagnosis results. Based on the above three conclusions, this paper draws the relationship between sleep and each index. The proportion of each indicator factor was analyzed, and it was found that mental disorder and bad sleep habit were closely related to sleep disorder. The research results of emotional psychology of TCM indicate that the scientific sleep mode mentioned in the sleep health and health maintenance of TCM is used to carry out a deeper study on the factors such as sleep physiology from the behavioral and psychological aspects, so as to achieve the purpose of establishing scientific sleep theory. The potential relationship between the influencing factors and sleep was analyzed comprehensively, and the influence of each indicator factor on sleep was obtained. The proportion of each indicator factor was analyzed, and it was found that mental disorder and bad sleep habit were closely related to sleep disorder.

2. Establish Correlation of Factors Affecting Sleep Quality

The reliability analysis of the data was carried out, and the relationship between the influence index and the sleep quality was analyzed by using the analytic method, so as to obtain objective and accurate results. Cronbach test reliability coefficient method is one of the methods used to calculate the reliability analysis of data in the society, which is mainly used to measure the internal consistency. The range of Cronbach test coefficient is normally kept between 0 and 1, and the closer the value is to 1, the higher the internal consistency of the data. A negative value indicates that some projects in the project have the opposite results with other projects. Therefore, the best result is obtained when the value is above 0.8, which can provide a relatively accurate reference basis for our data analysis. If it is lower than 0.6, the obtained data cannot play a corresponding role, which is invalid data.

In the early analysis of the effects of sleep on human body, this paper found that the relationship between the indicators and sleep quality was not correlated with individual indicators and sleep quality, so it was screened and deleted. The index with the credibility greater than 50% was selected. Firstly, the influence of gender index was not taken into account and the effect of dimensionality should be eliminated before calculation in practical application. In order to solve the problem of incomplete indicators, SPSS data analysis was used to standardize the original data and summarize the case processing. Statistic the reliability. The relationship between sleep quality and indicators was analyzed and various statistics were obtained. There is correlation between items, and the

correlation matrix is obtained. The summary statistic is obtained by statistic. Through SPSS principal component analysis, various scalars were analyzed and screened, and the data with little or no correlation was eliminated. Besides, the correlation between each variable should be observed to understand the correlation between each other.

By analyzing the correlation coefficient matrix, it is clear that indicators such as Psychoticism, Reliability, cost and Character have different effects on human sleep, and thus the degree of influence of each indicator factor on sleep is different. It is not difficult to find that the eigenvalue can reflect the influence of the indicator to some extent through the analysis of the principal component extracted from the opposite difference decomposition. The large eigenvalue also reflects a situation, that is, the variance of a component has a great influence in the correlation matrix, so the factor analysis will be effective. Moreover, according to the relationship matrix of the project, Character has little influence among the influencing factors of patients, so it can be deleted

3. Fuzzy Comprehensive Evaluation of the Relationship between Causes and Sleep

New mathematical models continued to be built around indicators such as patient Psychoticism, Reliability, saving and gender, and the data were evaluated using a fuzzy comprehensive evaluation method with reliable results. The major factors influencing the patient's illness category were Psychoticism, Reliability, tone and gender. The residual diagram of related indicators can be obtained by using SPSS.

4. Establish the Connection of Gray Relational Model

Eight influencing factors, such as the sex of the patient, should be presented together when the patient is diagnosed correctly. We need to consider the combination of these eight factors and to determine the distance range of the combination, and to correlate them, to establish a quantitative relationship between patient disease type and age, sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disorders, sleeping medications taken with sleeping pills, and daytime dysfunction.

Algorithm process: preprocess and normalize the data. When the value of each attribute is uniform, and the value of one attribute or several attributes is greater than the value of other attributes, it is actually not conducive to reflecting the true heterogeneity. To overcome this contradiction, the value of the attribute is normalized in this paper. The so-called normalization is to reflect the value of each attribute to the same value range, so as to balance the effect of each attribute on distance. Each attribute is typically mapped to an interval of [0]. K different elements were randomly selected from set D to serve as the center of k clusters. Then, the remaining elements have a phase difference relation in the center of the cluster, and they are calculated respectively. Then, these elements are selected and classified into the clusters with the lowest phase difference. On the basis of the clustering results obtained, the center position of each group was re-established. The calculation method mainly included extracting all elements in the cluster and calculating their arithmetic mean. According to the new center, all elements in D set are divided, and then clustering is carried out again. Repeat the above steps until the clustering results converge to the point where no further changes can occur.

According to the process steps of k-mean clustering algorithm, MATLAB was used to establish the model. Eight subjects were selected as the initial cluster center, including age, sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disorders, medication of sleeping pills, and daytime dysfunction. Then, the distance between the above eight seed clustering centers and each object is calculated, and each object is reasonably allocated to the nearest cluster center according to the distance. All objects are redistributed and the clustering center is recalculated according to the objects in the new cluster. A cluster is represented by the cluster center and the assigned object. This process needs to be repeated until the desired termination conditions are met. The purpose of this process is to solve the previous problem, to search for a set of objects that can include all the solutions, which can not only optimize the objective function, but also enable the greedy algorithm to carry out the task in advance.

Grey relational analysis is a corresponding statistical method, which has multiple factors and results. The dynamics of a system is analyzed by quantitative description, qualitative analysis and comparative measurement. The core of this method is to determine the degree of correlation between sequences by determining the similar reference sequence of the curves obtained from the required comparison columns. The correlation of grey correlation analysis can be divided into two types: relative correlation and absolute correlation. There are serious calculation defects in relative correlation analysis. The main reason is that the calculation of each indicator is inconsistent, so it cannot be unified. Therefore, by comparing the size of grey weighted correlation degree, the evaluation objects are sorted, and the related order of the evaluation objects is rearranged. The higher the correlation degree is, the better the evaluation effect is. Furthermore, the patient's condition can be diagnosed according to the patient's age, sleep quality, sleep latency, sleep time, sleep efficiency, sleep disorder, sleeping medication and daytime dysfunction.

5. Establish a Scientific Sleep Theory

After the above analysis, we analyze the influence of each indicator factor on sleep. In order to find a healthy rest time, this paper looks for the relationship between physical strength, emotion, intelligence and other cycles within a cycle, as shown in figure 2.

At present, medical model is changing from biomedical model to biological, psychological, social and environmental model. Today, the doctor of traditional Chinese medicine clinical workers, not only to look at the problem of "insomnia" endpoint, more should follow the traditional Chinese medicine theory, combination of TCM and modern psychology in the current research results, on the basis of the theory, the use of traditional Chinese medicine health science sleep patterns, from behavioral, physiological and psychological factors affecting bearing three-dimensional depth research, establish the sleep patterns of scientific theory, mining potential of sleep, sleep even through to treat various diseases.

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