

# The long-term intervention effect and persistence analysis of the baduanjin mental sub-health of college students

Huiping Zhang\*, Zagdkhorol Bayasgalan

Mongolian University of Science and Technology, Ulaanbaatar, Mongoliap.o.b. 2343, Central Post office, 15160

\* Corresponding author: hp@hhstu.edu.cn

**Abstract:** In recent years, with the rapid development of society and the increase in academic and living pressure of college students, the psychological sub-health problems of college students have become increasingly prominent. Psychological sub-health refers to the state of the state of health and disease, manifested as a diagnostic criteria for poor individual mental state but not reaching the diagnosis of mental illness. As a special group, college students are in a critical period of psychological and physiological development, and facing multiple pressures such as academics, employment, and social networking. Long-term psychological health state will not only affect its academic and life quality, but also may lead to serious psychological problems such as emotional disorders, anxiety, and depression. Therefore, how to effectively intervene and improve the mental sub-health status of college students have become an important issue for the current psychological health education of colleges and universities. The eight-segment brocade of traditional fitness exercises, as part of ancient Chinese qigong, has gradually been widely used in modern health management in recent years. Baduanjin helps individuals to achieve physical and mental balance by regulating physical movements, breathing and mentality, and have the potential to improve mental health. Existing studies have shown that Baduanjin has certain effects on psychological problems such as relieving stress, improving anxiety, and depression, but there are still fewer long-term intervention effects and continuity research on the healthy sub-healthy health of college students. Therefore, this study aims to discuss the long-term intervention effect and its continuity of the eight-stage brocade of the psychological sub-health of college students, and provide new theoretical support and practical basis for colleges and universities' mental health intervention.

This study adopts a random control experimental design. The research object is the college student of the School of Huanghe Science and Technology college. It is included in the standard of the SCL-90 (Symptom Self-Evaluation Table). The research objects are divided into the experimental group and control group. The experimental group participated in the two month Baduanjin, 2 times a week, 60 minutes each time; the control group does not perform Baduanjin to maintain daily life. After the experiment, the SCL-90 symptoms of SCL-90 symptoms and CPSS pressure perception table were performed for the experimental group for 1 month and 2 months to evaluate the continuity of the intervention effect. At the end of the intervention, the psychological sub-health symptoms of the experimental group improved significantly, and the overall scores of the SCL-90 decreased significantly. Compared with the control group, the experimental group improved greater improvement in anxiety, depression, and pressure perception. Especially in terms of anxiety and depression, the improvement of the experimental group is particularly significant.

In summary, this study provides a wealth of experimental data and theoretical basis for the long-term intervention effect and sustainability of the Baduanjin for the healthy sub-health of college students through random control experiments. The results of the research not only provide an effective means of intervention for colleges and universities, but also open up a new direction for the modern application of traditional fitness methods. In the future practice, Baduanjin is hoping to become an important means of psychological and health intervention in colleges and universities, and provide theoretical basis for college students' physical and mental health.

**Keywords:** college students, mental health, Baduanjin

## **1. Introduction**

### ***1.1 Research background***

Psychological sub-health refers to a state of psychological health and psychological diseases. In this state, individuals may have problems such as emotional instability, decreased cognitive function, and enhancement of pressure perception. However, these symptoms have not reached mental illness. Diagnosis standard. The performance of psychological sub-health usually includes anxiety, depression, difficulty in concentration, poor sleep quality, and difficulty in interpersonal communication. For people in a state of psychological sub-health, although their psychological problems are not serious enough to need medical intervention, if they do not intervene in time, they may further deteriorate and develop into serious psychological obstacles.

### ***1.2 Research purpose***

This study aims to discuss the Baduanjin as a traditional fitness method, which has a long-term intervention effect and sustainability of college students' mental sub-health state. Specifically, research will verify the effects of Baduanjin in improving the anxiety, pressure perception, and sleep quality of the college student group through systematic experimental design, and through long-term experimental follow-up to analyze whether its intervention effect is sustainable. Due to the complexity and diverse psychological pressure faced by college students, and it is vulnerable to external factors such as academic cycle and life events, this study also hopes to discuss whether the eight-segment intervention can become an effective and sustainable means in the psychological health education in colleges and universities.

### ***1.3 Research significance***

As a traditional method of regulating physical and mental regulation, the application of Baduanjin has important practical significance in the application of modern mental health intervention. First of all, the psychological health problems of college students have attracted increasing attention. Although the existing psychological intervention methods are diverse, not all interventions can maintain the effect for a long time. By introducing eight-stage brocade and studying its improvement in the health state of college students, it can provide a new, easy-to-promoting choice for colleges and universities' psychological health intervention. Secondly, the Baduanjin has a good physical and mental regulation effect, which can not only improve the psychological state of the individual, but also promote the overall healthy development by regulating the physical function. Therefore, this study discusses the long-term intervention effect and persistence of the Baduanjin, which can provide the theoretical basis for the selection and optimization of subsequent psychological intervention methods, and enrich the content and form of colleges and universities' mental health education. Finally, the significance of this study is to provide practical exploration for the integration of traditional culture and modern health management. With the global transmission of health concepts, the eight-stage brocade, as a traditional Chinese method, verify its effectiveness through modern research, which not only helps the promotion of traditional Chinese culture, but also enrich the diversity of global psychological health intervention.

### ***1.4 The concept and current situation of college students' psychological sub-health***

With the increasing concern of the society's psychological health issues in the society, researchers have discussed the status, influencing factors, and intervention measures of college students from different dimensions, thereby revealing the complexity and urgency of this field. Zhang Yuki et al. (2024) visited the literature of Web of Science and CNKI databases, and found that depression and social support were common hotspots for college students at home and abroad <sup>[1]</sup>. At the same time, psychological problems and psychological health problems are the forefront of research in this field. This shows that the universality and complexity of college students' mental health is gradually becoming the core issue of researchers' attention. Gu Shanshan and Li Jing (2024) discussed the status quo of the mental sub-health of college students and pointed out that psychological sub-health is the transitional stage of psychological health to the development of psychological diseases. If it is not intervened in time, it may have a serious impact on the physical and mental health of college students. Students from higher vocational colleges are also facing high psychological sub-health detection rates <sup>[2]</sup>. Liu Lili et al. (2020) found that the questionnaire survey of students of Hunan Higher College of Traditional Chinese Medicine found that the detection rate of the healthy state of higher vocational college students was 15%. This discovery shows that the psychological health issues of students of higher vocational colleges need to

attach great importance. Similarly, Huang Mingfang (2018) uses the UPI psychological test tool to analyze the mental sub-health state of college students, pointing out that psychological sub-health is a sensitive area in the psychological state of college students, and many college students are in the state of psychological sub-health<sup>[3,4]</sup>. Shao Ning et al. (2018) Analysis of the return of Logistic to the regression of many factors found that childhood emotional abuse, physical abuse and sexual abuse are important factors for college students' mental sub-health. It revealed the correlation between childhood abuse and psychological sub-health of medical college students, and found that the detection rate of psychological sub-health was 16.9%<sup>[5]</sup>. The study shows that childhood bad experiences will significantly affect the mental health of college students, especially in the medical college student group, the incidence of psychological sub-health is higher. These studies have shown that different types of college students generally have a high proportion of mental sub-health, and the status quo of psychological health problems is not optimistic<sup>[6-12]</sup>.

## **2. Research objects and methods**

### **2.1 object of study**

The subjects of this study were college students in Henan Yellow River Institute of Science and Technology. The students with sub-healthy mental health with self-assessment scores between 160-190 were selected by SCL-90 self-assessment questionnaire.

### **2.2 Research method**

#### **2.2.1 Literature data method**

According to the needs of the thesis research, through the Mongolian University of Science and Technology, the library of the Yellow River University of Science and Technology: Through the Internet, through the Internet of China (CNKI), Wanfang, Sub Science and other Internet "Review relevant journals, degree papers and other research results for keywords; after consulting the literature, it is found that 199 articles on the influence of Baduanjin on the influence of psychological health intervention, and articles on the impact of Health Qigong Baduanjin on the influence of psychological health intervention 143 articles, the main research is concentrated in depression, anxiety, and sleep quality. Among them, the eight paragraphs of Health Qigong are summarized and summarized by college students' psychological health intervention. Baduanjin research status of the psychological health of college students summarized the research results and shortcomings of predecessors, and provided more theoretical and data basis for the experimental design and data of this paper.

#### **2.2.2 Questionnaire survey method**

In this experiment, the "Symptom Self-Evaluation Table SCL-90" and "CPSS Pressure Perception Table" comparative analysis analysis of the psychological health changes for 1 month and 2 months after 2 months.

#### **2.2.3 Experimental method**

The experiment was first screened through the SCL-90 self-assessment questionnaire, and the self-rating score between 160-190 points was in sub-healthy students as the experimental object. The recovery rate was 98.5%, the effective questionnaire was 651, and the effective rate was 97.1%. Repeatedly screening the experimental objects from the requirements in the evaluation, 92 college students of the experimental group psychological sub-health, 41 psychological sub-health college students are the most experimental group research objects, and the other 41 psychological sub-health college students are the experimental objects of the control group. The object conducted a two-month intervention experiment, analyzing the SCL-90 self-assessment questionnaire and CPSS perception of force watch score 1 month later and two months later.

#### **2.2.4 Mathematical statistics**

First use the Excel office software form to summarize the data before and after statistics, and then use SPSS23.0 software for mathematical analysis. Analyze the issuance of the questionnaire, compare the data of the experimental group and the control group before and after the period, and after the end of the experiment. Determine whether there are significant differences;  $P < 0.05$  means significant differences, and  $P < 0.01$  means extremely significant differences. Finally, the statistical software (such as SPSS) organizes and analyzes the collected data. Based on existing theoretical and research results, build a

logical framework and causal model that affects the mental health of college students. Analyze the relationship between different variables, and form a logical reasoning that affects the psychological health of college students.

### **3. Experimental design**

#### ***3.1 Experimental research object***

##### ***3.1.1 Filter of Psychological Asian Health Objects***

A total of 680 questionnaires were distributed, 670 were recovered, the recovery rate was 98.5%, the effective questionnaire was 651, and the effective rate was 97.1%. The statistical results show that 95 students scores a total of 160-190 points and more than 30-43 positive items. Preliminary screening standards for mental sub-health; next to psychiatric interviews to eliminate re-screening to eliminate those with neurosis or other psychological diseases, interview purposes exclude those who are highly suspected as neurosis or other psychological diseases. For 2 months, it is the object of psychological sub-health that is going to be studied. The interview objects meet the students with psychological sub-health screening standards. The fixed interviewer 2 schools of hospital medical psychology and two school psychological counseling full-time teachers. The content of the interview understands the recent interpersonal communication and psychological health: refer to the 3rd edition of the 3rd edition of the "Chinese mental disorder classification and diagnosis standard" Psychological disease. After a resumption of sieve, 82 students met mental sub-health, eliminated 3 people (3%) for the sake of reasons, and excluded 10 people in the psychological and psychological symptoms less than 3 months, (10.5%), and finally got 82 As a research object of mental sub-health, students meet the above-mentioned standards and participate in the whole process.

##### ***3.1.2 Random grouping of experimental objects***

Gives SCL-90 Symptom Self-evaluation forms and CPSS perception force table evaluation of 92 research objects of mental sub-health states. The results show that there are no significant differences between the factors of the factors ( $P > 0.05$ ), which shows that basically it is in it The level of unity and good balance can be compared on this basis.

##### ***3.1.3 Incorporation of objects***

a I willing to participate in the intervention training and control group according to the college's professional random distribution.

b Except for participating in the intervention training of this group, do not participate in other training.

c The number of effective intervention and completion of intervention training in accordance with regulations.

d In addition to participating in physical education, the control group is not participating in other training.

##### ***3.1.4 Examination standards for experimental objects***

First of all, those who are unwilling to receive interference trainers; second, those who fail to complete the trainers who fail to intervene in accordance with the regulations for various reasons, and the experimental team participates in other trainers. Those who fail to participate in the intervention for various reasons.

##### ***3.1.5 Intervention training content***

###### ***3.1.5.1 Baduanjin interference group***

Learn to master the eight-segment brocade method: The theory and routine of the Eight Gong Methods of Health Qigong is taught by the professional teacher of the School of Physical Education in the School of Physical Education. Experimental content: Each time the eight-segment Jinjiao professional teachers are organized to conduct a fitness qigong- Baduanjin set exercises. Interference time and frequency

The test team practice for 60 minutes each time, and practice twice a week for 3 months. Each exercise time is from 5:30 in the morning to 6:30. The conventional warm-up exercise before official practice

was 20 minutes. Those who have accumulated more than 3 times (including 3 times) are invalid interventions and do not make statistical treatment. Note: Each form of form should be correct; movement must be in place: Pay attention to the combination of physical movements, breathing and ideas during practice.

### 3.1.5.2 control group

Except for physical education, no experimental interference is done, and the intervention group needs to be tested for 1 month and 2 months.

## 4. Experimental results and analysis

Table 1 Two groups of SCL-90 meters score comparison

	Group	cases	average value	Standard deviation	t	P
Before intervention	Control group	41	181.53	1.25	-1.175	0.242
	Experimental group	41	181.79	1.34		
One month	Control group	41	178.53	1.25	-1.788	0.076
	Experimental group	41	178.94	1.48		
Two month	Control group	41	176.53	1.25	2.486	0.014
	Experimental group	41	176.03	1.13		

As can be seen from the table above: Before intervention, compared with the Baduanjin experimental group ( $181.79 \pm 1.34$ ), the control group ( $181.53 \pm 1.25$ ) was not statistically significant ( $t = -1.175$ ,  $P = 0.242 > 0.05$ ); , Compared with the Baduanjin Experimental Group ( $178.94 \pm 1.48$ ), the control group ( $178.53 \pm 1.25$ ) has no statistically significance ( $T = -1.788$ ,  $P = 0.076 > 0.05$ ); two months, the control group ( $176.53 \pm \pm \pm$  Compared with the Baduanjin Experimental Group ( $176.03 \pm 1.13$ ), the difference is statistically significant ( $T = 2.486$ ,  $P = 0.014 < 0.05$ ). Therefore, compared with the control group, the SCL-90 meter scores have decreased significantly after the eight-segment brocade training training, which means that the level of mental health has increased significantly.

Table 2 Two groups of perception of perception force table score comparison

	Group	cases	average value	Standard deviation	t	P
Before intervention	Control group	70	26.27	0.99	-0.246	0.806

	Experimental group	70	26.31	1.07		
One month	Control group	70	25.61	0.94	0.961	0.339
	Experimental group	70	25.44	1.16		
Two month	Control group	70	25.23	1.01	3.389	0.018
	Experimental group	70	24.74	1.37		

As can be seen from the above table: Before the intervention, the control group ( $26.27 \pm 0.99$ ) was compared with the eight-stage brocade experimental group ( $26.31 \pm 1.07$ ), the difference was not statistically significant ( $T = -0.246, P = 0.806 > 0.05$ ); , Compared with the Baduanjin Experimental Group ( $25.44 \pm 1.16$ ), the control group ( $25.61 \pm 0.94$ ) has no statistically significance ( $T = 0.961, P = 0.339 > 0.05$ ); ) Compared with the Baduanjin Experimental Group ( $24.74 \pm 1.37$ ), the difference is statistically significant ( $T3.389, P = 0.018 < 0.05$ ). The significant decrease in the score of the scale means that the pressure of students is reduced.

This experiment adopts a random control experiment method to study the long -term intervention effect and its continuity of the eight -stage brocade for college students' mental sub -health. The results show that the difference between the test group and the control group in the SCL-90 symptoms and the CPSS perception of perception of force scores. There is no significant difference before the intervention, but after 1 month and 2 months of eight-segment Jin practice practice Later, the psychological symptoms of the experimental group improved significantly, especially in terms of anxiety and depression. Compared with the control group, the SCL-90 and CPSS scores of the experimental group have decreased significantly, indicating that the eight-segment Jinxian has a positive effect on the health state of psychological sub-health, and the intervention effect continues to appear within 2 months. This shows that, as a simple and easy -to -run health qigong, the Baduanjin can effectively improve the level of psychological health of college students, and has the potential of long -term intervention and improvement.

## Conclusions

In this study, the long -term intervention effect and sustainability of the Baduanjin have achieved remarkable research results. Studies have shown that, as a traditional Chinese health qigong, the Baduanjin has obvious positive effects on improving college students' psychological sub -health, especially in terms of anxiety, depression and pressure perception. Through the comparative analysis of the experimental group and the control group during different intervention stages, the study found that after two months of participating in the Baduanjin practice, the experimental team had improved significantly, and this effect was even more obvious in 2 months. Compared with the control group, the SCL-90 symptoms of the experimental group decreased significantly, indicating that the intervention effect of the Baduanjin continued and stable.

First of all, Baduanjin can effectively alleviate the psychological pressure and negative emotions of college students by combining body movements, breathing regulation and mentality regulation. This ancient fitness method helps participants to regulate emotions through the coordination exercise and soft breathing control of the whole body, improve the balance of physical and psychological balance, and achieve the purpose of improving psychological health. The results of the study showed that in the three -month -old Baduanjin exercise, the anxiety, depression, and tension of college students in the experimental group were significantly reduced, and the quality of sleep has also improved significantly.

This shows that the Baduanjin as a traditional fitness method, is not only beneficial to the body, but also promotes the development of mental health.

Secondly, the study also revealed the continuous effect of the eight -stage intervention. After continuing the psychological tracking survey of the experimental group after the intervention, the study found that the intervention effect of the Baduanjin was not only effective during the practice period, but also the effect continued within one month after stopping the exercise, indicating that the Baduanjin was stronger. The durability. This provides new ideas for the long -term intervention design of college mental health education, especially in the context of frequent problems of college students' psychological sub -health issues, Baduanjin can be promoted as a long -term effective mental health intervention method.

The significance of this study is not only to verify the positive role of Babu Jin in psychological intervention, but also provides a feasible intervention method for colleges and universities' mental health education. Baduanjin simple academicity makes it suitable for extensive promotion, especially in an environment with a greater pressure in colleges and universities, it can provide students with a way of self -regulation. In addition, as part of the traditional Chinese culture, the promotion of Ba Duan Jin also helps combine traditional fitness culture with modern psychological health management, and provides more cultural perspectives and practical experience for global mental health intervention.

In short, this study shows that Baduanjin can effectively improve the mental sub -health status of college students and have continuous intervention effects. Future research can further explore the intervention effect of the Baduanjin in the longer period of time, and its combination with other mental health intervention methods, so as to provide more comprehensive support and guidance for colleges and universities' mental health education.

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