

Scientific Findings on the Health Benefits of Meditation

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INTRODUCTION:

Health hazards come in many guises. According to the WHO, 36 million people die annually from Non-Communicable Diseases (NCD).¹ The most serious of these are cancers, cardiovascular diseases, respiratory diseases and diabetes. Doctors point out that many non-communicable diseases are preventable by changes in lifestyle behaviour and attitudes. There has sometimes been a tendency for medical scientists to place their emphasis on the physical aspects of health to the neglect of mental aspects. Today, however, mental health has also come to be regarded as a vital component of physical well-being. Scientists have found that a person's mental condition does have an influence on many diseases, either directly or indirectly; further, that keeping the mind healthy can be of use in disease prevention. Meditation is being examined as a particularly efficacious way to maintain a healthy mind and body. It has become a popular contemporary theme in diverse quarters and, especially in the fields of psychology and counselling, been applied

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1. <http://www.who.int/mediacentre/factsheets/fs355/en/>

in the treatment of a wide range of psychological disorders. With the continuing development of neurology, meditation has been tested in various scientific experiments and found to provide a number of specific health benefits. Nevertheless, there is also still much laxity in the definition of meditation. The *Pāli* word *bhāvanā* has been translated into English as "meditation" and mean only the calming and relaxation of the mind.² Although relaxation is one of the key components, meditation does consist of more than that. A more sophisticated view is that of Pekala, who conceives of meditation as a "process of turning consciousness upon itself to develop attentive control of the processes and contents of consciousness".³ Delmonate meanwhile looks outwards, observing that meditation is the mechanism for "seeing the world as it is, free from preconceptions."⁴ These descriptions both focus on meditation's role in enabling the practitioner to reflect upon and correct perceptual distortions in order to experience reality as it is.

In this paper, it is suggested that a clearer understanding of Buddhist philosophy and terminology may enhance the comprehension and efficacy of the uses of meditation in Western society and, conversely, it may be possible by promoting awareness of the new scientific foundations of meditational practice to reintroduce efficacious techniques that have the power to improve the health of general populations in the Buddhist world.

The traditional Buddhist perspective on meditation is found in the words, the "*association, cultivation and development of wholesome qualities in mind is called bhāvanā*".⁵ The Noble Eightfold Path has presented two components related to meditation: Right mindfulness (*sammā sati*) and Right Concentration (*sammā samādhi*). According

2. Oxford dictionary. 2005. p. 954

3. Pekala, R. J. 1990. The phenomenology of meditation, In M. A. West (ed.). The psychology of meditation. Oxford: Clarendon Press. 3:130-140

4. Delmonate, M. 1987. Constructive view of meditation. American Journal of Psychotherapy. Vol. XLI, No. 2., 7:2

5. Abhidhammatthavibhāvinīṭikā: Vithimuttaparichedavaṇṇanā. Chattha Sangayanā Tipitaka.

to Padmasiri de Silva,⁶ there are two goals of meditation: the goal of tranquillity, and the goal of insight. Right Concentration can be equated to the first type of meditation. Here, the practitioner has to pay attention to a specific object and become increasingly focussed on it. This exercise clears the mind of all external and internal stimuli, leading into a state of pure and un-distracted consciousness. In order to attain nibbāna, however, the practitioner is expected to undertake vipassanā or insight meditation. *Vipassanā* is a gradual cultivation of mindfulness or awareness, a smooth as well as a deep technique of mental training which consists of a set of exercises for becoming more and more aware of the experiences of life. The main object of vipassanā is to learn to see the truth of the phenomena of impermanence, un-satisfactoriness, and selflessness. Such an experience is assumed to lead to the relinquishment of one's illusion of the self or ego; *Nibbāna* is then attained through the subsequent annihilation of desires and cravings

The main purpose of meditation is the positive transformation of the person. By dint of practicing meditation, the practitioner seeks to derive mental tranquillity and awareness as well as heightened concentration and insight. Meditation reduces stress, tension, fear and worry through deep understanding. It enables the practitioner to sharpen concentration and thinking powers little by little with the goal of acquiring direct knowledge of things as they really are without mental confusion.

BUDDHIST PERSPECTIVE ON MIND

Meditation mainly deals with mind. It is necessary to seek a clear understanding of the mind and its behaviour in order to practice meditation. Buddhism defines the mind as a process of purely mental phenomena. Modern medical science, on the other hand, approaches the mind in terms of how neurons function in the human brain. Nonetheless, the human brain is the most complex structure on Earth - and perhaps in the Universe. Even after centuries of philosophical inquiry and serious brain

6. De Silva, P. 1991. Buddhist psychology: a review of theory and practice. *Current Psychology: Research and Reviews*, Vol.9, No.3. 3:236-254

research, as well as remarkable advances in the fields of neuroscience and psychology, the scientific concept of mind remains unclear and controversial and it is no easy task to provide a clear and acceptable definition of either mind or consciousness. The nature of mind was a fascinating topic for early philosophers. In India during the 6th century B.C, some religious schools maintained that mind and body constituted a duality; others maintained that it was one⁷. Dualism and behaviourism have likewise served as popular concepts of mind in Western philosophy. Some searchers held that mind and body were two distinct realities, while behaviourists in various forms, on the other hand, endeavoured to reduce mind to body. Rene Descartes held that the mind is a non-extended, non-physical substance. He identified the mind with consciousness and self-awareness, and distinguished these from the physical brain.⁸ He was, in so doing, the first to formulate the mind-body problem in a form which remains widely prevalent today.

It would seem that no other philosophy or religion devotes more attention to the nature of the human mind than Buddhism. The Buddhist religion talks constantly about the human mind and places it at the centre of its teaching. In the canonical texts, too, mental phenomena have been analyzed deeply. The first two verses of the *Dhammapada* describe the primary position assigned to the mind in Buddhism thus:

“All states have mind as their fore-runner; to them mind is supreme
and they are mind made...”⁹

The general term used to denote mental life in Buddhism is *citta*. It is described as the invisible and incorporeal energiser and activator of the body. Two other cognate terms besides *citta* have also been used in the same manner, namely, *mano* and *viññāṇa* in the canon.¹⁰ However, these terms cannot always be used interchangeably as the different contexts in

7. “Aññaṃ jivaṃ aññaṃ sarīraṃ..taṃ jīvaṃ taṃ sarīraṃ” Cūlamāluṅkya Sutta, M. I, PTS. p. 426

8. Cottingham, J., Stoothoff, R., Kenny, A., and Murdoch, D., (trs.) 1988. The Philosophical Writings Of Descartes. 3 vol., Cambridge University Press. p. 120

9. “mano pubbaṅgamā dhammā-mano seṭṭhā manomayā”- Dh.p. 1,2

10. “yaṇ ca kho etaṃ bhikkhave vuccati cittaṃ iti pi mano iti pi viññāṇaṃ iti pi” - S. II, PTS. p 94

which they are used show. The term *mano* represents the rational faculty of man, which is the intellectual functioning of his consciousness. The term *viññāṇa* represents the sensory aspects of a person. The term *citta* represents the subjective aspect of consciousness.¹¹

The function and behaviour of *citta* was illustrated on many occasions by the Buddha. On one occasion, the Buddha said:

*“I consider monks, that there is no phenomenon that comes and goes so quickly as mind. It is not easy to find a simile to show how quickly mind comes and goes.”*¹²

On another occasion, the Buddha spoke thus:

*“just as a monkey faring through the dense forest catching one bough and letting it go, catching another, and then another, even so, monks, with what is called thought or mind or consciousness, by day as by night one arises when another perishes”*¹³

As observed in the *Dhammapada*, the *citta* or mind of the worldly individual is constantly throbbing, trembling and wavering; It is exceedingly difficult to defend against and be saved from moral lapses.¹⁴

The mind quivers like a fish out of water, distracted by a multitude of stimuli.¹⁵ It is very hard to control, forever shifting lightly and quickly and attaching itself to whatever it craves for.¹⁶ It is difficult to discern or understand and very unstable.¹⁷ It travels far, fares alone, is incorporeal and resident in the cave or the heart.¹⁸ *Citta* plays a major role in the moral and intellectual behaviour of the person. Usually, the functions of *citta* are classified into three as:

11. Encyclopedia of Buddhism Extract – no. 4, Buddhist psychology. Ministry of Buddhasasana. 1995. p. 2

12. “Nāhaṃ bhikkhave aññaṃ ekadhammaṃ pi samanupassāmi yaṃ evaṃ lahuparivattaṃ yathayidhaṃ cittaṃ yāvañcidaṃ bhikkhave upamāpi na sukarā yāva lahuparivattaṃ cittaṃ ti” - A.I, p. 10.

13. S. II, PTS. p. 95

14. “phandanaṃ capalaṃ cittaṃ” Dh. 33

15. “durakkhaṃ dunnivārayaṃ” Dh. 33

16. “Vārijevathale khitto okamokata ubbato, pariphandatidaṃ cittaṃ...” Dh. 35

17. “sududdasaṃ sunipunavaṃ...” - Dh. 36

18. “Dūraṅgaṃ ekacaraṃ asaṭṭhaṃ guhāsayaṃ” Dh. 37

1. Affective (*vedanā*)
2. Cognitive (*saññā*)
3. Conative (*cetanā*)

The affective aspect of the *citta* is feeling. The cognitive aspect represents knowing, believing, reasoning and perceiving. The conative aspect is connected with will or volition, striving, acting, and desiring. Though categorized according to their functioning, all these mental processes interact together with concurrent actions.

The Buddha was the first psychologist to try to explain mind without soul. The person is often led to identify his *citta* with his true self but the Buddha was categorical in rejecting this identification. The Buddhist view on *citta* is dependent arising and its origin, function and cessation as well as its defilement and development are illustrated without any metaphysical concepts.

VARIOUS APPLICATION AND HEALTH BENEFITS OF MEDITATION

Meditation as Psychotherapy

Buddhism had a therapeutic base from the beginning. It may be noted that the Buddha himself was called *Anuttaro sallakatto* (the incomparable surgeon). Buddhist psychotherapy has its own developed model within Buddhism. The Buddha expounded this new therapeutic model after experimenting for a few years. Eventually, he recommended it to others, too, having understood its utility from his own experiences. The main aim of the psychology, psychotherapy, and counselling traditions which developed in the West has been to heal patients who have psychological disorders. When we consider Buddhism, however, treatment of the sick is not the only aim of Buddhist psychotherapy. It also endeavours to treat anyone who seeks all-encompassing and permanent solutions to the sufferings of life, notably those due to impermanence, un-satisfactoriness and so forth.

The central teaching of Buddhism is codified in terms of the Four Noble Truths and the recommended procedure to realize the Four Noble Truths is to practice the Noble Eightfold Path. Although

the sole aim here is spiritual attainment, many of its teachings can be applied in everyday life because Buddhism itself is not remote from daily experience. Some of them can even be used successfully as therapies for psychological disorders. Jon Kabat-Zinn, who is a counsellor of University of Massachusetts Medical School, successfully applies “mindfulness meditation” to stress related mental disorders. He maintains a clinic there called “Mindfulness Based Stress Reduction”(MBSR).¹⁹ Buddhist psychotherapists also use a wide range of Buddhist practices such as “loving-kindness” and “mindfulness meditation” practices to alleviate mental suffering. There is a strong commitment to empowering the client to become aware of both processes that create mental suffering and activities and processes which alleviate mental suffering.

Meditation is now used widely as psychotherapy because many psychologists have understood the efficacy of its curative power. As noted by Deathrage, people can use meditation as a self-treatment because it helps them to observe their own mental behaviour and, as a result, control their own mental processes.²⁰

The *Abhidhamma* endeavoured to classify consciousnesses (*cittas*) and mental objects (*cetasikas*) according to whether they were wholesome, unwholesome, neutral, and so on. Through meditation, the practitioner is made to observe those mental conditions that arise from time to time within him- or herself. Through the investigation and classification of mental events, it provides insight into the creation of mental schemes, gives rise to a greater sense of responsibility, and allows one to step out of one's own conceptual limitations and stereotyped reactions and behaviours. Thus, meditation feeds the desire for deeper self-understanding through the course of therapy, and leads, in this estimation, to an intensification of the therapeutic process. Meditation promotes the quality of therapy by requiring clients to be more deeply

19. Kwee. G.T., Gergen, Kenneth J., Kodhinikawa, Fusako, Ed. 2006. Horizons in Buddhist Psychology. USA: Taos Institute Publications. P.61

20. Deathrage, G. 1975. The Clinical Use of Mindfulness Meditation Techniques in Short-term Psychotherapy. Journal of Transpersonal Psychology. 7:133-143

engaged in the process of self-exploration and providing extra material for exploration in therapy sessions.

Many physiological data on meditation suggest its effectiveness for treating a variety of stress-related, somatically based problems. Diverse studies have indicated that meditation can be a promising preventive or rehabilitative strategy in the treatment of addictions, hypertension, fears, phobias, asthma, insomnia, and stress. These researches have also suggested that subjects using meditation experience more change than control groups in the direction of positive mental health, positive personality, self-actualization, increased spontaneity, self-regard, inner directedness, and self-perceived increase in the capacity for intimate contact.²¹

According to psychological observations, meditation is beneficial for the physiological state of relaxation. Studies have found that meditation leads to significant decreases in oxygen consumption, carbon dioxide elimination, respiration rate, heart rate, blood pressure, arterial gases, and body temperature and also increases in skin resistance and in slow alpha brain waves and a decrease of beta waves.²² Findings of this nature have given rise to the widespread view that meditation is basically a relaxation technique.

The Impact of Meditation on the Brain and Health

Meditation not only serves to develop the mind but also presents a number of physical and mental health benefits. According to findings of modern psychology, chronic stress plays a major role in many psychological disorders as well as physical diseases. Such psychological and physical disorders such as depression, anxiety, heart diseases, sleeping problems, digestive problems, memory problems and skin conditions are caused by stress. As soon as someone is stressed, the brain sends out a signal through the nervous system to all parts of the body to get ready and respond by

21. 7 Health Benefits of Meditation. (<http://foodmatters.tv/articles-1/7-health-benefits-of-meditation>)

22. The Science of How Meditation Changes Your Brain. (<http://www.squidoo.com/contemplative-neuroscience>)

releasing stress hormones, including adrenaline and cortisol.²³ Long-term exposure to stress can lead to serious health problems. Chronic stress disrupts every system in the body. It can raise blood pressure, suppress the immune system, increase the risk of heart attack and stroke, contribute to infertility and speed up the aging process. The regular practice of meditation apparently helps to avert mental stress.

Meditation may modulate the working of the amygdala and increase the functioning of the prefrontal cortex. The amygdala is the part of the brain that triggers anger and anxiety. The prefrontal cortex is involved in analysis and planning but takes a long time to make its decisions. The amygdala, on the other hand, makes rapid situational judgments and has a powerful effect on emotions and behaviour, linked to survival needs. In an emergency situation, the amygdala will trigger a fight or flight response long before the prefrontal cortex responds. The conclusions are hasty, however, and the amygdala is liable to identify dangers which are not really there. Emotionally charged situations can trigger uncontrollable fear or anger and lead to conflict, anxiety, and stress. Long-term meditation may modulate the amygdala and be able to preempt the fight or flight responses, and perhaps even redirect them into more constructive or positive feelings. A study at Massachusetts General Hospital examined the impact of the Buddhist “Insight” meditation on the brain and found that meditation increases the thickness of several areas of the prefrontal cortex. When this area is active, just like a muscle that is exercised, it grows.²⁴

Other studies have shown that meditation increases gray matter²⁵ in the brain and slows down brain deterioration. One experiment examined Thirteen Zen meditators (MEDT) with more than 3 years of daily practice were recruited from the local community training and thirteen who did

23. Seaward, Brian. 2006. *Managing stress: principles and strategies for health and wellbeing*. Massachusetts: Jones & Bartlett Learning, Sudbury. pp. 354-355

24. David R. Hamilton. *How Meditation Affects the Gray Matter of the Brain*. (http://www.huffingtonpost.com/david-r-hamilton-phd/how-meditation-affects-th_b_751233.html)

25. nerve tissue, especially of the brain and spinal cord, that contains fibers and nerve cell bodies and is dark reddish-gray

not meditate. The brain scan revealed that those who meditated had an increased thickness of gray matter in parts of the brain responsible for attention and the processing of sensory input. The study also showed that meditation helped slow down brain deterioration due to aging.²⁶

In the human brain, the left hemisphere is associated with analytical, rational and logical processing, and the right with abstract thought, non-verbal awareness, visual and spatial perception and the expression and modulation of emotions. It may be that weak activity in the right brain produces too much thought and anxiety and not enough “being.” The practice of “mindfulness” may, conversely, bring calmness, still the brain’s chatter, and help shift the brain’s activity towards the right brain mode. Another important suggestion is that by engaging the right brain, the parasympathetic nervous system can be activated, thereby releasing less adrenaline, reducing stress and promoting good health.²⁷ In fact, psychological studies have shown that practising of “mindfulness meditation” enjoy significant improvement in their critical cognitive skills after only four days of training for just 20 minutes each day.²⁸

CONCLUSION:

As mentioned earlier, the main purpose of Buddhist meditation is spiritual rather than physical development. Generations of Buddhist monks have dedicated their lives to the quest for spiritual attainments. Some lay devotees also try to be like the monks and practise meditation. The majority of Buddhists, however, have given up all such practice out of the belief that meditation is something only for a chosen few. This can be said today of such traditional Buddhist countries as Sri Lanka, Thailand and Burma. Some devotees instead recite stanzas or *suttas* in the name of meditation. Meditation instructors do provide a traditional set of practices that lead to deep spiritual attainments but most lay people are

26. For the study where Zen meditation impacted gray matter, see: G. Pagoni and M. Cekic, “Age Effects on Gray Matter Volume and Attentional Performance in Zen Meditation”, *Neurobiology of Aging*, 2007, 28(10), 1623-1627.

27. The neuroscience of mindfulness. (<http://www.mindfulnet.org/page25.htm>)

28. Cognition Improved By Mindfulness Meditation. (<http://www.medicalnewstoday.com/releases/185580.php>)

not encouraged to practise meditation. In this situation, the teaching of traditional meditation knowledge with reference to its new, scientific basis could in fact become a way to promote the gradual spread of meditation among the Buddhist laity. The practice of “mindfulness meditation” can be very easy and its results surprising. An attractive way forward could be to introduce to simple meditation retreats for young people, where they can enhance their mental and physical health. When we look at the UN’s annual data reports, we can observe a number of diseases that are increasing annually. The costs of medicine also gradually increase as well. Prevention is indeed better than cure. If we can promote meditational practice as a mode of self-treatment or self-healing, this may indeed be greatly beneficial for all mankind.

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