1. What are you doing?

This idea discusses how to evaluate the balance ability of the elderly and puts forward specific suggestions to prevent falls. Through literature review, We have established the first level of indicators including age, posture, walking posture, medical history [1][2]. Then different diseases and different characteristics of the body during walking were taken as secondary indicators. Factor analysis and stepwise regression were used to screen index and extract information. Finally, entropy weight method is used to quantify the index. It was found that the three secondary indicators of walking posture in the system of men and women all had an impact of 1/3. In men, lead leg and disease have basically the same effect on the elderly's falls, while in women, age and disease have basically the same effect.

2. What is the question?

Falls are common in the elderly population. Falls may cause many complications in elderly people,because they generally have poor rehabilitation ability, so the side effects can be so debilitating as to accelerate body failure. In addition, the fear from falls may impair the ability to move and constrict the scope of mobility, therefore worsening the quality of life significantly. Consequently, it is of great realistic importance to make a balance ability assessment for elderly people with a view to assisting them in mobility status, correcting postures and preventing accidental falls.

3. Data? Where is the data?

According to the spatial 3d coordinate points of 42 points in the whole body of 80 elderly people with a gait cycle given by 2018APMCM, their age, BMI, lead leg and medical history data were also included

Algorithms? What approaches?

3 The research methods

3.1 Disease factors based on Stepwise regression

Identify disease types that are important for balance

Through stepwise regression, diseases that have a great impact on male and female falls are obtained, and the corresponding values of disease indicators are obtained according to linear regression.

3.2 Classification of indicators based on Factor analysis

Factor analysis was used to combine the first order indexes with a lot of the same information.Factor analysis is to decompose the original variable into a linear combination of several common factors, so as to better understand the internal relationship of the original variable.

3.3 Risk assessment system based on entropy weight method

Information entropy borrows the concept of dryness in thermodynamics to describe, on average, the amount of information about an event. According to the definition of information flag, entropy value can be used to judge the high dispersion degree of an index. The smaller the entropy value is, the higher the high dispersion degree of the index is. The greater the influence of the index onthe comprehensive evaluation that is, the weight is.

Evaluation? How do you know it worked?

Compare it to the research result of paper and test it's practical meaning.

For both men and women, it can be found that BMI is an important indicator of balance ability. Older people with a lower BMI have healthier systems. Biology also found that the elderly

with short and fat body types have lower balance ability than those with medium body types and those with tall and thin body types. People who are tall and thin tend to have a lower BMI.Then it can be found that age and disease form an unobservable special factor for women. Lead leg is used as an indicator alone. This indicates that the internal regulation function of the body has a great impact on women's balance ability, and this effect is constantly strengthened with the increase of age. The exertion leg, on the other hand, can show the effect of a single type of joint flexibility on falls.[3]

For men: Age is a separate category. Studies have shown that finger joint flexibility deteriorates faster in men than in women as they age. And balance ability basically is concerned with knee, ankle, hip. Rheumatism is less common in men than in women. So men are less likely to fall. Disease and lead have reciprocal effects on falls. Play a role in male diseases, mainly ipads fracture. This indicates that the disease is easy to lead to falls, but the better use of a leg force can overcome the problem.[3]

References

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