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# Alternative, Complementary & Integrative Medicine

**Short Review** 

# The Effect of Online Mindfulness Training on Fatigue-Predominant Subhealth

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# Abstract

The primary purpose of this study is to explore the effect of 4-week MBSR-based online mindfulness training on the fatigue-predominant subhealth population and to observe the impact of mindfulness interventions on their fatigue and health status. Through the Fatigue Self-Rating Scale (FSAS) and the Sub-health measurement scale (SHMS V1.0), 40 participants who met the inclusion criteria were selected for a randomised controlled study from June to August 2021. The experimental group received a 4-week online mindfulness training intervention, while the waitlist control group was set. Both groups completed the FSAS, the short form 36 health survey (SF-36), and the Five-Facet Mindfulness Questionnaire (FFMQ) four times. After that, changes in each score were sorted out, analysed by statistical methods, and concluded. The results show that after four weeks of online self-study mindfulness training, the intervention group's fatigue severity and health status in three aspects (physical, psychological and social) can be improved. Findings reflect that the 4-week online self-study model of mindfulness training is desirable because this model is simple and can be more widely used in clinical practice after further improvement in the future, which will help popularise mental and physical health care in society.

# **Fatigue-Predominant Subhealth**

According to the definition of the Sub-Health Professional Committee of the World Federation of Chinese Medicine Societies (WF-CMS), fatigue-predominant subhealth is "one of the most common types of sub-health, with fatigue as the main manifestation." Its criteria include two items: 1) it meets the criteria for sub-health, 2) fatigue as the main complaint, persisting or recurring for three months or more, and any one of the scores of physical fatigue, mental fatigue, fatigue consequences and overall fatigue in the FSAS reaches mild or

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above. What is more, fatigue-predominant subhealth is classified into three types refer to its symptom characteristics including physical, mental and mixed [1].

The term "fatigue" is defined by the "International Statistical Classification of Diseases and Related Health Problems (ICD-11)" updated by the World Health Organization in May 2021 as "A feeling of exhaustion, lethargy, or decreased energy, usually experienced as a weakening or depletion of one's physical or mental resource". It is also pointed out that fatigue could lead to a decreased capacity for work and reduced efficiency in responding to stimuli [2].

In the mid-1980s, Professor Buchman from the former Soviet Union discovered that the human body has an intermediate state that is neither healthy nor diseased, also known as "the third state". However, the concept has not been systematically developed until the early 1990s. Wang Yuxue, a professor at Qingdao University School of Medicine, integrated previous research and proposed "sub-health" as an intermediate state between health and disease states, believing it to be a dynamic process and independent stage [3].

# **Methods and Origins of Mindfulness Therapy**

In 1979, Kabat-Zinn founded mindfulness-based stress reduction therapy and developed it at the University of Massachusetts Medical Center in the United States by setting up a stress reduction clinic. This psychotherapy, called initially "Stress Reduction and Relaxation Program (SR-RP)", is based on Eastern Zen thought and is a pioneer in integrating mindfulness into Western medicine. Through 8 consecutive weeks of group training, participants practice sitting meditation, body scanning and mindfulness yoga to enhance their awareness of the present moment in a non-evaluative way. Afterwards, various therapies were developed based on MBSR, including Acceptance and Commitment Therapy (ACT), Mindfulness-Based Cognitive Therapy (MBCT) and Dialectical Behavior Therapy (DBT). These therapies are widely applied in clinical aspects [4].

## **Inclusion criteria**

- People aged 18-60 who complain of fatigue for 3 months or more, and who have moderate or severe fatigue after taking the FSAS.
- Have shown clinical manifestations of sub-health status, including:
- Mainly manifested by physical symptoms such as fatigue, sleep disturbance, or pain.
- Depression, restlessness, irritability, fear and timidity, or poor short-term memory. The main manifestations are mental and psychological symptoms such as depression and inability to concentrate.
- Mainly manifested by decreased social adaptability, such as reduced frequency of interpersonal interactions or tense interpersonal relationships.

- Those with any of the above 3 conditions that have persisted for more than 3 months and claim to have ruled out diseases that may cause the above symptoms.
- The score of any one of the three subscales in the SHMS V1.0 is lower than the cut-off score, that is, the physical sub-health subscale is <68 points, the psychological sub-health subscale is <67 points and, Social sub-health subscale <67 points [5].</li>
- Act independently and have a mental state that can cooperate with research.

#### **Intervention Design**

The researcher distributes mindfulness training materials to the experimental group promptly once a week through emails and messages. The intervention in the form of online self-study of mindfulness training lasted for 4 weeks, while the control group did not receive any intervention. During the study, the FSAS, SF-36 and the FFMQ were used before the intervention (t1), after 2 weeks of intervention (t2), after 4 weeks of intervention (t3), and 4 weeks after the intervention (t4). The scales mentioned above were used to evaluate the participants' statuses and the intervention effect of online self-study mindfulness training. In terms of compliance, this study progressed through mindfulness training record manuals filled in by volunteers. Volunteers must complete 80% or more of the training days in the intervention plan in order to be included in data analysis.

#### Findings

After 4-week online mindfulness training for the experimental group, the scores of the FSAS decreased. Reversely, the scores of SF-36 and FFMQ increased, and all the changes have statistical significance. In the experimental group, the severity of fatigue dropped from  $53.06\pm7.98$  to  $38.11\pm10.79$  (p=0.000). At the same time, the environmental specificity of fatigue and the results of fatigue also decreased significantly, while the level of fatigue in response to rest and sleep score increased slightly from  $9.61\pm2.64$  to  $11.06\pm1.80$  (p=0.015). The above differences were statistically significant (p<0.05). The differences between groups in fatigue severity and fatigue results after intervention were statistically significant (p<0.001) as well. In the control group, except for the fact that the fatigue severity dropped from  $57.84\pm8.16$  before intervention to  $52.32\pm6.13$  (p=0.014), the differences in other items were not statistically significant (p>0.05), indicating the effect of the intervention is apparent.

In the overall health aspect, the overall health status of the experimental group improved, and the general health score increased from  $38.28\pm15.81$  to  $60.50\pm16.89$  (p=0.000); physiological functions, physical pain, energy, social function, emotional function and mental health scores all increased (p<0.05). In the control group, there was no statistically significant difference in all items before and after the intervention (p>0.05). The above reflects that mindfulness training can effectively improve health conditions.

#### Conclusion

Overall, 4-week online mindfulness training can help improve the fatigue and health status of the fatigue-predominant subhealth population. This study also found that general health status, social function, mental health and mindfulness level were negatively correlated. The higher the scores of these items, the lower the fatigue severity. To conclude, mindfulness training is a safe and easy-to-operate method of mental health care. It can be a new self-healing option without side effects, especially when the epidemic has raged recently. It shows a promising future in invigorating oneself and preventing diseases through long-term practice.

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