

# Review of Mindfulness Uses, Influencing Factors and Application

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## ABSTRACT

Mindfulness is the practice of consciously focusing your attention on the present moment, without assessment, and is a skill developed through meditation or other exercises. Mindfulness stems from Sati, an important element of the Buddhist tradition, which is based on Zen and Tibetan meditation techniques. This study reviews mindfulness interventions, which is a method to enhance mindfulness levels including methods like MBSR, MBCT, and DBT. The factor that could influence mindfulness effect includes mindfulness attention, emotion, cognition, physiology, social relationship, and working performance. At the same time, this study also discusses mindfulness application in work place, study field, and daily life like eating behavior, and also further discusses the possible future direction of mindfulness.

**Keywords:** *Mindfulness, Intervention, MBSR, MBCT, DBT, Mindfulness application.*

## 1. INTRODUCTION

This study aims to provide a comprehensive and detailed review of mindfulness. There have been similar literature reviews before, but this study provides a more comprehensive approach to studying mindfulness and proposes its application in different fields. Studies show that mindfulness plays a positive role in people's daily life, and further affects people's physiological and psychological states. It is very promising to understand the intervention and application of mindfulness, and it is important to review the existing research results and discuss the possibility of the development of mindfulness. The study reviewed mindfulness interventions, which are methods of improving levels of mindfulness, including MBSR, MBCT and DBT. The factors influencing the effect of mindfulness include mindful attention, emotion, cognition, physiology, social relationship and job performance. At the same time, this study also discusses the application of mindfulness in daily life, such as workplace, learning field and eating behavior, and further discusses the possible development direction of mindfulness in the future.

An operational definition of mindfulness is consciousness of the unfolding of experience consciously, in the present moment, without judgment. Historically, mindfulness has been referred to as the "mind" of Buddhist meditation [1]. It is at the heart of the Buddha's

teaching. It should also be noted that mindfulness now is a kind of attention and an inevitable universality and there's nothing particularly Buddhist about it nowadays.

Mindfulness comes from Buddhist [2]. Part of the contribution of the Buddhist tradition is to emphasize simple and effective ways to cultivate and improve this ability and bring it to all aspects of life. Affirming in this respect, mindfulness gains the clearest and most systematic clarity and development of the Buddhist tradition. Mindfulness is the basic attention stance of all schools of Buddhist meditation: the Theravada tradition of Southeast Asian countries; The Mahayana school of Buddhism in Vietnam, China, Japan, and Korea, as well as the Tibetan Buddhist Vijayanagar tradition found in Tibet, Mongolia, Nepal, Bhutan, Ladakh, and now the majority of Tibetan exile communities in India. In these traditions, the practical practice of mindfulness is always embedded within a larger conceptual and practice-based ethical framework, guided by harmlessness.

## 2. MINDFULNESS INTERVENTION

Mindfulness intervention is the method to improve the level of mindfulness. Different methods are used to teach mindfulness, and the mindfulness training can include meditation practices and other forms of mindfulness practices.

Mindfulness-based stress reduction (MBSR) is an eight-week evidence-based program that offers secular, intensive mindfulness training to assist people with stress, anxiety, depression and pain. Moreover, Mindfulness-Based Cognitive Therapy (MBCT) is designed to help people who suffer repeated bouts of depression and chronic unhappiness. It combines the ideas of cognitive therapy with meditative practices and attitudes based on the cultivation of mindfulness. MBSR and MBCT have the essential qualities of meditation for both the patient and the therapist.

Dialectical behavior therapy (DBT) is a modified form of cognitive behavior therapy (CBT). Its main goal is to teach people how to live in the present, develop healthy ways to cope with stress, regulate their emotions, and improve their relationships with others. Linehan[3] explains that DBT emphasizes the practice of part of the activity of mindfulness because severely disturbed patients are unlikely to participate in meditation due to lack of motivation or ability, or both.

The early work of MBSR programs on patients with chronic pain who do not respond well to traditional medical treatments suggests that there is long-term scientific interest in applying mindfulness interventions to physical health therapy [2]. Much of the interest in the field of physical health is based on the idea that mindfulness interventions can foster greater physical awareness, promote relaxation, and improve stress management and coping skills, all of which can promote physical health and reduce disease risk. Creswell & Lindsay [4] have established a mindful stress buffer account, which assumes that stress reduction and recovery pathways explain the effects of mindfulness interventions on various physical health outcomes. This is based on the idea that learning how to monitor experiences in a receptive manner is an emotion-regulation skill learned from mindfulness interventions that can develop resilience to stress and the ability to cope with it. In addition, these stress buffering effects in turn reduced the negative effects of stress on increasing the risk of stress-related diseases. Consistent with this claim, a growing number of rigorous randomized controlled trials have shown that mindfulness interventions affect stress-related physical health outcomes, from chronic pain to immune system function to health outcomes for specific diseases.

### **3. INFLUENCE OF MINDFULNESS**

#### **3.1 Attention**

In theory, mindfulness affects human functioning primarily through attention, which then alters other basic areas of function. Mindfulness has been shown to improve three qualities of attention -- stability, control, and efficiency. Mindfulness keeps attention steady. It has been estimated that the human brain spends about half of

our waking hours wandering, but mindfulness can stabilize present attention [5]. Temperament mindfulness and mindfulness training ranged from hours to thousands of hours were associated with reduced mind-wandering. Experienced mediators also showed reduced activation of neural networks, indicating that they were distracted, with patterns of brain activity consistent with sustained attention [6]. Improved attention stability may result from noticing mind wandering and returning to the focus of the present moment, which is a core feature of mindfulness.

Attention control refers to appropriately directing attention among competing requirements. There is evidence that mindfulness supports attention control and reduces attention to distracting information by reducing habitual allocation of attention [7].

Mindfulness also supports attention efficiency and economic use of cognitive resources. Attention becomes more efficient when mindfulness increases the control of attention and reduces attention to thoughts or activities that are outside the task. Studies have shown that mediators spend less attention resources on dealing with distractions and do not overpay attention to the initial stimulus and are able to detect subsequent stimuli more quickly [8].

#### **3.2 Emotion**

Emotion is a complex reaction pattern, involving experiential, behavioral, and physiological elements, by which an individual attempts to deal with a personally significant matter or event.. Mindfulness influences emotions through attention, which influences the selection of observed stimuli and changes the way they are evaluated and evaluated, ultimately resulting in downstream emotional responses [7].

Emotional responses exhibit a life cycle, and mindfulness appears to shorten this cycle, reducing the time to peak emotional arousal and return to baseline. Mindfulness accelerated recovery from negative emotions after emotional induction [9].

In a related way, mindfulness also seems to affect responses to emotional stimuli. Individuals prone to mindfulness show fewer negative emotions after stress [10]. Most studies have examined responses to negative emotional stimuli, but neurological studies of trait mindfulness, long-term mediators, and novicers have shown that mindfulness also inhibits emotional responses to positive emotional stimuli [11].

The reduced response to emotional stimuli may be explained by changes in mindfulness-fostered emotional assessments. Stimuli are habitually rated as positive or negative towards the self [12], but mindfulness-experience processing may promote a more neutral evaluation, that is, viewing experiences without habitual self-reference. When conscious individuals observe their

experiences more objectively, sensory processing and narrative self-processing of brain networks seem to be decoupled, providing a degree of psychological distance [12].

### **3.3 Cognition**

There is considerable research linking mindfulness and working memory and cognitive flexibility. Although general mental ability is generally considered to be a stable individual difference, working memory and fluid intelligence are more malleable aspects of cognitive ability. Working memory is a short-term buffer that can store and process information that links attention to higher-order cognition [13]. A series of interventions with different populations have shown that mindfulness increases working memory capacity [14]. Mindfulness traits associated with working memory capacity even after controlling for general intelligence. Whether transient or lifelong, mindfulness training may also benefit fluid intelligence, the ability to process and respond to new information by evaluating patterns and relationships.

Mindfulness is also associated with flexible cognition, which supports adaptation by generating new perspectives and responses. The meditative experience is associated with divergent and convergent thinking [15] and insightful problem solving. Ding et al found that participants randomly assigned to a short mindfulness exercise were more likely to seek out new perspectives when they were stuck with a problem, and their neural patterns suggest that cognitive flexibility stems from greater attention control. Taken as a whole, these results suggest that mindfulness improves cognitive ability and flexibility, at least in part through its effects on attention [16].

### **3.4 Physiology**

In addition to its impact on the self-regulation of emotions, mindfulness also has physiological effects. One of the strongest empirical findings linking mindfulness to physiology is its role in stress response. Positive focus has been associated with a number of neurobiological mechanisms involved in the regulation of stress, including suppression of stress responses in response to various cognitive and social threats and faster return to baseline levels [17].

Mindfulness is also associated with changes in the brain, called neuroplasticity, including structural shifts in brain tissue. In fact, the brain structure of mindful practitioners is so unique that they can be accurately identified by brain scans.

More broadly, mindfulness is associated with the aging process, and preliminary evidence suggests that mindfulness training may "slow, stop, or even reverse

age-related brain degeneration" [18]. These authors found that experienced meditators showed less age-related neurotissue degeneration [18].

### **3.5 Social relationship**

Mindfulness also plays an important role in people's daily life, for example, mindfulness has significant influence on social relationships among people. Preliminary research has linked mindfulness to elements of performance -- specifically, moral, pro-social, and deviant behavior. Reb, Narayanan and Ho [19] found that trait mindfulness is associated with higher moral and pro-social behavior and lower bias. Krishnakumar and Robinson [20] also found an association between trait mindfulness and lower counterproductive behaviors, an effect mediated by reduced hostility.

Although mindfulness is an individual quality, initial evidence suggests that it affects interpersonal behavior and quality of dyadic and work group relationships. For example, both dis-positional mindfulness and mindfulness training among health care practitioners relate to improved communication quality, including open listening with increased awareness and less evaluative judgment of others [21]. Reb and colleagues found that leaders' dis-positional mindfulness was associated with more favorable subordinate attitudes and behaviors via improved relationship quality. Through better self-regulation of undesirable responses to negative work events, dis-positional mindfulness and mindfulness training may improve relationships [22].

Previous study demonstrated that trait mindfulness among intimate partners was linked positively to relationship quality [23]. Likewise, couples who participated in mindfulness training showed improvements, compared to controls, in relationship quality and functioning, including relationship satisfaction, relatedness, closeness, and acceptance of the partner [24].

Mindfulness may improve relationships via sustained attention to interaction partners, which improves communication and increases the capacity to communicate emotional information [25]. State mindfulness was associated with better communication quality between intimate partners, as rated by experts. In addition, individuals higher in trait mindfulness were better able to maintain a positive tenor and had reduced emotional reactions during partner conflict [26].

### **3.6 Work Performance**

The broad impact of mindfulness in functional areas such as, cognitive, emotional and physiological seems to further influence a wide variety of workplace outcomes. There is growing evidence of the impact of mindfulness on a range of performance categories,

including work, task, citizenship, deviation and safety performance.

### *3.6.1 Work performance in different areas*

Work performance in health care. Mindfulness may be linked to performance among health care workers. For example, Beach et al.[27] found that higher clinician trait mindfulness was associated with more favorable patient evaluations of communication quality and overall satisfaction. Similarly, the mindfulness intervention improved the family friendliness of the admission team. Finally, the performance of psychotherapists who received mindfulness training appeared to favor patient outcomes, as patients reported more favorable symptom outcomes, such as reduced anxiety and hostility, compared to patients of control therapists[28].

Work performance in safety. Two studies suggest that mindfulness may also be linked to safety performance. In a study of nuclear power plant employees[29]. A significant positive correlation was found between trait focus and self-reported safety among workers responsible for complex tasks. Subsequent studies replicated this finding, with the strongest correlation among more experienced and intelligent employees [30]. In summary, initial evidence supports the role of mindfulness on job performance, but more experimental evidence is needed, and occupation, task characteristics, and background may be important boundary conditions.

### *3.6.2 Difference aspects in performance*

Empirical evidence suggests that mindfulness may affect performance in four aspects, including performance levels, performance variability, and performance in disruptive or threatening environments.

First, mindfulness may enhance performance levels. According to Dane's[31]contingency, mindfulness expands attention span. Effective attention means reducing the cost of attention, suggesting that mindfulness allows for more steady and controlled attention in everyday environments where individuals are prone to errors caused by attention lapses. In addition, the cognitive, emotional, physiological and behavioral changes improved by mindfulness may be key mechanisms that promote performance.

Second, mindfulness may reduce changed in performance. There is increasing recognition of the importance of performance variability, especially catastrophic minimum performance marked as a trough[32]. Attention stability and higher-order regulation of mindfulness-induced behavior may be important mechanisms for reducing trough and performance variability. An open and controversial question is whether mindfulness works on both sides of the variability equation by reducing performance troughs and peaks.

Third, mindfulness may help individuals to cope with disruptive or threatening environments. By stabilizing and controlling attention, and by enhancing cognitive ability and flexibility, mindfulness can promote agility to cope with the turbulence and discontinuity of the environment. As their cognitive abilities increase, the mindful worker's cognitive resources will expand and may be able to use them more effectively in a distracting environment. Modern workplaces are often full of distractions and interruptions that can challenge attention control and impair occupational functioning. Mindful individuals may be better able to dissociate themselves from thoughts and emotions of interfering tasks or events[33] and be able to continuously engage in expected tasks. Besides, internal distractions can also be managed through mindfulness. Studies have shown that five minutes of mindfulness induction can eliminate this mathematical performance effect [34].

## **4. DISCUSSION**

Current studies have already reviewed mindfulness interventions, and we also have analyzed the influence of mindfulness. Moreover, this study aims to further discuss mindfulness application in daily life, including application in work place, academic life, and daily life.

### ***4.1 Considerations for actual deployment in work place***

Mindfulness training programs are increasingly being used in the workplace. Often truncated versions of validated procedures, these adaptations are made without a specific understanding of how and why these procedures work. Evidence from multiple fields of science suggests that mindfulness may benefit a range of human functions that are important to organizations. Combining mindfulness with other training may yield beneficial synergies. Among physicians, for example, combining mindfulness training with narrative medicine has produced positive changes in empathy, well-being and ability to relate to patients [35]. By promoting changes in functional areas, mindfulness training can help lay the foundation to support the effectiveness of leadership, teamwork, and other training programs.

However, there are some methodological issues to consider as we translate mindfulness research into workplace applications. Much of the experimental evidence for mindfulness comes from non-workplace samples in laboratories, raising questions about universality. Although mindfulness, especially in the work environment, is still an emerging field that could benefit from exploratory qualitative and cross-sectional studies, it is mature enough to require research using a more rigorous design [36].

Future study should also include carefully considered control variables. Studies of mindfulness in the

workplace often lack sufficient measurements of common individual differences to provide alternative explanations for the effects of mindfulness. The study also did not typically control for organizational environments that may modulate the quality of mindfulness and the relationship between practice and workplace outcomes.

Besides, future goal paradigm research can investigate the relationship between goal establishment, pursuit and realization under the effect of mindfulness. For example, the goal paradigm in laboratory experiments can examine the effect of transient mindfulness intervention on task performance by manipulating feedback titers and the degree of self-relevance. Laboratory studies may also explore whether attention and emotional response processes mediate this effect. Accompanying field experiments can be particularly informative.

#### **4.2 Considerations for actual deployment in academic field**

Moreover, many research have found that mindfulness have positive influence on high school students in academic field. In a study of mindfulness meditation techniques. Beauchemin et al.[37] conducted a prepost uncontrolled design intervention mindfulness meditation classroom with 34 volunteer students with learning difficulties in a special school setting. Results found that there were significant differences between self-rated anxiety and social skills and teacher rated social skills and academic achievement after the test.

While these results initially seemed positive after a brief intervention, future study should further investigate inferences about causality. There is potential subjectivity and bias in reporting due to participant and teacher expectations, absence of a control group, small sample size, recruitment methods and the potential impact of non-participant involvement in intervention Settings. The relative inexperience and short training of teachers may be a problem, although it may not be significant in this context as this was not an MBSR based intervention.

Besides, to empirically validate positive awareness interventions in children and adolescents, the recommendations of adult studies are the same: methodologically sound large-scale randomized controlled trials in a range of questions and populations.

#### **4.3 Considerations for actual deployment in daily life**

In our daily life, people are often exposed to cues about high-energy foods that motivate them to eat. Mindfulness is a useful tool to promote healthy eating behaviors. Previous studies found that food cues can lead to unhealthy eating behaviors, for example by

inducing cravings and other motivational processes and decentralization can reduce this response to food cues.

Keesman et al.[38] conducted that mindfulness interventions increase the likelihood that the experience reaches consciousness, which may facilitate the effective application of a decentralize perspective, as a person may be more likely to notice food-related thoughts and cravings at a very early stage. The ability to regulate attention may further promote body awareness, such as satiety, or increase awareness of behaviors triggered by habits rather than reflective choices, thus helping people reduce impulsive eating choices. Thus, developing traditional approaches to decentralization through meditation may have the added benefit of promoting healthy eating.

Future research should not only investigate the overall relationship between mindfulness and eating behaviors, but also propose contingency theories to hypothesize how specific mechanisms affect eating behaviors. Besides, other daily behaviors, like green consumption and safety driving, which are both related to self-control, should also be investigated on how to promoted by mindfulness.

### **5. CONCLUSION**

This study reviews interventions on mindfulness and its effects on attention, cognition, physiology, social relationships, and job performance. At the same time, we pointed out the application of mindfulness in work place, study field and daily life, and proposed the possible direction of mindfulness deployment in the future. In conclusion, mindfulness is effective to improve people's physical and mental health, and its application could help people having a better-quality life. However, there are still many improvements, such as the research methods. Future research should broaden the scope of the experiment in the application of mindfulness.

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