Exploration on The Psychological Mechanism of Mindfulness Meditation

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Abstract. With the accumulation of social understanding and practical experience of mindfulness meditation, mindfulness meditation has been accepted and applied by more people in practical life situations. Mindfulness meditation has become one of the important research topics today. Due to the current research focus being more on the correlation research and hypothesis description of influencing factors of mindfulness meditation, there is less empirical research on the mechanism exploration of mindfulness meditation. Further summarize the existing relevant research results and methods, and explore the psychological mechanisms of mindfulness meditation from its origins, concepts, and development, providing case and theoretical support for subsequent empirical research on mechanisms. A large number of researchers have found that mindfulness meditation has a positive regulatory effect on negative emotions in various contexts, and the concept of "mind" related to Buddhism and Zen in mindfulness meditation has similarities with the self-concept studied in Western psychology. Correctly understand the complexity of the development of mindfulness meditation, grasp core concepts in future empirical exploration and research on the psychological mechanisms of mindfulness meditation, and fully utilize new technologies to create more possibilities.

1 Introduction

Meditation is often associated with the concept of mindfulness in academic research both domestically and internationally. Meditation is a Buddhist vocabulary, and the most in-depth part of Western research on Buddhist meditation is mindfulness meditation [1]. After entering the world of Western psychology, meditation techniques have undergone a profound transformation of Western psychological treatment paradigms, forming a relatively complete system and local characteristics of mindfulness meditation techniques [2]. According to data, in the past decade, scholars both domestically and internationally have maintained a sustained focus on mindfulness meditation. With the deepening of people's understanding of mindfulness meditation, mindfulness meditation as a way to regulate emotions and understand oneself is being applied by more people in various situations of life. More and more scholars are also starting to conduct research on mindfulness meditation from various aspects. According to statistical data (see Table 1), there are differences in the research focus on mindfulness meditation both domestically and internationally, which also reflects the differences in the level of research progress and cultural context both domestically and internationally [3].

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Table 1. Comparative table of mindfulness research keywords at home and abroad [3].

Multiple studies have shown that mindfulness meditation has a significant impact on emotional adjustment and self-awareness, and has practical significance for different populations (such as cancer patients) and historical backgrounds (such as the...

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pandemic) [4]. Clarifying the core concepts and psychological mechanisms of mindfulness meditation can better help establish a treatment model centered on mindfulness meditation and flexibly adjust to respond to various populations and situations.

2 Mindfulness meditation

Zen Buddhism, which is represented by the collision and fusion of Indian culture and Chinese traditional culture, contains a wealth of psychological treatment ideas. This also includes humanism and cognitive behavioral therapy [5]. With the expansion of the influence of Western humanism, Western psychology has a strong interest in Zen. Zen also further combined with Western psychology and made certain eastern contributions to the western psychotherapy system. For example, it belongs to a category of relaxation techniques in behavioral therapy, and "meditation" is a good example of integration [5].

Mindfulness has been widely circulated as a popular term in the past decade. It was originally defined by Kabat-Zinn, J. as "cultivating awareness by purposefully focusing attention on the present and perceiving the experience of the present moment without judgment" [6]. Mindfulness technology has a high level of participation in psychotherapy, and stress relief therapy and mindfulness cognitive therapy are the products of the combination of mindfulness technology and psychotherapy. Mindfulness can also be used as a good auxiliary technique by psychotherapists according to different treatment scenarios [7]. After the concept of mindfulness entered China, it was convenient for meditation in Chinese Zen to echo each other. There are very similar aspects between mindfulness and meditation. In terms of user behavior, mindfulness and meditation require individuals to explore inward while maintaining a state of focus and calm. And the concept of meditation also has a more religious color because of its origin. After Westernization, the religious color of mindfulness meditation has also weakened. Mindfulness meditation, as a conceptually integrated spiritual training method between China and the West, has also received widespread attention.

3 The influence of mindfulness on individual anxiety and depression

3.1 Situation of similar studies

In previous research literature, mindfulness meditation has been proven by many scholars to have a significant improvement effect on individuals' negative emotions (such as depression and anxiety) through empirical research [4]. Most of the subjects who participated in previous studies have strong negative emotions themselves. Researchers pay more attention to certain specific groups, some of whom are patients with physiological or psychological diseases. These groups have depression and anxiety due to diseases, and most of them are more serious, such as cancer patients, diabetes patients, AIDS patients, patients with generalized anxiety disorder and panic disorder [4]; The other group is pregnant women, athletes, or students, most of whom have not been diagnosed with diseases, but are more prone to negative emotions such as anxiety and depression due to their unique environment and identity [8,9]. Even if there is no special group directly selected, researchers will recruit subjects in a wider range in combination with the background of the times and modern technology to determine suitable candidates, such as using WeChat official account and other ways to publish advertisements to the society after determining the requirements of the research object [10]. Researchers who recruit participants on a larger scale usually require them to be adult, have no history of mental illness, have not experienced mindfulness or meditation (to ensure the effectiveness of research interventions), and have been tested to have a certain degree of depression and anxiety (researchers determine the emotional state of prospective participants by using a scale or conducting direct interviews) [9,10]. The selection requirements and methods of research subjects also demonstrate the humanistic care of researchers. In addition, in the design of intervention experiments on related issues, researchers generally provide mindfulness training for participants for 8 weeks, and the timing of intervention training is already relatively mature. This also reflects the completeness of research in this field.

In addition, scholars' research on this type of problem has a relatively fixed format, measuring the level of anxiety or depression of participants through standardized scales, followed by continuous mindfulness intervention for a certain period of time, and finally measuring the level of anxiety or depression of participants again. The effectiveness of the intervention method is analyzed through comparison between pre and post tests and the setting of the control group. In similar studies, researchers often use the Five Factor Mindfulness Scale (FFMQ) to measure mindfulness levels, the Concise Mood Scale (POMS) to measure emotions [9,10], and use other scales in conjunction with specific problems, such as the Perceived Stress Scale (CPSS), the Emotional Regulation Difficulty Scale (DERS), and the Depression Anxiety and Stress Scale (DASS). In this type of problem, correlation analysis and analysis of variance are mainly used, such as independent sample T-test, repeated measurement analysis of variance. In addition, researchers will also use covariance structure analysis, such as constructing structural models, to better explore the relationship between variables with positive thinking intervention and negative emotions of participants.

In the study of the impact of mindfulness meditation on individual anxiety and depression, the results showed that the level of mindfulness, depression, and anxiety of the subjects had improved, and mindfulness intervention was highly effective in improving individual mindfulness level and alleviating depression and anxiety. In 2015, Xu Wei et al. recruited suitable participants through university lectures. After an 8-week mindfulness-controlled intervention experiment, it was
found that the negative emotions of the participants could be effectively improved through mindfulness training, and the improvement of mindfulness level is an important factor in the emotional relief caused by the intervention[9]. In 2018, JarukasemthaweeSomboon et al. conducted a cross-sectional mediation study, and the results showed that Thai adolescents significantly benefited from mindfulness training, and difficulties in contemplation and emotional regulation were mediators between mindfulness and psychological pain [8]. In 2019, Yu Shuting et al. conducted an 8-week mindfulness intervention control training on 120 participants who met the research requirements [10]. The results showed that participants in mindfulness training had fewer negative emotions and showed significant changes compared to before the intervention.

3.2 Research conclusion and comparison
Mindfulness training improves participants' level of mindfulness and their ability to perceive negative emotions. As a result, participants have a clearer understanding of their inner emotions and thoughts, and can better maintain inner peace. Some research results suggest that mindfulness training can also enhance positive emotions, but some studies have not yielded similar results, and it is speculated that mindfulness training brings about inner peace, i.e. lower emotional arousal. At the same time, many researchers have proposed that by setting up a control group, subjects might be affected by the Hawthorne effect. The use of standardized scales for pre and post testing may be influenced by the participants' memory level or personality traits. The selection of different populations can also have a significant impact on the study. For example, when targeting non-clinical and clinical participants, special considerations need to be taken into account the methods and timing of mindfulness interventions to minimize errors.

4 The relationship between mindfulness meditation and self-concept
Mindfulness has different definitions in different contexts. Generally speaking, this term refers to focusing attention on the current state of self-awareness and experience, characterized by curiosity, openness, and receptivity [11]. Mindfulness is also a universal form of Buddhist practice. According to Kabat-Zinn, J.'s research, historically, mindfulness has been referred to as the "heart" in Buddhist meditation, and this concept is also at the core of the dissemination of Buddhist teachings [5]. The concept of "heart" is proposed by Buddhism to study and solve the three types of human sins (greed, hatred, and ignorance), which hides a universal rule and the truth of life behind it. In a broad sense, "heart" represents a person's heart or soul; In a narrow sense, the "heart" mentioned in Buddhism is similar to the Tao in traditional Chinese culture, representing the core beliefs of their respective religious schools and their ways of understanding the world and solving suffering. The concept of "heart" has also been inherited and adopted in Zen, which is derived from Buddhism. Zen was founded by the sixth ancestor Huineng, and it is a unity of practice and theory [12]. For Buddhism and Zen, all forms of meditation are just methods and appearances, and their core lies in cultivating the "heart". By cultivating and improving spiritual or psychological literacy through meditation and other means, one can change their mindset and way of facing the world and solving problems, and achieve a state of self harmony in life.

The concept of "mind" in the ontology mentioned by Zen has similarities with the self-awareness in Western psychology. In the research of Western psychology, the self can be divided into "narrative" self-awareness (NS) and "minimal" self-awareness (MS). The former relies on situational memory and emphasizes the individual's stable and unchanging self across time and space concepts, while the latter relies on perception, cognition, and experience to emphasize the absolute certainty of the individual's current experiential identity [13]. The concept of "minimal" self-awareness is more similar to that of "heart". In the combination with Eastern philosophy, Western psychology has proposed a "selfless" mode of processing phenomena (SL) based on the research of Buddhist philosophy to explain Buddhism's attitude towards self-concept. Long term mindfulness meditators can generate and maintain a state of selflessness. In Buddhism, self-concept is believed to be illusory and the source of all pain. This is different from the concept of "heart" studied in this article. According to Freud's theory of personality structure, the self-concept criticized by Buddhism is more like the "id" in personality theory, related to innate instincts. In mindfulness meditation, the "heart" is more like the "ego", which enhances mindfulness through practice and enables better self-awareness and control.

5 Discussion and suggestion
At present, there are few empirical studies exploring the mechanisms of mindfulness meditation, and more research focuses on the correlation between mindfulness meditation and the hypothesis description of its impact mechanisms. On the one hand, this enriches people's understanding of mindfulness meditation from various perspectives, establishing a larger and more comprehensive network of correlations. On the other hand, this research status indicates that research on mindfulness meditation is still at a relatively superficial level, and there is a large amount of research space. Correlation research provides theoretical support for people's practical applications, and as a result, mindfulness meditation has gained recognition from a larger population. With the deepening understanding of mindfulness meditation, more and more people are beginning to try this spiritual training method in real life to regulate their physiological and psychological states. Whether it is individuals or families, whether it is school teaching or social activities, mindfulness meditation is entering people's lives and becoming a way for people to
solve physiological or psychological problems. A large amount of literature has proven that mindfulness meditation has a positive impact on people, especially for those in adverse situations (negative psychological or physiological conditions) with a more significant moderating effect. With the development of research technology, scholars have also begun to conduct more targeted research on mindfulness meditation by combining new technologies. For previous research topics, new technologies can provide new research perspectives and make up for the shortcomings of previous research. This also brings more possibilities for exploring and researching the mechanisms of mindfulness meditation. In addition, previous big data statistics have shown that the research hotspots of mindfulness meditation vary across different cultural backgrounds. In exploring the specific mechanisms of mindfulness meditation, attention should be paid to cultural and social differences.

Mindfulness meditation is a product of the fusion of various schools of thought in people's practice of exploring the world outward and understanding themselves inward, with the characteristics of development and richness. The confusion of various concepts and theories also leads to misunderstandings and difficulties in the process of practical implementation and research exploration. When studying related issues, one should remove appearances and grasp the essence. Due to the numerous sources of theories and the involvement of religious factors, conceptual review based research should be developed together with practical exploration based research, providing theoretical and data support to each other, making the research clearer, more scientific, and logical. Summarized research summarizes the latest research results, discovers and extracts more universal laws, and combines various theories (such as Western and Eastern, modern science and religious scriptures, etc.) to make reasonable speculations, providing more targeted guidance for empirical exploration research and simplifying complexity. Exploratory research aimed at practice should closely pay attention to cutting-edge technologies and current political hotspots (cultural and regional differences are worth noting), apply new technologies to problem research, delve into previous research topics while keeping up with the development of the times, enrich the research context of mindfulness meditation, and provide data support for the exploration and summary of universal laws.

It is worth noting that in future empirical exploration research, attention should be paid to distinguishing and avoiding overly complex research or falling into misunderstandings. In this article, by studying the concept of self in mindfulness meditation, it is found that different theories of self-concept in Western psychology have varying degrees of similarity and differences with the concept of "mind" in Zen. In future research on the mechanism of mindfulness meditation, researchers should carefully compare and differentiate before practice, select more suitable theories for support, and reduce the trouble in experimental design and analysis stages.

6 Conclusion

Through a summary and analysis of previous literature, it can be seen that the research field focused on mindfulness meditation is mostly related research, while there are few empirical exploratory studies on the impact mechanism of mindfulness meditation. Due to the complexity of the integration of various fields (such as religion and psychology) involved in mindfulness meditation, this may be the reason why empirical research is difficult to advance in depth. But with the improvement and development of research tools, there is hope that research difficulties will gradually be overcome. In addition, recent big data statistics show that mindfulness meditation has been increasingly valued by researchers, and the research content is often combined with specific social contexts. There are differences in the research content and level of mindfulness meditation between China and foreign countries, mainly due to differences in cultural and social development levels. From a public perspective, mindfulness meditation has also begun to penetrate into people's lives and become an effective way for people to regulate their emotions and physical and mental states. This also demonstrates the necessity and importance of mindfulness meditation research.

References