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## MINDFULNESS: A PSYCHOTHERAPEUTIC METHOD OF ACCEPTANCE AND CENTERING OF THE MENTAL FRAMEWORK

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### ABSTRACT

Mindfulness as a term comes from Buddhist traditions, translating as awareness, concentration or remembrance. Western neuroscientists define mindfulness practices as a combination of emotional and attentional training regimes that help cultivate physical and psychological well-being and improve emotional regulation while noting neurobiological changes in the brain.

The formal introduction of oriental ways of thinking into western philosophy, psychology and medicine happened decades ago, generating a large spectrum of discussions and scientific works concerning the therapeutic applications of mindfulness practice. Basing our presentation on a thorough study of scientific papers, we propose a synthesis of the theoretical aspects related to mindfulness and a new perspective regarding its applications in clinical psychiatric care.

The modern occidental approaches of the practice are adapted into methods used in cognitive therapy based on mindfulness. The benefits of formal practice proven from the neurological perspective are the result of a less reactive autonomic nervous system. Regulation of attention, body awareness, regulation of emotions, increased capacity of adaptation is just a few of the mechanisms involved. Therefore, it is integrated into western psychotherapy as an adjunctive or alternative method of treatment for several psychiatric disorders among which are depression, anxiety, substance use, smoking cessation, insomnia.

In conclusion, mindfulness has shown to have great promise in clinical application, and the hope is to be used in the future with the purpose of improving mental and physical wellbeing and quality of life.

**Keywords:** mindfulness, adjunctive therapy, mood disorders, anxiety, awareness, neural pathways.

### MINDFULNESS: MORE THAN A CONCEPT

Mindfulness has become a term widely used in today's world, a trend in both academic and non-academic contexts. Defining mindfulness is hard, as the word itself comes from Pali, the language of Buddhist psychology from two and a half millennia ago, which makes mindfulness a concept that originates from the Orient of those times (Germer et al., 2013). Jon Kabat-Zinn, the one who integrated mindfulness into western psychology and medicine defines it as awareness cultivated by sustained attention to the present moment without judgement (2012). Alternate authors define it as a practice of learning to focus attention on moment-by-moment experience with an attitude of curiosity, openness, and acceptance. The word "Sati" which translates into mindfulness means awareness, attention and remembrance. Mindfulness is the opposite of functioning on autopilot or daydreaming but being aware of what happens in the present moment. It also includes remembrance of returning attention and awareness to the present experience.

Another crucial term involved in mindfulness is acceptance of the present experience exactly as it is without resisting. It does not refer to acceptance in the general terms, but acceptance of that which cannot be changed (Germer et al., 2013). Accepting pain is one of the most utilized angles which many mindfulness-based medical approaches target.

It is a lot more than a theoretical concept, as it also describes concepts of a practical nature, such as various practices of meditation and psychological processes or mechanisms of action on the mind and on the brain. The two alternative methods for integrating mindfulness into our lives are the formal way, by practicing meditation, taking the time to practice the techniques in a constrained and controlled environment and the informal way, by trying to apply them in an unplanned way in every aspect of our lives. Meditation has various levels of practice. A more deep, pure form seen in ancient Buddhism of Southeast Asia or in Tibetan yogis and a wide approach taken out of spiritual or religious context and modified, secularized and adapted to the needs of the western civilization, both in medical context and as a way of life (Goleman & Davidson, 2017). It is this modality which we will be referring to across this text.

Mindfulness includes a series of techniques that can be applied both in formal and informal practice. The most widely used is harnessing attention to the present moment by concentrating on breathing. Our mind wanders relentlessly from one subject to the next, and breathing is used as an anchor for it, as a neutral point for the mind to return to every time it diverts from the present (Luca et al., 2020). The guideline encourages acceptance of thoughts as they pass by and return attention to respiration. Another way to anchor the mind is attention to surrounding sounds, without labeling them or judging them. Body scanning is a technique meant to encourage acceptance of sensations by consecutively scanning every part of the body, as by being slower and steadier than the mind, it is a great observation point for it and its emotions. Therefore, formal meditation practices are not in themselves a purpose in life but are a tool for easing living life with discomfort (Germer et al., 2013; Goleman & Davidson, 2017).

There are a few common misconceptions about what mindfulness is or is not. Even though it has been practiced by Buddhist monks for thousands of years it is not a religion, but an exercise of increasing awareness to the moment-by-moment experience, exercise which is the foundation of various psychotherapeutic approaches. It is not meant as an attempt at relaxation, but rather as a way of being less surprised at the emotions within. It is not a way to empty the mind of all thought but to develop a different relationship with the thoughts and emotions through a better understanding of how the mind works. It is not a way to transcend the mundane, but rather to revel in the small banalities of life (Germer, 2009).

## HOW MINDFULNESS SHAPES THE NEUROBIOLOGY OF OUR BRAINS

Mindfulness and meditative practices are the appanage of Oriental philosophy and psychology, but their informal introduction into the western culture happened centuries ago, with transcendentalists like Henry David Thoreau and Ralph Waldo Emerson, and found their way into academic circles around the beginning of the twentieth century. They took a more serious hold mere decades ago, in the seventies, when teachers from the East started arriving in Europe and America and westerners started travelling to India and Tibet to study with local monks. This made way for a slow and gradually increasing wave of research studies on the subject with the purpose of analyzing the benefits and claims within the boundaries of science. In recent years the count for mindfulness and meditation studies has risen to over 6000, with 2014 claiming 925 studies, in 2015 there were 1098 and in 2016 there were 1113 such papers (Goleman & Davidson, 2017). There are still some conceptual and methodological issues with such publications in terms of the difficulty of standardization because of the many different varieties of practices, the different level of experience of the meditator groups and assessment of the results though imaging or other methods (Davidson & Kazniak, 2015). We have made it our aim to study and analyze the general directions and conclusions taken from that research in the hope to understand the neurobiological mechanisms involved and consider the applications they can have in our clinical practice.

A scientific concept crucially involved in the neurobiology of mindfulness is that of neuroplasticity. To see a change in the external manifestation or behavior of humans, a change at the level of the brain needs to happen. When a certain behavior is repeated multiple times, for instance the returning of attention to the present moment within the practice of mindfulness, the wave of brain activity changes gradually, and this gradually implemented brain pattern transposes into behavioral patterns both inside and outside the mindfulness practices (Germer et al., 2013). Based on this concept, scientists have tried to identify specific neural networks that are activated in the frame of these practices and shaped through neuroplasticity. These vary greatly, depending on multiple factors including the type of practice being studied and the experience of the people being part of the study. One of these networks was studied in 2001 by Debra Gusnard and Marcus Reiche and is called the default mode network (DMN). DMN is active when the mind is at rest and completes elemental tasks of information integration necessary for baseline functioning and has the role of giving and maintaining the sense of self and identity of a person at rest. It is the one which generates spontaneous thoughts and is active when the mind wanders during mindfulness practices. Its deactivation results in a state of focused attention with minimal self-reference thoughts. Its importance was observed in many psychiatric and neurological diseases, as Alzheimer's Dementia and Autism Spectrum Disorders

(Sandu & Nistor, 2020). Numerous studies used the functional MRI imaging technique to compare the activity of the DMN in experienced meditation practitioners versus control groups comprised of non-meditators. It was observed that after various distraction stimuli, experienced meditators managed to deactivate the DMN, had diminished chains of associations in the mind and returned promptly to anchors like the breathing, compared to the control group (Gusnard & Reiche, 2001; Reiche et al., 2001).

Another region activated during mindfulness practices is the anterior insula. This region has a crucial role in self-perception, in the perception of visceral sensations and controlling autonomic responses like heart rate and breathing, contributing therefore at defining our perception of the inner self. It has been observed that during mindfulness practices, this region of the brain has increased activity, attributed to the fact that the practitioner develops an increased attention to passing sensations in the body. The insula is also implicated in affectivity, empathy and relationship to pain. Studies using fMRI on subjects who have seen distressing materials of people suffering have shown that circuits that are part of the insula light up in response, indicating suffering of the viewer reflecting the distressing material. Distressing circuits of the insula have multiple connections to another region of the brain, the amygdala (Lutz et al., 2009; Lutz et al., 2004).

The amygdala is implicated in the processing of intense emotions of both positive and negative nature and mediates the reaction to stress. Studies have highlighted the finding that beginners in meditation have a higher amygdala activation in response to stressful stimuli and painful images compared to experienced practitioners (Desbordes et al., 2012).

Studies have highlighted various changes noticed in the brain structure as a result of long-term mindfulness practice. By using neuroimaging techniques, it has been found that brain grey matter increases in size in multiple regions of the brain activated during meditation. Experienced practitioners have shown an increase in grey matter thickness at the level of anterior insula and sensitive cortex because of increased attention and control of sensorial internal and external stimuli. As the thickness of insular grey matter decreases with age, mindfulness could help slow down the process of thinning of this region that takes place normally when a person is aging (Brefczynski et al., 2007). Examining grey matter structures of experienced meditators has yielded multiple different results, in part because of the multitude of different practices, subjects and study designs, but several regions have been a constant across all these results: the right anterior insula, the inferior temporal gyrus and the hippocampus (Holzel et al., 2011). The latter constitutes the only part of the brain that can generate new neurons as a person ages, but this process is often impeded by the secretion of cortisol, the stress hormone. It has been observed that in experienced meditators there is an increased thickness of this region compared to non-meditators, suggesting that meditation has the potential to control the negative changes of cortisol (Rosenkranz et al., 2015). Trying to see if similar changes start to take place in people who have not practiced mindfulness for long, scientists have analyzed subjects participating in the Mindfulness-Based Stress Reduction (MBSR) Program. Four brain regions have shown modifications after the 8 weeks required to complete the program: the hippocampus, the posterior cingulate cortex, the temporo-parietal junction and a part of cerebellum. The insular grey matter was also increased, but not in a statistically significant way. The hippocampus is involved in memory and learning, the posterior cingulate gyrus is part of the DMN, and even though DMN activity decreases during meditation states, it is concluded that an increase in the density of this gyrus is based upon the complex relationship between structure and function at the level of the brain. The temporo-parietal junction plays a central part in empathy, compassion and the sense of self, the increase of this region meaning a better awareness of the body. A meaningful addition is the finding of decreased amygdala activity and a diminished amygdala density, correlating with a better physiological response to stressful stimuli and a decreased cortisol activity (Germer et al., 2013; Singleton et al., 2014).

## THE MINDFULNESS APPROACH IN PSYCHOTHERAPY

Although mindfulness meditation was never intended to be used in a medical context, it has shown great promise due to its numerous benefits both from an empirical standpoint and hinted at or proved scientifically. There are four important therapeutic approaches based on mindfulness, as follows: mindfulness-based stress reduction (MBSR), mindfulness-based cognitive therapy (MBCT), dialectic behavioral therapy and acceptance and commitment therapy. These forms of therapy each are intended to target different psychological and psychiatric problems.

Introducing mindfulness into the frame of psychotherapeutic practice can be a challenge, especially when the patient is unsure, vulnerable and skeptical towards treatment. A good approach can be proposing an experiment, only when both the therapist and patient maintain an open mind and are open to the trial of different practices and a good therapeutic relationship is present. When proposing a technique, one must consider, among others, patient preferences, personality, chief complaint and other pathologies. Mindfulness focused on breathing might not be appropriate to patients suffering from anxiety or respiratory problems such as COPD or asthma or even OCD patients, as they might be too focused on controlling rhythm of breathing. Attention to sounds might trigger fear responses in patients suffering from PTSD. Meditations focusing on body sensations might be adequate for OCD patients, as they can constitute a distraction from obsessive thoughts, but prove problematic in patients with dissociative disorders, as they can exacerbate

symptoms or produce confusion.

In depressive syndromes, mindfulness toward disposition can protect against depression as it regulates affect and promotes acceptance. Formal mindfulness techniques can stimulate positive feelings and reduce rumination. MBCT and acceptance and commitment therapy are two approaches often used with these patients. These approaches help patients confront the pain they are feeling and promote a change in their relationship to it. Therapists often deconstruct depressive syndromes into their components, emotions, thought and physical symptoms, to use different techniques to target each of these aspects. Medication is used in conjunction with psychotherapy in severe forms to decrease symptoms for the patient to be able mentally and physically to engage in mindfulness practices (Teasdale et al., 2000).

Anxiety sufferers also benefit from programs such as MBSR, MBCT and acceptance and commitment therapies as they teach patients to relate differently to their interior experiences. Fear and anxiety are normal adaptive responses that appear when we confront a menacing or perilous situation (Sandu 2021a; 2021b). They activate the fight or flight response which implies autonomic nervous system involvement like diaphoresis, increased heart rate, increased rate of breathing and can be accompanied by subjective experiences like sense of impending death. Applying mindfulness-based therapies help these patients monitor the symptoms in a gently and compassionate manner, increase their level of awareness and understanding of their anxious response and identify and combat their anxiety-provoking thoughts. Studies show that mindfulness-based therapies prove most effective and improve quality of life in patients suffering from social anxiety, generalized anxiety disorder and obsessive-compulsive disorder (Goyal et al., 2013).

Insomnia is a worldwide issue often understated and has a variety of causes, among which caffeine consumption, evening naps, sleeping beside someone who snores, obstructive sleep apnea, polypharmacy and others. The real problem instead is that relentlessly trying to sleep and incessant thinking about not being able to sleep stresses the body and induces the fight-or-flight response that keeps us awake. Therefore, a vicious circle is created that amplifies the problem. Mindfulness-based interventions have the role of changing thinking patterns when sleep is attempted. A few of the new patterns include being more aware that less sleep often wakes you up feeling more energized, which can reduce the feeling of urgency to fall asleep, laying on the pillow is often a very restful activity regardless of sleep (Lars-Gunnar, 2005).

Mindfulness-based interventions have proven helpful in patients suffering from various addictions, including substance use, smoking or excessive eating by increasing awareness of the negative effects these activities have on the body as they happen, identifying the external triggers that lead to executing the activity and deconstructing the internal causes for being more susceptible to those triggers. By applying mindfulness techniques, the patient can adopt an attitude of acceptance of the emotions and sensations that prompt the consumption and develop non-reactivity towards them (Valcea et al., 2016; Ciobotea et al., 2016; Paduraru et al., 2019; Vendemmia et al., 2019).

## CONCLUSIONS

Body and mind are two entities that are meant to work in synergy and synchronizing them is the key to creating the optimal human experience. Practicing mindfulness helps one harness a great number of qualities of the mind otherwise difficult to access and owning one's own internal and external experiences. The various therapeutic approaches help patients get closer to that much desired level of functioning. Interest in the subject of mindfulness and how it can be of use in a therapeutic context is rising day by day based on the ever-increasing number of research papers meant to answer questions never asked before. The research approaches, study designs and imaging methods improve alongside the evolution of technology and previous experience. We have promising results that we can draw from in our eternal quest of improving patient care and hope the future will bring a better understanding of an element that always constituted a mystery and a challenge, the human mind and brain.

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