

# Research on Depression, Anxiety and Memory of Subhealth after Practicing Jianshenqigong-Wuqinxi

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## Abstract

**Objective:** To study the effect of practicing Jianshenqigong-wuqinxi on subhealth problems including depression, anxiety, and memory loss. **Methods:** 1) 80 cases with subhealth problem were randomly divided into two groups. 40 cases practicing Jianshenqigong-wuqinxi were used as test group, and the other 40 unpracticing cases were used as control group. 2) The test group was practising Jianshenqigong-wuqinxi one hour in the morning five times per week for three months. 3) Scores of subhealth status such as depression and anxiety were evaluated once every two weeks, while the memory test was performed once a month. 4) **Data analysis:** SPSS11.0 software was used for statistical analyses. Data were shown in mean  $\pm$  SEM. Difference was considered significant if the t-test P value is less than 0.05. **Results:** 1) Scores of subhealth state and depression were significantly lower in test group than those of control group. The beneficial effects of practicing Jianshenqigong-wuqinxi were more obvious for the subjects in the test group who had practiced Jianshenqigong-wuqinxi for two to twelve weeks ( $P < 0.05$ ). 2) Scores of anxiety test were significantly lower in test group than those of control group after practicing Jianshenqigong-wuqinxi for six to twelve weeks ( $P < 0.05$ ). 3) Scores of memory were significantly higher in test group than those of control group ( $P < 0.05$ ). **Conclusions:** 1) Practicing Jianshenqigong-wuqinxi could promote health in people who have subhealth mental problems. 2) Practicing Jianshenqigong-wuqinxi could relieve depression, anxiety while enhance memory.

**Keywords:** Subhealth, Depression, Anxiety, Jianshenqigong-Wuqinxi

## 1. Introduction

Subhealth is a kind of status between health and disease, which has no precise definition but is generally defined as low physical activity and adaptability regularly occur. It has been reported from WHO that there are more than 70 percent people in the world are in subhealth status [1,2]. In China the subhealthy people are about 60 to 70 percent, most of which are between 35 to 45 years old. The Chinese in subhealth conditions have exceeded 7 million according to recent data [3,4]. For those people they are often disturbed by bad feelings such as depression, anxiety, panic, short breath, listlessness, dizziness, headache, insomnia, etc. Jianshenqigong-wuqinxi mimics five animals' appearances and actions such as tiger, deer, bear, monkey, and crane. And it is a kind of mildly

intense aerobic exercise, which makes vasodilatation, regulates autonomic nerve, increases venous return and enhances body sensibility. It was supposed that practicing Jianshenqigong-wuqinxi could relieve the bad feelings characteristic of subhealthy people. To discover the mechanism of physiological and psychological changes of Jianshenqigong-wuqinxi on subhealthy people, we observe the effects of practicing Jianshenqigong-wuqinxi on depression, anxiety, and memory loss of subhealthy people.

## 2. Methods

1) 80 cases (not hospitalized patients) with subhealth selected from Tianlin community and Muyang hospital were randomly divided into 2 groups. Subjects in the test

group (40 cases) were practicing Jianshenqigong-wuqinxi, while subjects in the control group (40 cases) did not practice Jianshenqigong-wuqinxi.

2) The test group was practicing Jianshenqigong-wuqinxi one hour in the morning five times per week for three months.

3) Scores of subhealth status such as depression and anxiety were evaluated once every two weeks, while the memory test was evaluated once a month.

4) Index of test:

a) The diagnosis of subhealth was according to the Fukuda complete text of revised case definition in American control disease center (CDC) in 1994 [5]. Nine items were tested in diagnosis of subhealth. The subjects should answer each item as yes or no. If the answer was yes, 1 score would be added (except the first item). Two scores would be added for the first item. After all the items were finished, the person whose score more than 6 was considered as in subhealth status.

b) Self-rating Depression Scale (SDS) and Self-Rating Anxiety (SAS) tables were used in depression and anxiety test accordingly. Twenty items were tested in calculation of scores of SDS and SAS. Each item has 4 grades. The first grade is 'no', the second is 'some time', the third is 'many time' and the fourth is 'most or all the time'. SDS scores less than 40 were 'normal', between 40 and 60 were 'mild depress', more than 60 were 'heavy depress'. SAS scores less than 40 were 'normal' between 40 and 60 were 'mild anxiety' more than 60 were 'heavy anxiety'.

c) Memory test: a list of random numbers or letters was presented on a computer screen at the rate of one per two seconds. The subjects being tested were asked to recall the items in order, and if they are correct, the computer would record the length of the numbers or letters as the memory of the subjects. The test began with two numbers, increasing until the subjects committed twice errors. Recognizable patterns (for example 2, 4, 6, 8) should be avoided [6].

5) Data analysis: SPSS11.0 software was used. Data were shown in mean  $\pm$  SEM. Difference was considered significant at  $P < 0.05$ .

### 3. Results

1) Scores of subhealthy state (**Table 1**) were significantly lower than that of control group. The beneficial effects of practicing Jianshenqigong-wuqinxi were more obvious for the subjects in the test group who had practiced Jianshenqigong-wuqinxi for two to twelve weeks ( $P < 0.05$ ). There were also significant difference of subhealth scores in control group before and after two to twelve weeks ( $P < 0.05$ ).

2) Scores of anxiety (**Table 2**) of test group were sig-

**Table 1. Scores of subhealth after practicing Jianshenqigong-wuqinxi for twelve weeks.**

Time ( weeks )	Control group	Test group
0	6.45 $\pm$ 0.36	6.40 $\pm$ 0.40
2	6.1 $\pm$ 0.7*	5.20 $\pm$ 1.45* $\Delta$
4	6.18 $\pm$ 0.76*	4.95 $\pm$ 1.74* $\Delta$
6	6.03 $\pm$ 1*	4.65 $\pm$ 1.52* $\Delta$
8	5.88 $\pm$ 1.19*	4.53 $\pm$ 1.54* $\Delta$
10	5.75 $\pm$ 1.16*	4.38 $\pm$ 1.24* $\Delta$
12	5.78 $\pm$ 1.48*	4.5 $\pm$ 1.51* $\Delta$

\*There was significant difference when compared with before practicing ( $P < 0.05$ );  $\Delta$ There was significant difference when compared with control group ( $P < 0.05$ ).

**Table 2. Anxiety scores of subhealth after practicing Jianshenqigong-wuqinxi for twelve weeks.**

Time ( weeks )	Control group	Test group
0	36.8 $\pm$ 7.86	36.8 $\pm$ 7.38
2	36.5 $\pm$ 6.74	35.5 $\pm$ 7.91
4	36 $\pm$ 8.12	34.7 $\pm$ 7.14
6	35.8 $\pm$ 8.08	32.5 $\pm$ 6.77* $\Delta$
8	36.0 $\pm$ 8.12	32.1 $\pm$ 7.55* $\Delta$
10	35.5 $\pm$ 8.31	32.4 $\pm$ 7.79*
12	35.6 $\pm$ 8.52	31.9 $\pm$ 7.52* $\Delta$

\*There was significant difference when compared with before practicing ( $P < 0.05$ );  $\Delta$ There was significant difference when compared with control group ( $P < 0.05$ ).

nificantly lower than that of control group. The beneficial effects of practicing Jianshenqigong-wuqinxi were more obvious for the subjects in the test group who had practiced Jianshenqigong-wuqinxi for six to twelve weeks ( $P < 0.05$ ). There was no significant difference of anxiety scores in control group before and after two to twelve weeks ( $P > 0.05$ ).

3) Scores of depression (**Table 3**) of test group were significantly lower than that of control group. The beneficial effects of practicing Jianshenqigong-wuqinxi were more obvious for the subjects in the test group who had practiced Jianshenqigong-wuqinxi for two to twelve weeks ( $P < 0.05$ ). There was no significant difference of anxiety scores in control group before and after two to twelve weeks ( $P > 0.05$ ).

4) Scores of memory (**Table 4**) were higher in test group than that of control group. The beneficial effects of practicing Jianshenqigong-wuqinxi were more obvious for the subjects in the test group who had practiced Jianshenqigong-wuqinxi for twelve weeks ( $P < 0.05$ ). There was no significant difference of memory scores in control group before and after two to twelve weeks ( $P > 0.05$ ).

**Table 3. Depression scores of subhealth after practicing Jianshenqigong-wuqinxi for twelve weeks.**

Time ( weeks )	Control group	Test group
0	40.68 ± 9.12	40.40 ± 8.86
2	39.90 ± 9.88	36.08 ± 9.47 <sup>*△</sup>
4	39.85 ± 9.98	35.78 ± 9.52 <sup>*△</sup>
6	39.53 ± 8.86	35.73 ± 8.79 <sup>*△</sup>
8	39.38 ± 8.88	35.60 ± 8.90 <sup>*△</sup>
10	38.92 ± 7.92	35.06 ± 9.15 <sup>*△</sup>
12	38.64 ± 8.61	35.34 ± 8.46 <sup>*△</sup>

<sup>\*</sup>There was significant difference when compared with before practicing ( $P < 0.05$ ); <sup>△</sup>There was significant difference when compared with control group ( $P < 0.05$ ).

**Table 4. Memory (digits) test of subhealth after practicing Jianshenqigong-wuqinxi for twelve weeks.**

Time ( weeks )	Control group	Test group
0	7.28 ± 2.53	7.13 ± 1.94
4	7.28 ± 2.53	7.63 ± 1.92
8	7.18 ± 2.23	8.2 ± 2.61
12	7.17 ± 2.47	8.86 ± 2.00 <sup>*△</sup>

<sup>\*</sup>There was significant difference when compared with before practicing ( $P < 0.05$ ); <sup>△</sup>There was significant difference when compared with control group ( $P < 0.05$ ).

## 4. Conclusions

1) Practicing Jianshenqigong-wuqinxi could promote health in people who have subhealth mental problems.

2) Practicing Jianshenqigong-wuqinxi could relieve bad feelings such as depression, anxiety of subhealth people and enhance memory.

## 5. Discussions

Many researchers have observed the effect of practicing Jianshenqigong-wuqinxi on different people. Jing-mei Wu found after 3-month practicing, Jianshenqigong-wuqinxi could improve the immunity of the people, and the immunity ability of woman practitioners grew even faster [7]. Ding-hai Yu found after 6-month exercise of Jianshenqigong-wuqinxi, the NK cell activity of exercisers in the experimental group was higher than that before exercise and control group [8]. But no scientific work studied the effect of Jianshenqigong-wuqinxi on subhealth people and no people observed the physiological and psychological changes of practitioners. We discovered the effects of practicing Jianshenqigong-wuqinxi on subhealth mental problems. Subhealth status is characterized by panic, short breath, dizziness, headache, insomnia, etc.

Subhealth is the major cause of many diseases [9].

People with subhealth problems could become severely ill later in their lifetime, which were highly correlated with their subhealth problems [10]. Therefore optimal intervention of subhealth problems is necessary. In our experiment we found that there were significant difference of subhealth scores between Jianshenqigong-wuqinxi practitioners and controls (**Table 1**), which suggested Jianshenqigong-wuqinxi could promote mental health of people who have subhealth problems. Comparison with controls, more cases of subhealthy practitioners became mentally healthy after practicing Jianshenqigong-wuqinxi for 3 months, suggesting the beneficial effects of Jianshenqigong-wuqinxi.

It was reported that tai chi could regulate psychological health of subhealthy people, and relieve bad feelings such as lassitude, memory loss, irritable, anxiety, insomnia, etc [11]. Jianshenqigong-wuqinxi is a kind of mildly intense aerobic exercise just like tai chi. From our experiment we found practicing Jianshenqigong-wuqinxi could relieve bad feelings such as anxiety (**Table 2**) and depression (**Table 3**), while enhance memory (**Table 4**). The reasons might be as follows: a) Jianshenqigong-wuqinxi is a kind of exercise that can regulate bad feelings such as anxiety and depression through releasing of biological macromolecules such as adrenocorticotrophic hormone, cortisol, catecholamine, opioid peptides, etc. These molecules are believed to be beneficial to psychological status [12,13]. b) Jianshenqigong-wuqinxi has multiple mental stages. Psychological self-regulating was required for practicing each stage of Jianshenqigong-wuqinxi. For example, when practicing the stage of 'tiger-xi', the practitioners will mimic a powerful tiger. When practicing the stage of 'deer-xi', the practitioners will mimic a gentle deer. Such changes of psychological stages were reported to be beneficial to reducing bad feelings [14].

It is therefore concluded that the effects of practicing Jianshenqigong-wuqinxi have significant beneficial effects on improving the overall mental health of people suffering from subhealth problems.

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