

# Intervention Effects of Baduanjin Qigong on College Students' Sub-Health Mental States- Based on Literature Review and Empirical Analysis

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**Abstract:** At present, the problem of mental sub-health of college students is becoming more and more serious. How to intervene effectively has become the focus of psychological education in colleges and universities. The psychological sub-health state of college students is the state between health and disease in the aspects of physical, psychological and social adaptability. Among them, a subtype of mental sub-health is an intermediate state between health and mental illness. If we cannot pay attention to the causes and mechanisms of mental sub-health of college students, it will develop into trunk disease and mental disease in the future. At present, the cause and influence mechanism of sub-health state in modern medicine are still in interference methods and means, and lack of pertinence. The manifestation of sub-health is mostly abnormal human body function, which belongs to the category of TCM "syndrome". Qigong of traditional Chinese medicine has a unique mechanism and advantage in regulating body function. Using Qigong of traditional Chinese medicine to keep healthy can regulate the physical and mental state of human body, and also can effectively prevent mental sub-health..

**Research purpose:** The interference of fitness Qigong - Baduanjin on psychological sub-health belongs to the non-drug therapy of traditional Chinese medicine, which is safe and has no side effects. The purpose of this study is to observe the effect of practicing fitness Qigong-Baduanjin on the psychological sub-health of college students. On the one hand, it provides methods and ways to regulate and improve the mental health of college students. On the other hand, it provides theoretical reference for the popularization of fitness Qigong-Baduanjin and the opening of fitness Qigong-Baduanjin courses.

**Research methods:** This topic mainly adopts the literature meta-analysis, logical statistics, experimental observation combined research methods. The English literature uses Health Qigong, baduanjin, eighe section brocade, Fitness qigong as the subject and free words. Computer search MEDLINE, EMbase, Elsevier, Science Direct databases. In Chinese, university students, Baduanjin as the main title and free words were searched for China Biomedical Literature Database (CBM), Chinese Science and Technology Journal Database (VIP), Wanfang digital journal group, China Knowledge Network (CNKI) and related conferences. The search period is up to February 2024. Literature review found that fitness Qigong - Baduanjin movement has a certain promotion effect on the mental health of college students.

**Key words:** Healthy China, Eight pieces of brocade, Health preservation, Qigong, Feasibility analysis

## 1. Introduction

### 1.1 Overview of mental health

Mental health refers to an individual's good state in emotional, cognitive and behavioral aspects. It involves an individual's emotions, happiness, sense of self-worth, interpersonal relationships and ability to cope with life pressure. Mental health is not just the absence of mental illness or mental disorder, but a positive, complete state of mind. It is the result of an individual being able to maintain inner balance and stability in the face of various challenges in life, and showing good function in terms of personal growth and social adaptation. In recent years, the incidence of mental health problems in college students has increased year by year, and common problems include anxiety, depression, emotional instability and sleep disorders. According to a national survey, more than 30 to 40 percent of college students say they have experienced some degree of mental health problems.

## **2. Domestic research status**

### ***2.1 Research status of mental health of college students in China***

With the increasing social attention to the mental health of college students, researchers have discussed the current situation, influencing factors and intervention measures of college students' mental health from different dimensions, thus revealing the complexity and urgency of this field. Zhang Yuzhi et al. (2024) found that depression and social support are the common hot spots in mental health research of college students at home and abroad through visual analysis of literature in Web of Science and CNKI database. At the same time, coping styles and mental health issues are at the forefront of research in this field. This indicates that the universality and complexity of college students' mental health problems are gradually becoming the core issue concerned by researchers <sup>[1]</sup>.

In terms of the evaluation of the effect of intervention measures, Zhao Chunqi (2013) showed that there were significant differences in the intervention effects of different exercise items on the mental sub-health state of female college students, indicating the importance of individualized and targeted exercise intervention <sup>[2]</sup>.

### ***2.2 Research status of the influence of domestic fitness Qigong - Baduanjin on the mental health of college students***

Baduanjin, as a traditional Chinese fitness exercise, is gradually popular among college students for its simple and easy to learn and remarkable effect. Luo Jinneng and Ding Liang (2024) pointed out in their study that Baduanjin, as a non-medical health intervention, can provide effective support for the mental health of college students in the context of the integration of sports and medicine. Baduanjin helps eliminate negative emotions and improve mental health by dredging meridians and regulating qi and blood .

Although Baduanjin has a positive effect on the mental health of the whole group of college students, there may be differences in the effect of improving the mental health of different groups of college students. The study of He Liping et al. (2017) shows that Baduanjin has a significant difference in its impact on the mental health of male and female college students. Studies have found that male college students have significantly reduced obsessive symptoms and hostile emotions after practicing Baduanjin, while female college students have significantly improved somatization and anxiety symptoms<sup>[3]</sup> .

### ***2.3 Research status of the influence of domestic fitness Qigong-Baduanjin on mental health of different people***

Due to the special physiological and psychological needs of the elderly group, Baduanjin has been widely used in this group. Li Jiaojiao (2020) found through experimental research that Baduanjin was particularly outstanding in improving the nervous mood of the elderly, and could significantly improve the mental health level of the elderly <sup>[4]</sup> .

The mental health problems of postpartum women have attracted more and more attention. Li Tingting (2023) studied the influence of Baduanjin on lactating women, and the results showed that after 12 weeks of Baduanjin practice, the body indicators such as weight, waist circumference and hip circumference of the pregnant women were significantly improved, and the symptoms of depression and anxiety were also significantly alleviated <sup>[5]</sup>.

During the COVID-19 epidemic, Baduanjin has become an effective means of psychological intervention because of its easy promotion and remarkable effect. According to the study of Wang Xiaoling and Wang Xiaolei (2021), Baduanjin can significantly promote the mental health of nurses during epidemic prevention and control, and can effectively prevent the occurrence of depression and anxiety <sup>[6]</sup> .

## **3. Foreign research status**

### ***3.1 Research status of mental health of college students abroad***

The relationship between mental health literacy and mental health status of college students is one of the research hotspots in recent years. Cormier et al. (2022), through a survey of 123 college students,

found that students with higher eMHL were more able to identify mental health problems and were more likely to recommend seeking professional help. These students face a lower risk of mental health disorders than students with lower eMHL. This study highlights the importance of promoting eMHL in college students' mental health education, especially in terms of prevention and early intervention [46]. The study of Cheng et al. (2021) shows that college students with higher mental health knowledge have significantly lower depressive symptoms, which further supports the importance of popularizing mental health knowledge among college students [7].

Foreign scholars have adopted different methods to solve the mental health problems of college students. Fitzsimmons-Craft et al. (2021) developed a mobile phone-based, population-based mental health monitoring system to identify at-risk populations and personalize interventions for at-risk populations. This project intends to carry out a large sample experiment in many universities to test the effect of improving the mental health level of college students. This technology-based intervention is especially useful when resources are limited. Campus environment, especially green space, plays an important role in the mental health of college students.

### ***3.2 Research status of the influence of foreign fitness Qigong and Baduanjin on the mental health of college students***

In recent years, as the physical and mental health of college students continues to deteriorate worldwide, more and more research has begun to focus on how to improve the health status of this group through effective exercise intervention. Health Qigong - Baduanjin, as a traditional Chinese qigong form, has gradually attracted attention because of its simple movements, easy to learn and practice, and remarkable effects.

In addition to general mental health improvements, Baduanjin has also been used to target specific mental health problems with interventions. Tao et al. (2021) investigated the effect of Baduanjin on problematic smartphone use (PSU). The results showed that Baduanjin not only significantly reduced PSU, but also effectively alleviated negative emotions such as anxiety, loneliness and inferiority. The study also found that although the effect decreased within two months after the intervention, certain positive effects were still maintained [6].

### ***3.3 Study on the influence of foreign fitness Qigong-Baduanjin on mental health of different people***

In the context of the aging of the world population, the mental health of the elderly is becoming increasingly important. Wu et al. (2024) observed the mental health status of elderly people living alone in cities by means of tai chi, Baduanjin and walking. The study found that all three kinds of exercise can promote the physical and mental health of elderly patients, with Tai Chi having the greatest effect. In addition, physical activity has a mediating effect on the effect of physical exercise on mental health, and the physical environment has a certain regulating effect on physical exercise on mental health [7].

HsingI et al. (2024) studied the effect of Baduanjin on schizophrenia (SCH). Although schizophrenia is a serious mental disorder, researches have shown that Baduanjin has obvious promoting effect on patients' mental health. Although this is an experimental study, it has a good effect on psychiatric patients, so more research is needed to confirm its long-term effects and mechanism [3].

## **4. Literature Review**

There are some similarities and differences in the research objectives and methods about the influence of fitness Qigong Baduanjin on mental health at home and abroad. Domestic and foreign studies have also paid attention to the positive effects of Baduanjin on mental health, especially its role in relieving anxiety, depression and improving overall mental health.

#### 4.1 Literature index analysis

Source: Selected 70 articles

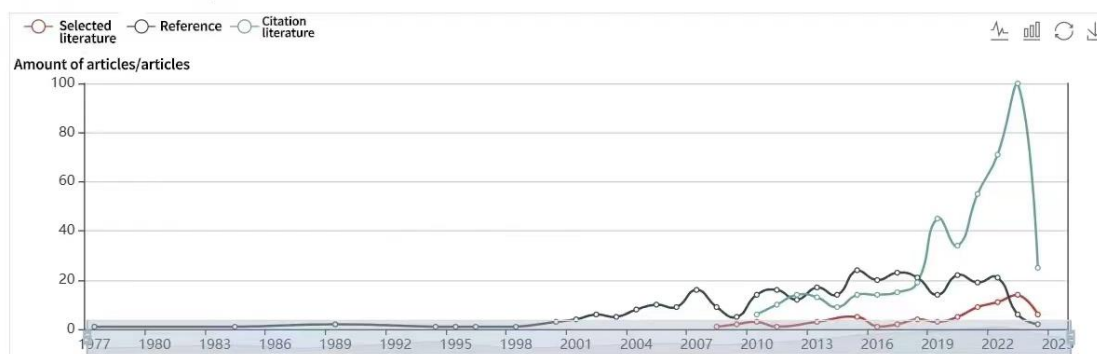
##### Indicator analysis

Number of literatures	Total number of references	Total Led Points	Total downloads	The average reference number of articles	The articles are all cited	The average number of downloads of the article	Download citation ratio
70	921	561	40183	13.13	8.01	574.04	0.01

In terms of the number of literatures, a total of 70 literatures are related to this topic. The literature covers multiple dimensions of research on this topic, showing a certain level of interest in this field in academic research. The total number of references is 921, indicating that these references cite a wide range of reference materials in the study, indicating that the research foundation is relatively solid, and researchers generally use the results of previous studies for reference. In terms of the total number of citations, these 70 literatures were cited a total of 561 times, indicating that these research results have received moderate recognition in the academic community. The cited number of each paper is 8.01 times, which indicates that the influence of each paper in this field is relatively moderate, perhaps because this research direction has received attention, but has not reached the level of the field of high citation volume. The number of downloads is also an important index to measure the influence of literature. The total number of downloads is 40,183, and the average number of downloads is 574.04. The number of downloads of each article is relatively high, which shows that readers have a great demand for these research results, and also reflects that the research of fitness Qigong-Baduanjin on mental sub-health of college students may have certain guiding significance in practical application. The download to citation ratio is 0.01, indicating that although the number of downloads is high, the number of citations is relatively low, which may imply that the literature is used more for practical applications than for further academic citations.

#### 4.2 General trend of literature

##### Overall trend analysis

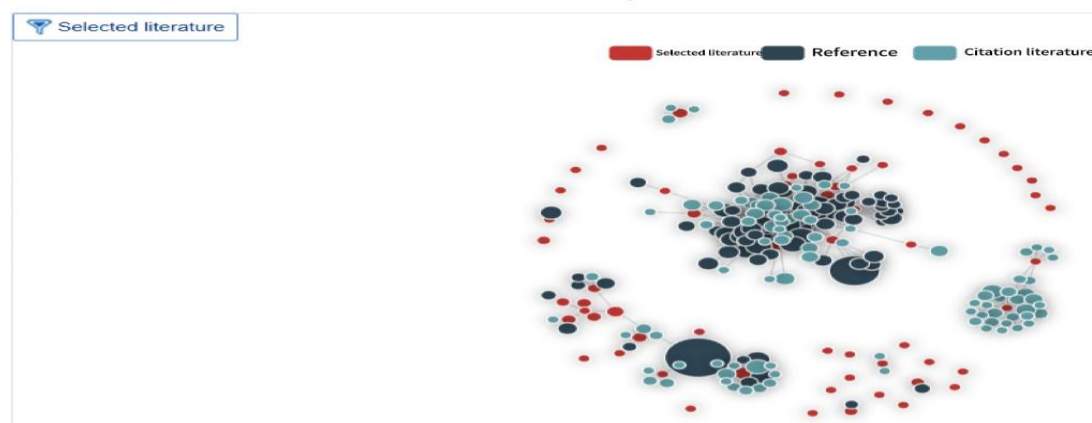


As can be seen from the chart, there were relatively few studies on fitness Qigong-Baduanjin before 2010, with a relatively low number of published papers and almost no significant research enthusiasm. This trend may reflect that the research on the combination of fitness qigong and college students' mental health is still in its infancy, and researchers have paid limited attention to this field. Since 2010, a gradual increase in the number of references and citations can be observed, indicating that fitness Qigong-Baduanjin has received increased attention in academic research over time. The increase during this period may reflect growing social concern about mental health issues among college students, especially as the effects of fitness Qigong as a non-drug intervention began to receive attention from the academic community. Especially after 2016, the amount of citations in the literature increased significantly, especially after 2018, there was a clear upward trend, and it reached a peak in 2020. This phenomenon shows that with the passage of time, the research results of fitness Qigong-Baduanjin have been more widely recognized, and gradually more researchers have cited and discussed. At this time, researchers may focus more on the specific effects and mechanisms of fitness qigong on mental health, especially in the special group of college students. Although the number of citations peaked in 2020, there was a clear downward trend in the following years. This change may reflect the change in research popularity, or

because the research in this field has gradually entered the subdivision field, the concentration of relevant research has been dispersed. At the same time, the number of selected literatures and the number of references also showed a fluctuating trend between 2010 and 2022, indicating that the activity of the research field had some ups and downs, but generally maintained a high research vitality.

### 4.3 Cross-reference network analysis

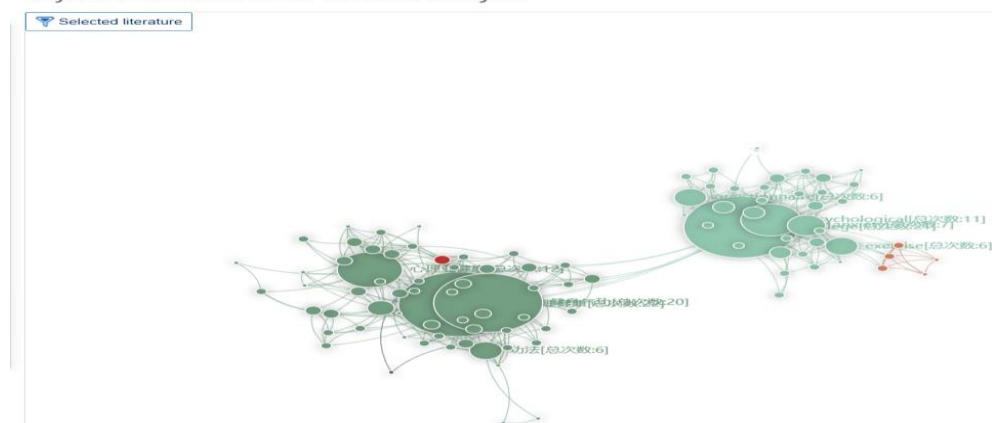
#### Literature cross-citation network analysis



The research on the influence of fitness Qigong-Baduanjin on mental sub-health of college students with different majors has formed a certain academic network, which shows that the research in this field is gradually mature. From the cross-citation network diagram, the close citation relationship between core literatures indicates that these studies have a high academic influence in this field and constitute the theoretical basis and research frontier. These core literatures are often widely cited by researchers and have promoted the development of the field. However, there are also some more isolated literature in the network map, which may represent emerging research directions that have not been widely recognized or cited, or may be research results in specific fields with relatively limited influence. These isolated nodes suggest that although the existing research has made remarkable progress in some aspects, there are still research gaps and under-explored areas, especially in the specific influence mechanism and intervention effect of college students' mental sub-health under different professional backgrounds. These research gaps provide important clues for future research. Some literatures connect different research clusters in the network, indicating that the research of fitness Qigong-Baduanjin is not limited to a single discipline, but also has interdisciplinary potential, and these interdisciplinary joints may involve psychology, pedagogy, sociology and other fields.

### 4.4 Keyword co-occurrence network analysis

#### Keyword co-occurrence network analysis



In the literature on the influence of fitness Qigong-Baduanjin on mental sub-health of college students of different majors, the key words with high frequency and close correlation are mainly concentrated in the aspects of psychological sub-health, Baduanjin, psychological indicators, anxiety, depression, exercise intervention and so on. Among them, "psychological sub-health" and "Baduanjin" are the core keywords, showing that these two concepts occupy an important position in the research in this field.

The relevant research focuses on how to improve the psychological sub-health state of college students through Baduanjin intervention. From the point of view of node size and connection density in the network diagram, the keywords "psychological sub-health" and "Baduanjin" are closely related to psychological indicators such as "anxiety", "depression" and "psychological intervention", indicating that these studies focus on the intervention effect of Baduanjin on college students' common psychological problems. At the same time, the correlation between the keywords "exercise intervention" and "psychological sub-health" is also strong, suggesting that researchers are generally concerned about the actual effect of exercise intervention to improve mental health. Some of the secondary keywords such as "anxiety", "depression" and other psychological symptoms also showed a certain correlation, which means that these specific psychological problems are an important evaluation index to study the effect of Baduanjin intervention<sup>[8]</sup>.

## **5. Conclusions and Suggestions**

### **5.1 Conclusion**

#### **5.1.1 Research basis and influence.**

There have been 70 literatures in related fields, and the number of citations has reached 561 times, showing a solid foundation of research and medium academic influence. Despite the high number of downloads (40,183 total, 574.04 per paper), the low citation rate (0.01 download to citation ratio) indicates that research in this area is more focused on practical applications than further academic expansion.

#### **5.1.2 Research trend**

Before 2010, the research popularity was relatively low and the research was in the embryonic stage. After 2010, the research popularity gradually increased, especially reaching a peak between 2016 and 2020, reflecting the increasing attention of the academic circle to Baduanjin intervention on mental sub-health of college students. The decline in citations after 2020 May indicate that research has gradually moved into niche areas or the heat has shifted.

#### **5.1.3 Cross-reference network**

Core literature forms a theoretical basis with important academic influence, but some isolated nodes indicate that some research directions have not been widely paid attention to, providing a potential entry point for future research.

#### **5.1.4 Key words co-occurrence network core**

Keywords "psychological sub-health" and "Baduanjin" occupy important positions, indicating that the research mainly focuses on the intervention effect of Baduanjin on the psychological sub-health of college students. The high frequency associated keywords such as "anxiety", "depression" and "psychological intervention" show that Baduanjin's intervention research mainly targets at the common psychological problems of college students.

## **5.2 Suggestions**

### **5.2.1 Deepening mechanism research**

N view of the influence mechanism rarely involved in existing studies (such as the differential effect of Baduanjin on mental sub-health of students of different majors), future research may focus on in-depth analysis of its mechanism of action to provide a basis for the construction of theoretical models.

### **5.2.2 To strengthen interdisciplinary cooperation**

It is suggested to further combine the research of Baduanjin with psychology, pedagogy, sociology and other disciplines, so as to explore its comprehensive benefits in psychological intervention, education, teaching and social support system.

### **5.2.3 Improve the academic citation rate**

Encourage researchers to combine the practical experience of Baduanjin intervention with theoretical results, increase the possibility of high-quality academic output, and improve the international academic influence of this field.

#### 5.2.4 Focus on subdivision

Explore the research directions represented by isolated nodes that have not been widely concerned, such as the specific psychological problems of college students with different backgrounds and the effects of Baduanjin intervention, to fill the research gap.

#### 5.2.5 Expand the scope of application

In practice, promote Baduanjin as an effective means of mental health management for college students, and evaluate its applicability in different cultural backgrounds and environments to provide more empirical support for the promotion of intervention means.

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