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## Researching into ‘mind’: the lost paradigm in modern medicine

M Wasantha Gunathunga

Department of Community Medicine, Faculty of Medicine, University of Colombo, Sri Lanka

Correspondence: wasantg@commed.cmb.ac.lk

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### Mind and health

In the ancient world cultures, when man’s mind turned against him, it was thought to be caused by demons or supernatural powers. Medical practitioners resorted to brutal therapies such as drilling holes in the skull to release such evil thoughts as early as in 5000 BC (1). Almost 7000 years since then, many of us are still in the dark as to how thoughts and emotions truly operate within the mind.

With regard to our own thinking process, unelicited thoughts bring out stress, anger, fear, desire, anxiety and depression on one hand, and happiness and contentment on the other hand. These emotions and associated thoughts are the ‘disease-determinant combinations’ affecting the mind. Incidence of many behavioural problems directly connected to one’s mind is running high in the society. A recent study revealed that regular alcohol use among working men was as high as 50% in an urban district in Sri Lanka (2). Abuse of other substances is also widely prevalent (3). Traumatic injuries (4) and deliberate self-harm are reported frequently (5). This phenomenon is common to all, the patient and physician alike. It is shown that healthcare providers suffer from many mind related conditions, such as burnout, mental stress, anger, uncontrolled desire, and errors of commission and omission to name a few, which could in turn adversely affect the patients under his care. More importantly, processing information within the mind plays an important role in clinical practice. For example, when doctors lack the skills to read the minds of people adequately, they tend to stereo-type patients’ behaviour and address psycho-social issues to fit a group, than

an individual. In doing so, what is offered is not what suits the individual patient best, hence an incomplete job of managing patients. The skill of reading a patient’s mind is likely to reveal the discords and concords of thinking between the patient and doctor. Such advanced mind to mind connectivity can solve patient management issues in difficult situations such as ethical dilemmas in management, end-of-life decisions and do-not-resuscitate decisions, apart from day to day patient management decisions. Such deep-seated skills need to be trained and require dedicated research into the mind to understand the body’s nexus with mind, the mind’s architecture and function, in order to apply this knowledge in health care of patients.

The mind however not only makes one sick, but it also ‘cures’. Refined mind is the forerunner of health and happiness as much as the untrained raw mind being the forerunner of distress (6). The WHO’s definition of health indicates that to achieve health, one has to achieve complete mental wellbeing (7). Therefore, innovative approaches are needed for researching into the mind in order to improve mental wellbeing.

### Exploring the mind to achieve complete mental wellbeing

The work described in this oration is based on participatory research into the mind, on the premise that thought is the common determinant of many psycho-social outcomes, and that complete mental wellbeing is achievable. For this purpose, the methodologies available for achieving complete mental wellbeing were reviewed with the following objectives:

- To achieve freedom from relentless thoughts
- To generate a skill of functioning free of ego
- To reflect on own thinking process
- To apply the skills of mind in preventive, promotive, curative and rehabilitative care
- To achieve a totally stress-free state

In this search, the most fundamental task to do was to explore the concept of mind – what is ‘mind’? where is it located in the body? According to the Oxford dictionary, “Mind is the element of a person that enables him to be aware of the world and his experiences; to think and to feel; and the faculty of consciousness and thought”. (8). There are several schools of thought regarding the mind’s relationship with body. Some scholars rely on ‘monism’, which is the mind and body not being two but one, while others rely on ‘dualism’ (9). However, a deep understanding of the perimeters of mind is lacking. Attempts made by modern physical sciences in this regard are also confined to demonstrating brain activation using imaging and synaptic and axonal transmissions via sensory stimuli and related motor responses (10). Such demonstrations fail however to capture the mechanism of processing information within the mind.

According to modern scientific literature, the nature of human mind and how it operates has not yet been fully understood. Cognitive science is a multi-disciplinary study area involving mind, neuroscience, psychology and many other disciplines (11). Scholars in cognitive science assume that representation and computation analogous to a computer, is the mode of operation of the mind (12). However, no method in physical science has explicitly investigated beyond the central nervous system to capture the mind. Further, modern physiological approach has achieved only limited understanding of the mind and mental functions. The renowned physiologists Guyton and Hall in their Text Book of Medical Physiology state that “We do not know the neural mechanism of thought and we know little about the mechanism of memory” (13). These limitations highlight the inadequacies of the ordinary cognitive process in successfully exploring the mind.

As an alternative approach to explore the mind beyond the ordinary cognitive process, current literature identifies spiritual attempts to connect with

mind. Of these, the following approaches that were open for critical appraisal using a scientific approach were identified from three major religions:

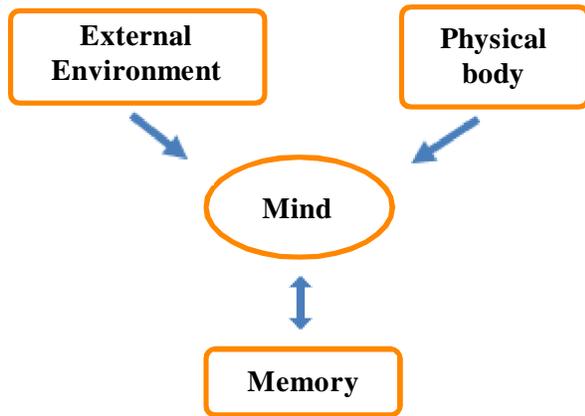
- “Four foundations in mindfulness lead to Nirvana”. – Maha Sathipattana Sutta (14)
- “A person who has a stable mind is called Sthita Prajna. He alone is qualified for liberation”. – Bhagavad Gita (15)
- “For to set mind on flesh is death, but to set mind on spirit is life and peace”. – Romans 8:6 (16)

These approaches are extensively explored in an emerging multi-disciplinary field ‘contemplative neurosciences’ – a new arm in neurosciences that includes the study of neural mechanisms of mindfulness meditation (17). In this field, there are many methods that have been used to study and train the mind, one of which is focusing attention on an object or an event. These techniques give one-pointedness of mind, which have been proven to reduce stress among cancer patients (18) and improve glucose tolerance in diabetic patients (19). Medical practice recommends these techniques for a relaxation response, also described several millennia ago by prophets in Asia and in the recent past by Herbert Benson, a physician in the USA (20).

Another method for training the mind is insight meditation. In insight meditation, the practitioner gets first-hand understanding of the interplay between body, mind and the store of memories, and on how they interact to create unique individuals in each person. This method has been expounded by The Buddha in 6th century BC, and was known to free the mind of all attachments, the final result of which is Nirvana.

### Insight meditation

Insight meditation undertakes a delicate exploration of the mind. Accordingly, the mind does not seem to have a specific location. The analogy is a single bird in a wrapped cage, within which the bird can change position, but cannot exist in two places at the same time and be seen by others as the cage is wrapped. The mind occurs when it connects with an object, a process that occurs serially with only one thought occurring at a time. These objects are derived from three sources (21) (Figure 1).



**Figure 1. Three sources of thoughts in mind**

The first source of thoughts is objects external to the body, which are captured by one or more of the five sensory organs, for example an image of a flower on the retina of the eye. The nervous system captures this image and then by the mind. The mind's perimeter is maximally the retina of the eye in this instance, and not the flower out in the environment. Sound, smell, taste and touch are captured in the same way demarcating the mind's perimeter. The second source of thoughts is internal, which is the physical body itself. Thoughts are in relation to pain, hunger, thirst and other bodily sensations. The third source of thoughts is the stored memory with an unimaginable collection of competing thoughts. These memories in the store are laden with varying degrees of urgency, intensity and magnitude, and compete with each other to pop up as a thought. This is the mechanism of ordinary cognitive process which is more fundamental and generic than the cognitive processes that had been described in 19<sup>th</sup> century by Swiss psychotherapist Carl Jung (22).

Insight meditation practice includes three components: physical conduct, mindfulness and experiential learning (21). 'Physical conduct' includes sitting motionless, which requires substantial psycho-somatic endurance. 'Mindfulness' has four components:

1. Contemplation on the body/body part, such as letting the mind scan the body ('Kayanupassana' in literature)
2. Contemplation on the distractions from the following sources: external world captured through the five sensory organs (eye, ear, nose, tongue and skin); physical body itself; and stored memories ('Vedananupassana' in literature)

3. Contemplation on the thoughts, which is on the behaviour of individual thoughts, seeing how they originate from the five sensory organs and memory, and lasts for a while and disappear, frequency and repetition of certain thoughts and the continuity of the thought process ('Chittanupassana' in literature)
4. Contemplation on detachment, which is seeing the mind's desires waning, in which the practitioner sees the mind freeing itself from previously uncontrolled desires ('Dhammanupassana' in literature)

Insight meditation lets the mind go through four levels of deepening mental quietude with less internal noise and extreme mental comfort. This process creates a medium of qualitative observation which is direct and free of language. It is a learning and transformation process for the mind. This practice also gives a relaxation response and unlearning of personal biases and prejudices leading to a path of fading ego while experiencing the details of thinking process and experiencing detachment (22).

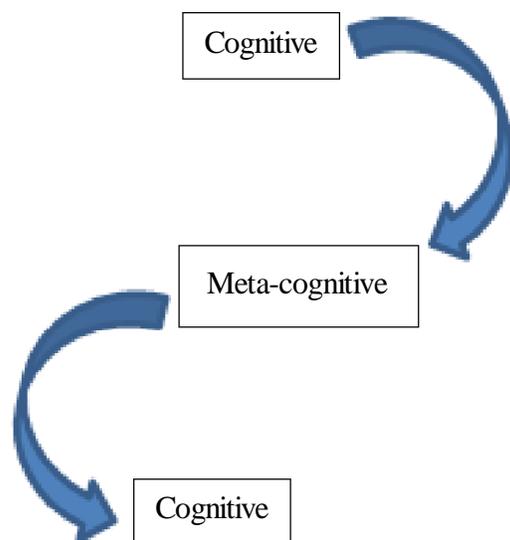
When the mind settles with dwindling thoughts, one sees the details of each thought. Details include that the individual has no control over the occurrence of thoughts, and the reason for such occurrence is the inherent glue-like nature of the mind to attach itself. This experiential learning includes much more details with continuing practice. If benefits are to be gained, it is essential that mind training using insight meditation be part of one's lifestyle. It should be regular and done for a sufficient period of time to have a transformation in the mind. There have been attempts to describe this methodology and its potential applications in scientific terms, in order to avoid its mystique outlook through a multitude of dissemination modes (23-27).

### **Understanding the mind through insight meditation**

How the mind interacts with body and memory is complex, and can be compared to a computer. The computer receives information from its input devices (e.g. key board, mouse, scanner and camera) and processes this information by the central processing unit before storing it in the hard disk. The information is retrieved from the hard disc whenever the need arises. Similarly, the mind captures images from the five sensory input devices of body. The captured image

is further processed by the mind. Some thoughts are strongly valued by the mind and get automatically stored in memory. Once stored, these memories pop up as thoughts again, immediately or sometime later. Individual has no control over this value addition, storage and pop up process, all of which could bring out mental stresses. When the mind fully learns to let go of these pop-up thoughts and is able to sustain this skill, a person will be absolutely free from mental stress (21).

During insight meditation, the practitioner removes the glue-like nature of the mind that gets attached to objects, thereby reducing the thought process. It removes ego and prejudices going beyond the ordinary cognitive process. For example, when such a person is confronted with a provocative conversation, his mind will not capture that conversation and therefore will not lead to any stress, in contrast to a person with less training having disturbing thoughts that will be stored in his memory, leading to capture, re-capture and constant anger (21). Such a person who breaks the cognitive barrier can also switch to the ordinary sensory organ based perception, giving him dual perception capability (21) (Figure 2).



**Figure 2. Dual perception capability in insight meditation**

With dual perception capability, the practitioner is able to switch to meta-cognitive realm and remain free from stress. It would not let the person look different, however much his mind is ruffled. During normal life too, the perception of sensory organs is made with

low internal noise, creating a therapeutic effect on mental stress. Such a person is able to separate the mind from his physical body and memory, splitting oneself into three constituents. This skill of separating the mind from body at will is epistemologically and scientifically deeper than the theory of dualism described by Rene Descartes (28).

Dual perception capability helps in understanding that complete mental wellbeing spreads across two epistemological paradigms. One paradigm (cognitive) is the knowledge acquired through physical sciences that can demonstrate sensory pathways and brain activation through imaging and electrophysiological techniques. The other paradigm (meta-cognitive) is beyond the normal cognitive process requiring phenomenological approaches. These two epistemological paradigms make up the complete spectrum of knowledge required to understand the mind, body and memory.

There is another spectrum which is more practical and useful than the epistemological paradigm to understand complete mental wellbeing, called mental health spectrum (21). In this, all human beings can be placed in a spectrum in relation to how their minds perform. The spectrum ranges from patients with major psychiatric illnesses to those who achieve complete mental wellbeing (Table 1).

### **Application of insight meditation in clinical practice**

Skills achieved through this exercise have a multitude of applications in managing NCDs, in personal and professional development, and in achieving better states of mental wellbeing (24, 29).

#### **• Enhanced work performance and patient care**

In clinical practice, developing skills for promoting mental wellbeing is indispensable for proper and customized patient care including one's own health care. Acquiring meta-cognitive skills is unique to insight meditation and is in addition to the usual relaxation response (20), brought about also by other methods. This has extensive advantages such as maintaining focus on a job at hand, better multi-tasking capability, contentment, happiness and emotional stability. Experiencing noise-free states also permits self-charge of mental energy and clarity. These are prerequisites for a good quality healthcare provider.

**Table 1. Mental health spectrum of complete mental wellbeing**

| <b>Mental spectrum</b>           | <b>Behaviour</b>  | <b>Function</b>   |
|----------------------------------|---|---|
| <b>Major psychiatric illness</b> | <ul style="list-style-type: none"> <li>• No insight</li> <li>• Shows insane behaviour</li> </ul>  | <ul style="list-style-type: none"> <li>• Accepts paranoid thoughts originating from stored memories as true</li> <li>• Unable to verify thoughts with the external environment and physical body</li> </ul> |
| <b>Minor psychiatric illness</b> | <ul style="list-style-type: none"> <li>• Insight preserved</li> <li>• Shows anxieties, fears, etc.</li> </ul>                               | <ul style="list-style-type: none"> <li>• Aware that fearful thought is not realistic though unable to let go</li> </ul>   |
| <b>No clinical illness</b>       | <ul style="list-style-type: none"> <li>• Normal insight</li> <li>• Regular normal function with normal cognitive skills</li> </ul>          | <ul style="list-style-type: none"> <li>• Able to verify thoughts with other sources, and let go of it and get on with other thoughts for regular normal behaviour</li> </ul>                                |
| <b>Progressively positive</b>    | <ul style="list-style-type: none"> <li>• Progressively positive mental wellbeing with normal cognitive and meta-cognitive skills</li> </ul> | <ul style="list-style-type: none"> <li>• Able to let go of thoughts to free the mind from its attachment to thoughts</li> <li>• Shows relaxation response and other advantages of insight</li> </ul>        |
| <b>Complete mental wellbeing</b> |   | <ul style="list-style-type: none"> <li>• Able to stop all thoughts as long as they want</li> </ul>  |

In a quasi-experimental study conducted in the Rheumatology Unit of the National Hospital of Sri Lanka, it was revealed that patients diagnosed of arthritis were benefited by a course of insight meditation (30). Those who practised regularly showed significant reduction of the number of joints involved and pain, compared to the control group. It has also shown improvement in performance and happiness among health personnel (31), and happiness ( $p=0.002$ ) and reduced stress ( $p=0.02$ ) among university students against non-meditators (32). Further studies however are needed to establish the causal relationship in different settings.

Insight-related skills provide an additional tool for making diagnosis. One such tool is meta-cognitive psycho-analysis (33), which is on the interplay of body, mind and memory of a patient. This skill can provide a more customized care to patients, reaching a deeper level on how patients' body, mind and memory behave. This can also be useful as a method for promoting mental wellbeing among in-ward patients following acute management. Such supportive care is scarce in Sri Lankan hospitals except for patients diagnosed with

psychiatric conditions. The patient management plan should start addressing the mind simultaneously with physical illness, or even before. To catalyze this, bed head tickets should incorporate a designated place to enter the mental wellbeing status of all patients.

Physician not addressing the mind implies that the compassionate and caring healer, the artist in physician is lost. Compassion and mind-related skills have the potential to be developed into a specialized discipline in clinical medicine. To enhance compassion, training programs should be initiated for all health personnel in promoting mental wellbeing and meta-cognitive skills. Such insight meditation based programs for promotion of mental wellbeing have been offered, and feasibility of such methods and positive outcomes has been documented (32-33).

#### • **Mind to mind journal**

Creating a new concept of "mind to mind journal" is a felt need. It would provide a platform for practitioners to share experiential evidence on methodologies used for improving insight-related skills, which could

be reviewed qualitatively. It is worth sharing such evidence as there is absolutely no other way to explore so extensively into mental wellbeing.

### • Dual perception capability in medical curricula

Towards providing holistic care, training opportunities should be provided for medical students to address the mind of all patients. It is prudent to include a module on insight and techniques used in the undergraduate and postgraduate curricula under medical humanities, behavioural sciences or similar stream. Another option is offering electives in insight meditation which is already adopted by the department of Community Medicine, University of Colombo.

### • Multiple ripples approach

An initiative has been made to train people on insight for promotion of mental wellbeing (33). Those who had been practising with commitment act as trainers in local areas, and a second tier of trainers trained among the followers to develop secondary ripple centres, creating ripples in many areas.

### Strengths and limitations

The insight meditation method used is capable of analyzing one's own cognitive process, while the skills achieved in cognitive, affective and psychomotor domains are demonstrable. Showing evidence on self-transformation using a method that is invisible, entirely experiential and has no language, is a new challenge, which is not yet fully familiar to the scientific community. Therefore, a major limitation of this method is the difficulty in communicating the experience to others who have no experience in the practice. Because of this difficulty in translating it to a language, there is a serious obstacle in publishing this type of work in the conventional print or electronic media. To review the methodology, it is essential to have scholars with meta-cognitive experience or trained in insight meditation, as reviewing such methodology is incomplete and flawed if not done being in the same plane of meta-cognition.

In summary, methodology used in insight meditation is transferable, evidence based and experienced as in a participatory qualitative research. It can be adopted for improving mental wellbeing of

healthcare providers as well as patients in clinical practice. Entering into this field is anyone's choice and endurance.

[Work related to this oration is based on the experience gained on insight meditation practised for two decades by the orator. He acknowledges the guidance given by Arahant Lankapura Sariputta Thero.]

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