Science to overcome emerging Health Problems Is Meditation Useful?

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Introduction

Sri Lanka is facing several emerging health problems. These range from epidemics of infections (e.g. dengue brought on by urbanization), increasing prevalence of non-communicable diseases (e.g. diabetes due to changing diet and life styles) and rising rates of injuries (e.g. high velocity road accidents in high ways).

Does meditation have a role to play in tackling some of these emerging problems? This area of inquiry is important because Sri Lanka is a country where meditation is practiced commonly. The primary objectives of such practices are to achieve certain religious goals (e.g. to become an 'Arahath' or supreme emancipation of 'Nirvana'). However, it would be useful if scientists began to explore if they have more secular benefits of improving health outcomes. This article outlines a few aspects that may interest the reader. It first begins with a section on research and then discusses some potential applications.

Research on meditation

The world has seen rapid scientific advances in the disciplines of biology and human health over the past decades. These include the ability to describe the complete human genome, analytical techniques sensitive to identify a range of compounds (e.g. proteomics) and imaging techniques such as magnetic resonance imaging that reveal internal human organs and structures in three dimensions. An area with relatively less rapid advance relates to the mind. Though Lord Buddha, often credited as the first scientist of the mind, emphasized the role of the mind as a forerunner of human activity, Western or Modern science showed relatively less interest. Meditation, a key ingredient of several religions was almost ignored by the scientific community and rarely investigated until 1960s. The initial well described studies began in the US in Harvard University on a form of meditation called Transcendental Meditation (TM) that originated in the Himalayan region and promoted by Guru Maharishi Mahesh Yogi. Subsequently, Tibetan forms of

meditation (under the leadership of His Holiness the Dalai Lama) have been investigated extensively in laboratories around the world. The forms of meditation in these countries are different from Sri Lanka. In Tibetan meditation, visualization is used to focus attention, and in TM a 'mantra' is repeated by the meditator to focus attention.

In recent times Thailand, Indian and Sri Lankan scientists have also begun to investigate the health effects of Mindfulness Meditation. Scientists define meditation as a unique mental state in a practitioner. Prof Kabat-Zinn described it as "the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experiences moment by moment". Therefore in practicing mindfulness meditation, one becomes aware of the current internal and external experiences, observes them carefully and accepts them. This is believed to lead to a 'relaxation response' as described by Professor Herbert Benson who studied TM. More recently, mindfulness meditation has been promoted as a strategy to reduce stress by Prof J Kabat Zinn (also from the US).

Potential health benefits

There are several studies showing the effects of different forms of meditation affecting physiological functions. Initial studies showed that meditation reduces blood pressure. Experienced meditators are able to control their heart rate and respiratory rate during meditation.

Psychological benefits

Meditation is well recognized to have beneficial psychological effects. These include improved examination performance in students who practice meditation. Their ability to remember and recall facts in enhanced and they cope better with examination stress. Recent evidence also suggests positive effects of meditation on intelligence and memory. Brain regions associated with attention, introspection and sensory processing become thicker in meditators than in those who do not.

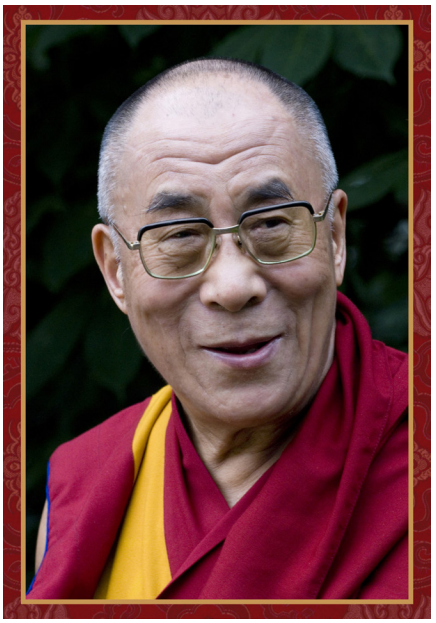
Meditators experience less stress as a result of their practice. As a result, some of the diseases associated with stress are managed better with meditation. These include persons who meditate and have better abilities to cope with distress and pain. Studies on persons with terminal cancers have shown that the patients suffer less when they meditate.

Ageing

Telomere length and high levels of telomeres are considered intracellular markers of longevity. These are terminal parts of the chromosomes which become shorter with ageing. Meditation leads to alteration of telomerase activity. Recent studies indicate a positive effect on telomere length in long-term meditators. This has led to theories that meditation has the ability to prolong life.

Neurological diseases

Meditation is associated with altered electroencephalogram



His Holiness the Dalai Lama

patterns (i.e. this measures electrical activity). There is widespread interest on the favourable effects of meditation on the cerebral cortex. One such condition is dementia a disease where people lose their abilities to remember and think clearly. It is common in older people and there are drugs which can slow the progress of the diseases. There is evidence that meditation is also capable of slowing the progress of dementia

Immune-mediated diseases

Studies have shown a range of effects of meditation on the immune system. Generally meditation calms the background low-grade inflammation that is present even in a healthy state. It also inhibits the response when the body is presented with a foreign antigen (e.g. by giving a vaccine under experimental conditions). The immune effects can be measured by checking on C-Reactive proteins, cell counts such as lymphocytes, and cytokine levels. There is research to show that diseases that result from inflammation (e.g. inflammatory bowel diseases) benefit from the practice of meditation.

Stress related diseases

Stress reaction is measured using cortisol level.. Meditation leads to decreased serum cortisol levels. Some of these effects are seen even with short term meditation. Therefore, scientists believe that stress reduction through meditation may help to reduce the number of persons who develop diseases such as high blood pressure and diabetes.

Conclusion

Despite the fact that meditation is commonly practiced in Sri Lanka, the scientific community and health personnel have not given adequate attention to its potential benefits. We need more research in this area. The Faculty of Medicine in the University of Colombo has commenced research in this area and hope to work closely with the scientific community, students and people of this country to harness the benefits of this ancient practice.

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