

Investigation and analysis of traditional Chinese medicine physique of college students in Guizhou

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Abstract: The study aimed to delve into the distribution of traditional Chinese medicine (TCM) constitution types among college students in Guizhou Province. A sample of 828 sophomore students from a finance and economics university was selected using stratified and proportional sampling. These students' constitution types were then accurately determined through the administration of a standardized questionnaire. Results showed that 40.2% of students had a peaceful constitution, while 58.4% had a biased constitution, with 70% belonging to a single constitution type. Physical distribution included Pinghe (40.2%), Qi-deficiency (19.0%), Yin-deficiency (12.9%), Yang-deficiency (8.2%), phlegm-dampness (8.1%), damp-heat (3.9%), Qi-stagnation (2.7%), special nature (2.1%), and blood stasis (1.6%). Significant differences were found in physical fitness distribution based on students' geographical origin. Only 12% of students experienced physical changes during the study period. Overall, the distribution of TCM constitution types in the college showed certain regularity, with more students having a peaceful constitution. The constitution type remained stable over time, with rare changes observed.

Key words: college student; Traditional Chinese medicine constitution; terminology; transformation

1 Introduction

Traditional Chinese medicine constitution refers to the relatively stable characteristics of an individual's physical form, function and psychology disposition, which are shaped by both innate endowments and acquired abilities, and these characteristics are the result and expression of an individual's adaptation to changes in their internal and external environment throughout their life activities [1]. The core theories underlying modern TCM physique science primarily encompass the nine-point classification of physique; correlation between disease patterns and modifiable physique traits [2][3][4]. It is recommended that people with different physique adopt different exercise methods with different items and intensity to promote health [5][6]. Differences in TCM physique of college students have been linked their physical health status [7][8][9][10]. Guizhou is located in the southwest of China, and some studies have confirmed that the distribution of TCM physique types among its residents exhibits distinct patterns. A comprehensive understanding of the characteristics of TCM physique classification among students at a university in Guizhou are of certain significance to the achievement of the purpose of college physical education.

2 Objects and methods

Stratified and proportional sampling methods were employed to select 12 students from various physical education classes within a university in Guizhou. These students were all in their sophomore year, amounting to a total of 900 students with an average age of 19 ± 0.6 years. To gather data, an electronic questionnaire was utilized through a teaching survey software platform. In June 2020, 900 questionnaires were distributed, and by December 2021, 828 of them were successfully recovered, resulting in a recovery rate of 92%.

3 Results

The descriptive statistics were expressed by frequency %, and it was found that among all 828 students, the proportion of biased quality and peaceful quality was 58.3% and 40.2%, respectively, and the proportion of unidentified physique was 1.4%. It is noteworthy that a small number of respondents exhibited physical characteristics that were not clearly distinguishable based solely on the questionnaire calculation results.

There is a significant difference between provincial students and those from other provinces, with a statistical significance level ($X=67.8, p<0.01$). There was a weak correlation between the change of physical constitution and the place of origin ($c=0.25, p<0.01$). Among students from other provinces, the distribution of the primary TCM physique types was as follows: Pinghe (48.5%), Yin deficiency (19.2%), Yang deficiency (12.1%), damp-heat (10.1%), Qi deficiency (1.0%) and special characteristic (1.0%).

4 Analysis and discussion

4.1 The overall distribution of TCM physique of college students in Guizhou

Different types of biased constitution indeed exhibit varying degrees of susceptibility to diseases, which is closely related to the occurrence of sub-health and diseases on the whole.

The difference between peaceful constitution and biased constitution in health, sub-health and disease state also determines the degree and methods for promoting and maintaining the health of individuals. Generally speaking, individuals with a peaceful constitution are closer to health and easier to maintain health. Conversely, those with a biased constitution are more prone to imbalances in Yin and Yang, qi, and blood, which can lead to a higher risk of certain diseases and often have a hereditary tendency. As a result, there are distinct strategies and approaches required for maintaining health and adapting to changes in these individuals. At present, surveys indicate that the proportion of peaceful and biased constitution varies across different groups. During the transition from adolescence to adulthood, college students experience significant changes in their physical development, with organs and various physiological indicators becoming increasingly mature and stable. Additionally, their living environment and daily routine often exhibit a high degree of similarity, making them a representative population for studying TCM physique. In this study, 828 college students of a certain finance and economics class in Guizhou Province were selected as a group for the study. It was found that the proportion of peaceful constitution and biased constitution were 40.2% and 58.2% respectively, with a 1.4% proportion of missing data. From high to low, the proportion of constitution was 40.2%, 19.0%, 12.9%, 8.2%, 8.1%, 3.9%, 2.7%, 2.1% and 1.6% of blood stasis. This is in high consistency with the results obtained by Xia Huifang and Liu Jian, et al., who studied female students in a normal college in Guiyang in July 2019. Their top four constitution types were: "peaceful quality (32.11%), followed by Qi deficiency quality (13.16%), Yin deficiency quality (11.58%), qi stagnation quality and damp heat quality (11.05%)". Similar trends were observed in a study by Xiong Lin and Wan Fei, who focused on students from a university in Chongqing. Furthermore, a national report on physical constitution identification published by the China Traditional Chinese Medicine Network in 2017 revealed that peaceful quality accounted for 28.9%, while "Yang deficiency" and "Qi deficiency" both registered at 16.4%. Other notable constitution types included "phlegm-

dampness" at 10.3%, "Qi deficiency" at 13.2%, and "damp-heat" at 10.20% . While there are similarities across these studies, it's worth noting that the national data is derived from surveys encompassing a broader population, whereas the studies mentioned specifically targeted college students, so there are some differences.

Facultative constitution, which refers to a combination of multiple constitutional traits, accounts for a significant proportion, exceeding half of the partial constitution types observed. Among these combinations, the occurrence of two types of dual-constitution is the most frequent, followed closely by those with three types. These combinations often lead to the formation of qi deficiency, phlegm-dampness, blood stasis, and Yang deficiency qualities. According to the relevant sample survey from 2005 to 2007, over 53.80% of Chinese residents aged 15 and above exhibited signs of facultative constitution, and the quality of blood stasis. Qi-deficiency quality is the most prone to forming combinations with other biased constitutions, with special quality is the least likely to do so. In addition, in July 2017, the survey of traditional Chinese medicine and double-clamping constitution of healthy people in Guangdong Province showed that 74.17% of the respondents were not satisfied with the results and 74.17% of the respondents had double-clamping constitution. Among these, combinations involving 2 to 4 types of dual-constitution were particularly common and Qi- deficiency constitution was easy to form double-clamping constitution.

In terms of the types of double-clamping, there is a relatively consistent conclusion with this study, that is, 2 ~ 4 kinds of constitution are mostly double-clamping, and the Qi-deficiency type is prone to combining with other biased constitution to form the associated double-clamping constitution. However, there is a large difference in the proportion of people, which may be related to the demographic structure of the surveyed population. The study focused on college students around the age of 15 years old to the age of 20, excluding other age groups. The above relevant samples were selected from all the people aged 15 or all the age groups, which may be one of the most important factors in the study and one of the important reasons for the difference. However, despite these differences, it is undeniable that a certain proportion of the overall population exhibits dual-constitution traits. These traits are typically characterized by a predisposition towards Qi-deficiency, which can combine with other constitutional biases to form a unique dual-constitution pattern.

4.2 Physical changes of students in different seasons

Chinese medicine believes that the formation of individual physique is influenced by both congenital "genetic endowment" and "acquired environment". Congenital genetic differences are important determinants of physical differences between individuals. At the same time, "harmony between nature and man" is an important theoretical basis of traditional Chinese medicine physique, indicating that in the process of human growth and development, the acquired surrounding environment and the season also play an important role in the change and development of human health. Different natural societies and environments can affect the formation of physical constitution and also affect the transformation of physical constitution. *Neijing* records that people with different constitutions have different susceptibility to diseases and their symptoms are not the same. Individuals with warm and hot constitutions are relatively tolerant to cold environments, while individuals with cold and cool constitutions are relatively tolerant to warm environments. The changes of the acquired life and environment can lead to the changes of the "manifestation symptoms" of the individual constitution, and also affect the outcome of the "disease symptoms".

5 Conclusion

The distribution of traditional Chinese medicine constitution among students in a finance and economics college in Guizhou province exhibited a distinct pattern, with a notable preponderance of those categorized as having a peaceful constitution. There is a certain proportion of faculty-sandwiching constitution, but no more than 4 faculty- sandwiching

constitution have been found. It is noteworthy that the physical distribution of these constitutions was influenced by regional factors. This comprehensive understanding of constitutional types within the college community can aid in the provision of more tailored and effective healthcare services, taking into account the unique characteristics of each individual.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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