



Review

Meditation as Source of Higher States of Consciousness: Mind and Body Healing

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Abstract

The practice of meditation has been recognized for more than 5,000 years and raised interest in many scientific fields. Yet, meditation is often misconstrued as an activity to empty the entire contents of one's mind. Whereas, in the contradictory fact, studies have shown how meditation helps individuals get acquainted with higher and deeper levels of consciousness through reportedly positive activities on brain. Furthermore, findings also identify meditation as an effective approach to mind-body intervention. This paper is a review on the comprehensive understanding of meditation and how it engages with a phenomenon where the mind and body is seen from a unified perspective, also in the sub-topic will be discussed how artificial intelligence contributes as a convenient tool to facilitate mind-body healing practice through meditation. Findings may help to introduce the general overview of meditation practices that can be adopted to improve mental health in the midst of this digital era.

Keywords: Meditation; consciousness; mind-body intervention; mind-body healing.



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Introduction

The era of technology has revolutionized humans' lives in almost every sector, including how perspectives and behaviors are produced. Over the years, it is more than common to find individuals process information very quickly, often resulting in absorbance of a wide assortment of information, whether it is favorable or unfavorable to one's mental health. The nature of technology that easily brings distraction through irrelevant stimuli processed by individuals parallels to the lack of one's consciousness in performing an activity. Whereas, failure of fully engaging or being conscious of one's thoughts and behaviors can lead to several detriments; from incomplex psychological cases such as the absence of clear thinking and poor decision making, to severe medical impairment such as disorientation and memory loss.

To attain higher states of consciousness, one must comprehend the term “consciousness” itself. Consciousness is customarily defined as the awareness of one’s self or one’s environment wherein the aspect of understanding plays an important role (Brooks, 2016). In addition, consciousness also refers to the quality or state of wakefulness, involving the totality of sensations, perceptions, ideas, attitudes, and feelings. States of consciousness is conceived as the interaction of an extensive number of neurological and psychological processes, where reaching an altered state of consciousness involves an intense degree of concentrating one’s attention. There are suggestedly five basic ways of producing alterations in consciousness: (1) by decreasing exteroceptive stimulation and/or motor activity; (2) by raising exteroceptive stimulation and/or motor activity and/or emotion; (3) by raising alertness or mental involvement; (4) by lessening alertness or relaxing the critical faculties; and (5) by change or modification in the body chemistry or neurophysiological functioning (Taylor, 2005).

In line with the approaches of producing alterations in consciousness, the practice of meditation has been recognized for more than 5,000 years and continuously becoming an interesting field for research. From its historical view, meditation was introduced to the United States early in the 20th century by Swami Vivekananda and popularized by Paramahansa Yogananda concurrently with Yoga (Puff, 2013). However, many people still misconstrue meditation as an activity to empty the entire content of one’s mind. It is also perceived to be done in an identical posture, for instance, sitting on the ground with crossed legs, hand resting on the knees, and eyes slightly narrowed or even completely closed. Whereas, in the contradictory fact, meditation is not just sitting still and emptying the mind. Seen from its meaning, the word “meditation” comes from the Latin “*meditari*”, with the understanding of engaging in contemplation and reflection. It is fathoming all the levels of ourselves and experiencing consciousness within, through specific procedural and attentional training to mindfulness. This activity of contemplation and reflection utilizes different kinds of anchor of one’s attention, such as a word, breath, sound, object, or sensation. Perceived from the view of the experts, meditation is a complex process aimed at self-regulating both mind and body.

This paper aims to discuss how meditation helps individuals get acquainted with higher and deeper levels of consciousness through reportedly positive activities on brain. Hypothetically, the psychological and neurophysiological modifications associated with meditation would identify meditation as an effective approach to mind-body intervention. Also, the purpose of this study is to see how artificial intelligence contributes to facilitate mind-body healing practices, including meditation.

Method

The method used in this paper is content analysis based literature review. Content analysis is defined as: “an approach to quantify qualitative information by systematically sorting and comparing items of information in order to summarize them” (United States Government Accountability Office, 2013). There are two general categories of content analysis: conceptual analysis and relational analysis. Specifically, the method used in this paper is relational analysis, that focuses on finding relationships between concepts. Steps for conducting relational analysis, including: (1) identifying the question; (2) choosing a sample or samples for analysis; (3) determine the type of analysis; (4) reduce the text to categories and code for words or patterns; (5) explore the relationships between concepts (strengths, signs, directions); (6) code the relationships; (7) perform statistical analysis; (8) map out the representations (Colorado State University, 1997-2004).

Disclaimer: Due to the limited time, the method used in this study may not complete full terms of content-analysis method.

Results and Discussion

The Effects of Meditation on Consciousness

From the approach of Buddhist contemplative practice, experience such as emotion, attention, and introspection are processes that continuously needs to be learned, studied, and understood as skills that can be trained. Regarding to this point, the practice of meditation itself is mainly focused on the training of attention and fully experiencing awareness in a complete package of information processed from the five senses.

The effects of meditation on consciousness is more widely discussed from the approach based on brain function. It is acknowledged that the human brain is an organ to which its function is extraordinary, particularly as the central commander of human nervous system. As stated in *Brain Facts: A Primer on the Brain and Nervous System Seventh Edition* (Society for Neuroscience, 2012), cerebrum, as the largest part of human brain, is divided into two hemispheres, the left and the right. Hemispheres are strongly symmetrical and connected by an array of nerve fibers named the *corpus callosum*, in which it has a function as the mediator for both hemispheres in interacting. Cerebral cortex, as the outermost layer of cerebrum, is generally a region made up by tightly packed neurons and responsible for higher thought processes. It consists of four lobes: frontal; parietal; temporal; occipital, where each of the lobes has their own respective role in functioning the body. As part of the limbic system located in each of the temporal lobes, it is necessary to acknowledge the role of hippocampus to which function is responsible on the state of orientation. Hippocampal structure, as a consequence of neuroplasticity, is affected from the expertise of each individual. The brain of an expert was found to be functionally and structurally different from a non-expert (Lutz, Dune, & Davidson, 2007).

An experiment conducted using several methods, involving: electro dermal activity (EDA) measurements, Stroop-word – color test; neurofeedback memory test and meditation (Bob, et al., 2012) showed the important role of interhemispheric interactions in attentional functions. Hemispheres along with other various brain regions enables integration of parallel distributed modalities of processed information resulting to the establish of certain level of efficiency in information processing. After analyzing the data collected using time series analysis, results show that all the participants experienced the highest level of information transfer during meditation, facilitated by self-reflective influence of neurofeedback. Through the experiment, it is known that the neurophysiological changes on brain, which is reflected from the increase of brain synchrony, if provided with meditation, are more likely to present a specific consequence of heightened conscious attention.

A longitudinal study on meditation and the neuroscience of consciousness reported experiment results using mid-range meditation practitioners explained how cortical thickness are positively associated with meditation practices. In the experiment, cortical thickness was assessed using magnetic resonance imaging. The study reported that cortical regions associate with attention, interceptive, and sensory processing were found to be thicker in the meditator participants who had an average of 40 minutes of daily insight meditation practice and have been practicing for an average of 9 years (Lutz, Dune, & Davidson, 2007).

A meta-analysis study (Boccia, Piccardi, & Guariglia, 2015) also added information about neuroimaging investigations, which in fact disclose the positive effects of meditation to specific brain modifications. Results show that participants who underwent fMRI scans during meditation reported elevated activation in brain areas associated with individual's attention, mind wandering, retrieval of episodic memories, and emotional processing. Meditations broadly share the same central cognitive process, that is regulating attention and advancing a mental outlook of detachment from one's own thoughts.

Another study of mindfulness meditation on adults and adolescents with ADHD (Zylowska, et al., 2008) validate precedent phenomenal and remarkable influence to the states of consciousness achieved through meditation practices. The primary practices executed in mindfulness meditation this involves purposeful attention to daily activities—is reported helping working memory trained in patients with ADHD.

Higher States of Consciousness to Mind-Body Healing

The approach of mind-body connection seen as a unified unit has been strongly stated through many scientific explanations, for example in a form of psychosomatic illnesses. Mind and body dynamically affects one another in a way that results in generating one's behavior.

A study brought by Wim Hof (in Hof, 2015), or commonly known as "The Iceman", shows how consciousness carries effects to the level of body immune. Wim Hof Methods (WHM) consists of three elements: breathing exercises; training of mindset and concentration; and gradual exposure to cold. An experiment conducted by the researchers at Radboud University tried to investigate how WHM training of mindset and concentration influenced the activity of his autonomic nervous system and natural immune system, using the injected components of E-coli bacteria into Wim Hof and 112 other participants. In the experiment, Hof showed an impressive reaction, where he produced less than half the number of inflammatory proteins in comparison to the average of the test participants who were also injected with the bacterium. In addition, Hof only suffered a mild headache when the flu symptoms would normally be at their strongest as result of an over-reaction by the immune system. Explaining the findings, reaching to an active state of mind or higher level of consciousness as promoted by the WHM results in decreased levels of the stress hormone "cortisol", that leads to suppression of most inflammatory proteins (cytokines) causing the flu symptoms.

An article of *Healing Metabolism: A Naturopathic Medicine Perspective on Achieving Weight Loss and Long Term Balance* (Sutherland, 2005) discusses on how obesity is seen as a mind-body issue. One of the relevant deliberations of this study is that obesity cases are incorporated with the patient's lack of awareness or consciousness in having food intake. According to the study, food as perceived information must intentionally come into one's awareness in the act of eating. Obesity patients often perform eating as an unconscious or punitive act irrespective of the nutritional value of the food consumed. Thus, one of the conclusions suggested in this article is giving treatments including providing guidance for patients to becoming aware of one's needs especially in the state of cravings.

Another study, the "Samatha Project" provides incredible methodology applied to investigate relationships among higher states of consciousness, health, and disease. The intervention carried out on the combination of intensive insight and compassion-based intervention. Early results of this study showed that sustained-attention training enhances well-being, leads to more empathic responsiveness to others, thus impacts on both psychological and physiological aspects of health (MacLean, et al., 2010).

Contribution of Artificial Intelligence (AI) to Mind-Body Healing

With its nature that can trigger a broad impact, including decreased level of consciousness, technology seems to have offered antidote towards humans' mind and body health. Moreover, artificial intelligence (AI) as product of technology has strongly contributed to promote psychological and physiological health.


In meditation practices, technology has offered meditation applications that can be accessed through smart devices as a form of artificial intelligence. After doing an overview, it is found that the rapidly growing meditation applications results in positive feedbacks from its users. The meditation

application “*Muse*” users, for instance, stated positive reviews from using the application, such as: making meditation less intimidating; amazingly effective at helping users to focus and relax quickly; worked at drowning out of the thoughts, and allowing to realize the mind when it is drifting into things one’s need not think about (Muse, 2018). The “*Muse*” application itself is a product, comes in a headband that could perform brain-sensing activities together with an application that can be accessed through smartphones. “*Muse*” claims its use as a brain fitness tool that measures brain signals.

Several tools mentioned are products of artificial intelligence, which function specifically to replace human instructors in the implementation of meditation practices. In addition, Piedmont Health Care(n.d.)made a summary of mindfulness/ meditation applications including how they contribute to mind-body healing, showed in Table 1.1 and Table 1.2.

Table 1.1

MINDFULNESS / MEDITATION APPS















APP NAME	LOGO	COST	AVAILABILITY	DETAILS
The Mindfulness App		Free	iPhone/Android	5 day guided meditation practice; meditation reminders; personalized meditation offers; timers; Health App integration capability
Headspace		1 st 10 exercises free; optional packages for fee	iPhone/Android	Take 10-first 10 exercises to help you better understand the practice; personalized progress page; reward system for continued practice; buddy system
Calm		Free	iPhone/Android	Guided meditations from 3-25 minutes long; Daily Calm-a 10 minute program to be practiced daily; 20 sleep stories; unguided meditations
MINDBODY		Free	iPhone/Android	Ability to book fitness classes; providers fitness trackers; access to discounts on fitness classes
buddhify		\$4.99-iPhone \$2.99-Android	iPhone/Android	Access to over 11 hours of custom meditations; exercises target specific aspects of life; exercises range from 5-30 minutes
Insight Timer		Free	iPhone/Android	Features over 4,500 guided meditations from over 1,000 meditation practitioners; features over 750 meditation music tracks
Smiling Mind		Free	iPhone/Android	Created for adults and children > 7 years old; sections for educators available for use in classroom settings
Meditation Timer		\$0.99	iPhone	Basic meditation exercises; ability to customize start/stop chimes and background noise
Sattva		Free	iPhone	Daily pre-loaded meditations, chants, timers, mood trackers; ability to monitor heart rate; reward system; explains why meditation is beneficial
Stop, Breathe & Think		Free	iPhone/Android	Over 55 guided meditations; daily mood tracker; ability to customize chimes; exercises focus on sleep, depression and anxiety
Mindfulness Meditation		\$1.99	Android	Developed by a clinical psychologist; 2 audio tracks for meditation; ability to set an intention for exercise
Simply Being		\$1.99	iPhone/Android	Customizable guided meditation experience; sessions range from 5-30 minutes; ability to choose to meditate with a guided voice, nature sounds or both

Table 1.2

Take A Break!		Free	iPhone/Android	Similar to Simply Being, but offers two more guided meditations
Omvana		Free	iPhone/Android	Connects user to simple meditation music or fully guided meditation tracks
Welzen		Free	iPhone/Android	Initial 5 day training course; after training course ability to access guided meditations for adults and children; premium meditations available for a fee
Mindfulness Coach		Free iPhone	iPhone	Created by the Department of Veterans Affairs; tailored specifically for service members and veterans
10% Happier		\$7.99 per month	iPhone/Android	Meditations led by highly respected mindfulness teachers; topics include anxiety, political stress, falling asleep, etc.
OMG! I Can Meditate		\$7.42 per month	iPhone/Android	Meditations that are broken down into life events/interests. Examples: chemotherapy, weight loss
Relax Melodies		Free	iPhone/Android	Simple meditation music to choose from; no guided meditations
Remindfulness		\$2.99	iPhone	Preloaded mindfulness quotes; ability to customize frequency reminders
Just Be		\$0.99	Android	Platform to create personalized mindfulness quotes; ability to customize frequency reminders
In The Moment		\$1.99	iPhone	Developed by a nutritionist to be used when you feel hungry; helps you to determine if you are actually hungry
Mindful Eating Tracker		\$2.99	iPhone	Helps to track eating and drinking throughout the day, as well as your satisfaction with and enjoyment of those things
Am I Hungry?		\$2.99	iPhone/Android	App walks you through mindful eating process when you are hungry by asking why, when, what, how and how much

Conclusions

As a spiritual and healing practice, meditation is aimed at exploring the therapeutic potential to one's mind and body health. This practice supports the basic concept of mind and body working together dynamically as one unified unit. Findings have shown how meditation practices allow individuals to perceive an event, sensation, or stimulus and reflect it with full awareness without any distortion from associated thoughts and/or attention, including the occurrence of restored memories. Meditation techniques such as breath regulation and moving with full awareness provide certain stimulation to the brain and the opportunity for brain to work optimally. This brings impact on the performance of aspects of one's body, both physiologically and psychologically, for example the increased likelihood to attain optimal immune system and reduction of stress. In other words, meditation is approved to treat mind and body health-related issues. In addition, meditation applications have sufficiently described the contribution of AI as antidote to the broad impact of technology to human behaviors. As a product of AI, meditation applications successfully benefits many users in healing their mind and body.

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