Study on the Static Regulation of Yoga Meditation on the Body

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Keywords: Yoga meditation, Static adjustment, College students, Mental health

Abstract: Objective: To explore the static regulation of yoga meditation on college students. Methods: The methods of literature review, questionnaire survey, experiment and mathematical statistics were mainly used. Symptom Checklist-90 (SCL-90) was used in yoga meditation adjustment group and automatic emotion adjustment group. The data before and after the experiment were recorded, stored and analyzed by SPSS16.0 software. Results: The interactive effect between adjustment mode and before and after adjustment was significant, which induced negative emotions. The skin electrical level of the subjects adjusted by yoga decreased significantly, while the skin electrical level of the subjects in other groups did not change significantly. After the experiment, the overall average value of each factor of girls decreased by 0.863 at the highest and 0.427 at the lowest. After the experiment, the overall average of boys decreased by 0.405 at the highest, and the least was paranoid factor, which did not change before and after the experiment; The LF of yoga meditation adjustment group was significantly lower than that before the experiment ($P<0.01$). Conclusion: For college students, with subjective efforts and effective guidance, short-term simple yoga meditation is an effective method to eliminate distractions, stabilize emotions and coordinate physical and mental balance.

1. Introduction

Meditation can produce positive thinking methods, eliminate negative emotions, regulate nervous and endocrine systems, and thus achieve the effect of self-repairing genes. Yoga voice meditation is the soul and core of yoga, which can help us relieve daily stress, and more importantly, it can help us get rid of the deepest anxiety and fear, and recognize the long-awaited inner profound peace and spiritual happiness [1]. The mental health of college students has become the focus of attention of society, schools and parents. As a harmonious and unified sport, yoga has become a popular physical education course for college students. This paper discusses the positive significance of yoga in regulating college students' mental health, and popularizes and promotes college yoga, so as to improve the teaching quality of yoga and better enhance the teaching and practice level of yoga.

Compared with the negative rest method, yoga relaxation and rest can promote the blood circulation of the body in time, relieve the nervous activities of the central nervous system, and accelerate the elimination of sports fatigue [2-3]. Therefore, we should actively explore the development of yoga relaxation and rest, and expand people's application after daily exercise and intense sports events. The purpose of this study is to use physiological coherence and autonomous balance system to practice yoga meditation for college students, and to analyze and discuss the influence of short-term yoga meditation practice on self-psychology, physiological adjustment process and adjustment ability.

2. Mechanism of Sports Fatigue

2.1 The Generation of Physiological Fatigue

Creatine phosphate (CP) and adenosine triphosphate (ATP), two high-energy substances, exist in human muscles, which can be decomposed at any time to provide energy for human activities. When people engage in a lot of exercise, the concentration of CP in muscles will decrease, and the synthesis of ATP will also decrease, thus causing short-term fatigue. At the same time, lactic acid

  DOI: 10.25236/iwass.2021.008

accumulates in muscle tissue during fatigue, which reduces the PH value in blood, and inhibits the excitement at nerve junction from being transmitted to muscles, which eventually leads to fatigue caused by the decline of muscle contraction function.

As far as the central nervous system is concerned, when people exercise with great intensity, the cerebral cortex will make excessive excitement and inhibition in a very short time, which will damage the original stable mode of the nervous system, make the cerebral cortex function disorder and send out a signal to stop working to the subjective feelings transmitted by the body, thus affecting the physical fitness adjustment of athletes, which is the mechanism of physical fatigue after exercise [4].

2.2 The Emergence of Psychological Fatigue

Sports fatigue not only refers to the lack of human activity ability, but also includes athletes' psychological fatigue. This psychological obstacle is more common among athletes in competitive competitions. It is generally caused by overtraining or high-intensity stress in competitions, which is connected with subjective fatigue feeling of the body.

Exercise-induced psychological fatigue includes brain dysfunction symptoms such as central nervous system information processing fatigue, negative emotions, and decreased sports cognition level, which psychologically reflects the unhealthy mental phenomena of depression, irritability and nervousness. It is the easiest for athletes to have mental fatigue and psychological frustration in the brain, which will affect the development of the next stage of sports [5].

3. The Effect of Yoga Meditation on Static Regulation of Body

3.1 Research Objects and Methods

3.1.1 Object of Study

This paper randomly selects two natural classes in a university, each class has 20 students, and each class has 10 boys and girls. And randomly select one of the two classes as the yoga meditation adjustment group, and teach the students in the yoga meditation adjustment group the basic theoretical knowledge and methods of yoga voice meditation. Regular physical education class takes yoga voice meditation for 10 minutes before class, another class is set as automatic emotion regulation group, and regular physical education class takes supine relaxation for 10 minutes before class. After 16 weeks of teaching, the mental health status of all students in these two classes was tested and analyzed at the end of the period, and then the promotion effect of yoga voice meditation on college students' mental health was verified and analyzed.

3.1.2 Research Technique

(1)Literature data method

Collect relevant research data in China Journal Network and Wanfang Knowledge Retrieval Database. It mainly involves psychology, physiological psychology and physiology, and studies related books repeatedly.

(2)Interviewing method

This study focuses on unstructured interviews. Interviewees are experts in related sports, sports psychology, yoga and instruments and equipment, and have a deep discussion with them on the main research issues, contents, experimental control and experimental indicators. Experts not only provided valuable opinions on the practicability, scientificity and feasibility of this study, but also put forward loyal suggestions on the exquisiteness of scheme design, the effective combination of professional theory and technology, and how to broaden research ideas.

(3)Questionnaire survey method

In this study, SCL-90, a general mental health questionnaire at home and abroad, was selected, which has 90 items, including a wide range of psychiatric symptomatology, from feeling, emotion, thinking, consciousness, behavior to living habits, interpersonal relationships, eating and sleeping, etc., and 10 factors were used to reflect 10 aspects of psychological symptoms. The distribution of

ten factors is as follows: somatization 12, obsessive-compulsive symptoms 10, interpersonal relationship 9, depression 13, anxiety 10, hostility 6, terror 7, paranoia 6, psychosis 10 and other 7. It adopts a five-level scoring system for each project.

In the evaluation, the total mean score and factor mean score are commonly used. The small total mean score of SCL-90 indicates that the mental health status is good. Similarly, the small factor mean score indicates that the adverse symptoms of a certain factor are mild and the mental health status is good. The reliability and validity coefficient of the scale has been tested and confirmed internationally, which is high and stable, and can be used as a tool for measuring the mental health level of college students [6].

3.1.3 Experimental Method

(1)Preliminary stage

After the subjects entered the laboratory, the experimenter first told the subjects that the experiment was a research related to emotion, asked the subjects about their mood at that time (except those who were in high or low mood), then introduced the experimental procedure in detail, and told the subjects that the whole process was controlled by a computer, and the computer screen would display the requirements for the subjects at a specific time according to the steps, and the subjects must strictly abide by them.

(2)Formal test phase

Induce the positive emotions of the subjects: 1 minute of instruction, followed by 30 seconds of self-reflection. I hope everyone can calm down. In order to ensure that the positive emotions of the subjects can be mobilized, after watching the film, please enjoy the romantic piano music while listening to the music, and imagine one thing that makes you happiest for 5 minutes; After that, the subjects were given a small gift to bring a surprise to the subjects, so as to increase their positive emotions.

Induce the negative emotions of the subjects: the instructions will be blank for 1 minute, and then for 30 seconds. I hope everyone can calm down. Please watch the sad film for 5 minutes, and then imagine the most sad thing for 5 minutes.

(3)Intervention stage

In the positive and negative emotion groups, the subjects were randomly divided into two groups by using instruction, one is yoga meditation adjustment group, the other is emotion white movement adjustment group. Yoga meditation adjustment group: five-minute guiding words-take a comfortable sitting position and relax your whole body. Close your eyes, pay attention to your breathing, let your breathing proceed slowly, and don't try to control it. With the slow breathing, my heart is more and more peaceful, and my body and mind are more and more relaxed.

Automatic emotion regulation group: five minutes of soothing music.

3.1.4 Mathematical Statistics

The experimental data before and after the experiment were recorded and analyzed, and the SPSS system was used to compare and analyze the subjects horizontally and vertically, from which the average value, standard deviation, T value and P value of each item in SCL-90 were obtained, and compared with the mental health standard in SCL-90.

4. Results and Analysis

4.1 Difference of Physiological Indexes Before and after Experiment

The two physiological indexes of emotion are in two periods: the anterolateral period of emotion initiation and the post-test period of emotion regulation. See Table 1 for specific experimental results.

Table 1 Finger Skin Electrical Data of Subjects in Different Emotional Groups

Adjustment mode	Positive emotion group		Negative emotion group	
	Pre-test	Post test	Pre-test	Post test

Yoga adjustment	1.63±0.32	1.60±0.36	2.33±0.27	1.31±0.33
Regulate automatically	1.55±0.22	1.56±0.31	2.45±0.35	2.17±0.36

The main effect induced by emotion was significant, and the finger skin electrical level in negative emotion group was significantly higher than that in positive emotion group. The main effect of adjustment mode is significant, and the skin electrical changes of yoga adjustment group are more obvious.

The interactive effect between adjustment mode and before and after adjustment was significant, which induced negative emotions. The skin electrical level of the subjects adjusted by yoga decreased significantly, while the skin electrical level of the subjects in other groups did not change significantly.

4.2 Analysis on the Influence of Ten Effective Factors of Scl-90 for Male and Female College Students in Experimental Class Before and after the Experiment

It can be seen from Table 2 that after the experiment, the overall average value of all factors of girls decreased by 0.863 at the highest and 0.427 at the lowest. After the experiment, the overall average of boys decreased by 0.405 at the highest, and the least was paranoid factor, which did not change before and after the experiment; There are significant differences in paranoia among the ten factors of girls, and there are very significant differences in the other nine factors; Among the ten factors of male students, somatization, depression and psychosis have significant changes, while obsessive-compulsive symptoms, hostility, terror and anxiety have significant changes, while interpersonal sensitivity, paranoia and other factors have no significant changes.

Table 2 Mean Difference, t Value and P Value of Scl-90 between Men and Women Before and after the Experiment in the Experimental Class

Actual effect factor	Girl student			Schoolboy		
	Mean difference	T value	P value	Mean difference	T value	P value
Somatization	0.502	5.307	<0.01	0.337	4.471	<0.01
Obsessive symptoms	0.863	6.442	<0.01	0.405	2.520	0.014
Sensitive interpersonal relationship	0.471	3.351	<0.01	0.336	1.862	0.006
Depressed	0.744	5.580	<0.01	0.325	2.827	0.002
Anxious	0.863	8.661	<0.01	0.301	2.014	0.017
Hostile	0.556	3.637	<0.01	0.227	2.630	0.203
Terrifying	0.625	3.509	<0.01	0.256	2.017	0.024
Stubbornly biased	0.427	4.281	<0.01	0.317	0.07	0.021
Psychotic	0.569	4.550	<0.03	0.329	3.387	0.047
Other	0.663	5.528	<0.01	0.108	1.226	0.071

4.3 The Data Reported in the Group of Yoga Meditation Adjustment Group in the State of Meditation

Table 3 the Data In the Yoga Meditation Adjustment Group Reported the Test Results (n=10)

Index	Before the experiment	In the experiment,	t	P
LF	393.7±251.4	124.3±71.5	3.62	0.017
HF	71.5±50.2	20.6±16.5	2.74	0.006
LF/HF	5.6±3.7	13.4±18.9	-1.24	0.207

It can be seen from Table 3 that the LF in the yoga meditation adjustment group is significantly lower than that before the experiment (P<0.01), as shown in Figure 1.

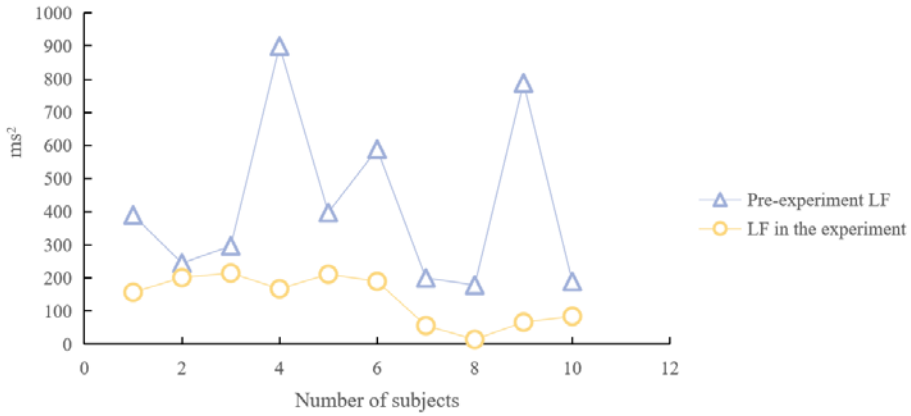

Fig.1 Comparison of Lf Before and during the Experiment in the Meditation Adjustment Group of Yoga

LF mainly reflects the change of heart rate caused by baroreflex and blood pressure regulation, which is mediated by sympathetic and parasympathetic nerves. When LF is larger, sympathetic nervous system becomes more active, and vice versa. It can be seen from the curve changes in fig. 1 that LF decreased obviously in the experiment. However, HF also decreased significantly ($P<0.05$).

5. Conclusion and Suggestion

5.1 Conclusion

(1)The adjustment of yoga meditation on emotion is realized by adjusting people's physiological state. Yoga meditation has influence on people's peripheral physiological activities and central physiological activities. It can increase skin temperature, heartbeat interval and brain activity.

(2)Yoga plays a very obvious role in improving the mental health level of college students, and has an obvious effect in optimizing or improving the seven factors of SCL-90 (somatization, obsessive-compulsive symptoms, depression, anxiety, hostility, terror and psychosis, etc.).

(3)Sit-in breathing meditation can relieve the individual's ability to maintain self-psychological regulation, and can regulate the mood such as lowering heart rate, slowing down breathing rhythm and regulating stress.

5.2 Suggestion

(1)In view of the promotion of yoga to the mental health development of college students, yoga courses should be actively carried out in universities, and yoga should be vigorously promoted to stimulate students' interest in yoga. Create a vibrant, green and healthy study and living atmosphere, improve a better environment for the all-round development of college students, and constantly improve their psychological quality and physiological health level.

(2)For students with serious mental health problems, universities should offer targeted yoga courses. For example, students with severe depression, anxiety and obsessive-compulsive disorder suggest yoga practice, and boys suggest strengthening somatization training.

(3)Yoga meditation is a superb skill, which requires guidance skills with rich practical experience. Among them, the gender of the guide, the speed of speech, intonation, facial expressions and the content of the guide language will all have an impact on the physical and mental changes of the practitioner. It is suggested that yoga meditation guides in society need training and strict examination.

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