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Towards a Better Understanding of Health and Disease

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1. Introduction

Health is not merely an absence of disease or infirmity but a state of complete physical, mental and social well-being [1]. What then is a 'dis-ease' and what is a considered to be a state of complete physical, social and mental well-being? Being 'healthy' is often based on a statistical norm of 'normalcy' - the basis for most diagnostic tests. Health care as a biopsychosocial model is going through a transformation as shown in Table I. In the newer model, causes, development and outcomes of an illness are not looked at in isolation but are determined by physiology, biochemistry and their interaction with psychological, social and cultural factors. Human being is not merely a physical reality but a continuum of consciousness or awareness with the physical body at one end of this awareness spectrum. In complex systems, the whole is more than the sum of its components expressing properties not seen or predicted from the individual components [2]. Many of the behavioral health factors such as freedom from physical and emotional pain, freedom from selfishness, increased adaptability, and creativity define health to a complementary and alternative or CAM practitioner [3] and are consistent with a Lorenz attractor pattern, attractors that balance entropy and provide dynamic order out of chaos. There is thus a need for a more meaningful unifying explanation for health and disease in order to better understand the role of interventions in various health care modalities.

Health care component	Old view	Evolving view
Focus	Combative	Fostering health
Emphasis	External factors	External and Internal factors
Causative agent	Germs as pathogens	Re-visiting the seed & soil hypothesis - host pathogen interaction
Role of Client/Patient	Passive recipient of Rx	Proactive and interactive
Belief system	No role	Critical role
Healer/Physician's role	Primary	Secondary - a catalyst & a collaborator in regaining balance

Table 1. Changing view of Health Care

The psychosomatic nature of most illness is but obvious today and from the recorded past. Hippocrates had mentioned: "It is better to know the patient who has the disease than it is to know the disease which the patient has". Galen made the observation that only 20% of his patients had some physical basis for their symptoms. This paradigm was reflected in a recent study which found that only 16% of complaints in general medical clinic patients could be explained by biophysical paradigm of disease [4]. Contrary to what is commonly assumed, not all victories over illness and disease were a direct result of biomedical advances or better nutrition or availability of clean water. Diseases such as measles, scarlet fever, pneumonia, tuberculosis, typhoid, diphtheria and polio were on a decline even before the advent of medical advances specifically targeting these diseases [5]. An increase in hope and a decrease in despair and hopelessness during the beginning of last century had been a critical factor underlying this improvement. Hopelessness and pessimism has been linked to risk of disease [6] and is significantly associated with mortality such as in heart disease [7].

Human being, the epitome of the evolutionary process on this planet, is a myriad complex life form that has attributes not easily mirrored by other life forms such as being capable of manifesting emotions of altruism even towards a perceived enemy that inflicts pain. Life as a dynamic system involves ongoing interactions between stimuli and the sensory apparatus. Stimuli can be both external and internal - some of which being the result of a conditioned repetitive behavior or habit patterns. 'Awareness' (a.k.a the Vital Force of homeopaths) is that part of the consciousness a total absence of which from the physical web of matter defines 'physical death' and which when sullied away from the present moment by enmeshing in a web of unmet needs of cravings and aversion gets constricted by a strong behavioral pattern seeking pleasure while avoiding pain that often leads to the initiation, progression and maintenance of a 'dis-ease' process. To be healthy means to flourish within an optimal range of functioning connoting goodness, generativity, growth, and resilience [8]. An un-constricted awareness involved in flourishing promotes and maintains sensations of well-being and promotes self-actualization.

2. Three domains of reality

Awareness can exist in three domains of reality. The Newtonian domain is our day-to-day world of interaction in the superfluous physical world of cause and effect. Underlying this is the world of quantum reality constituting mainly of space and subatomic particles. Behind these veils of external reality is the non-local phenomenon from which consciousness emanates and permeates as awareness or VF in all other dimensions including mind. A cell is a basic building block of the physical reality of the human body while the sub-atomic particles are the basic unit of the quantum world and 'awareness' is an element of the non-local self that permeates, integrates and operates the quantum and the physical body. Awareness enables the approximately thousand trillion individual cells that constitute a human being to function in synchronicity and in harmony as a 'self' or an independent functional unit. At death, it leaves the physical web of matter behind leading to its disintegration and breakdown - to be reclaimed back by mother earth. Consciousness has been described as analogous to but preceding the quantum field that has the hall mark of complementarity, non-locality, scale-invariance and undivided wholeness [9]. In the strict sense of neurological science consciousness is defined as consisting of two major

compartments: arousal and awareness. Arousal refers to alertness level that is supported by the subcortical arousal systems in the brainstem, mid-brain and thalamus while awareness is generally referred to as the content of consciousness supported by the functional integrity of the cerebral cortex and its subcortical connections [10]. Awareness brings with it a source of abundant and inexhaustible energy from the non-local domains that can maintain health, cause flourishing, manifest disease and when properly harnessed will fuel the healing process back to health from a dis-ease condition. Awareness when it is undivided and sharp in its clarity and not conjoined in any conditioning, identification or judgement is in an innate state of perpetual bliss and flourishing.

3. Life as continuum of sensations

Life at the physical plane is based on the perceptions of various stimuli received through the five sensory organs and their interaction with mind and the intermingling state of emotions - leading to 'sensations'. Life can be defined as a continuum of sensations which at physical death ceases to influence the physical self. Sensations can be neutral or positive or negative. Most sensations are self-perpetuated through the default behavior pattern of 'pain' avoidance and 'pleasure' seeking learnt through the instinctive drive for need satisfaction and physical survival present within us. When a sensation is not resolved completely, it tends to perpetuate itself in the mind, emotion and the body and invests the attention of awareness. At a certain threshold, sensations become primary center of attention for the awareness which often gets identifies with the sensations and manifests, increases and maintains its' mental, emotional and physical characteristics or 'symptoms' registering it as a pain or discomfort that tends to constricts the awareness in the vice of same repetitive 'feelings'. As for pleasure, most pleasurable things in the long run tend to be a source of pain and hence this repetitive behavior pattern tends to lead one away from well-being and flourishing.

The four interacting information processing systems in humans that are critical in 'flourishing' and 'well-being' are the mind with the functioning of the brain, the endocrine systems, the nervous system and the immune system [11]. Nervous, endocrine and immune systems - the three physical information gateways - cross talk to each other via receptors present on critical cells that can receive and exchange information through messenger molecules [12; 13; 14; 15]. Sensations when they are in consonance with satisfying of our 'needs', promote a feeling of well-being or 'flourishing'. When they are in contrary to our needs it can potentially mitigate the clarity and strength of our 'awareness' by entangling it in feeling agitated, frustrated and despondent leading to a not-at-ease/dis-ease state. Once the seed of inner disturbance is formed, it can attract energy through the modus of awareness and get a life force of its own. This constricts and mitigates the original awareness affecting our mental, emotional and physical well-being and acting as an 'attractor' for generating future disturbance of the mind, emotions and body. In other words, such identification of cause a minuscule split in the original web awareness (a.k.a Vital Force) that permeates all levels of our existence including our disease states which are very much part of our 'self' at a given point of time. This germination of a split in awareness from its' original wholeness culminates in a disarray of emotional and or physical unease, pain, functional imbalance that over due course of time leads to physiological, functional

and pathobiological changes. An unhindered, un-constricted awareness supports the synchronicity of the trillions of individual cells that function in unison to manifest the physical 'self'. What then influences the pattern of sensations in an individual that leads to disease?

4. Critical role of belief system in fostering well being

While genetics and pathogens play a role in disease causation [16], personality [17], lifestyle [18] and environment [19] also play a critical role in manifesting disease [19]. It is known that many individuals despite being infected with a pathogen do not develop symptoms or exhibit 'dis-ease' behavior [19; 20]. Anthropological evidence suggests that beliefs and expectations not only contribute to sickness and disease but also promote healing. Our thoughts, feelings, beliefs and optimism modulate chemical and electrical activity in the brain that can coordinate biological changes. The body responds to external stimuli based on the inner constructs of belief system irrespective of whether the beliefs and ideas are imaginary or based on reality. Similarly, what is important is not so much the presence of actual coping skills the individual has or do not have but what one believes to have or do not have that is a determinant of upsetting health-related equilibrium at the onslaught of any stress [5]. Thus, the perception of a situation is seemingly more critical at times than the situation itself and as mentioned by Hans Selye: "It is not what happens that counts; it is how you take it" [21]. While an adverse incidence can lead to a consequent adverse emotion of trauma or helplessness such as in post-traumatic stress disorder, not all adverse sensations can compromise or constrict the awareness with a negative experience and in contrast may foster more strength and resilience leading in the long run to a higher feeling of well-being as seen in post-traumatic growth [22]. A belief system is what makes a difference between one or the other consequent emotional possibilities arising from an adverse incidence or stimuli. Feeling victimized by circumstance and having a belief system that reinforces this pattern, can find oneself completely traumatized by the situation while a belief system that fosters every experience as an opportunity to flourish will enable one to overcome the seemingly negative experience and become strongly grounded in well-being. A positive belief system seems to strengthen awareness and keep the individual cells in the positive loop of synchronicity or well-being. A completely open belief system is a critical factor in continuing well-being of the individual as it acts as a rudder for directing the power of awareness at maintaining, growing and reinforcing well-being. A study that followed women with early stage breast cancer for five years reported that patients with high score of helplessness at baseline were more likely to have relapsed or died during the five years [23]. A belief system that often evolves from past experiences initiates and strengthens habit patterns in an individual. As our feelings, thoughts, beliefs and hopes change, the ensuing changes in the electrical activity of the brain is changing our biology. Dr Eric Kandell, a Nobel Laureate in 2000 in Physiology/Medicine, explains that belief becomes biology through regulation of gene expressions [24]. Knowledge of the world [25], inner resources [26] made of belief, assumptions and predictions, social support in terms of interpersonal relationships [27], and, spirituality (or spiritual beliefs) [28; 29] are the four important categories of our coping skills [21]. A healthy and positive belief system is a strong defense to illness that allows for re-balancing at the face of an onslaught of stress or

adverse situation. Gratitude which is being recognized by modern positive psychology as a critical component in enhancing a sense of coherence through positive reframing is an important element in nurturing a positive resilient belief system.

5. Understanding needs and human motivation

Since the initiation or continuation of any 'sensation' often arises from the process of satisfying a particular need, Maslow's hierarchy of needs is a tool that enables us to understand the underlying motivation for need satisfaction in the journey of awareness through life. As shown in figure 1, though deficiency-needs or 'D-needs' do not positively reinforce a feeling of well-being and flourishing, if not satiated to a certain degree can lead to a feeling of 'ill-being' that potentially can countermand and mitigate flourishing and well-being. If on the contrary, the needs are more than satisfied at these levels, it still does not positively promote flourishing or well-being. The journey of the human life from birth onwards involves satiety of these needs to a certain required degree for example the basic physiological needs for food, water and air - critical for our survival, if not met to a required degree will manifest as a feeling of distress and disease. On the contrary, a conditioned or tainted belief system would get the awareness stuck through unhealthy identification in one of these needs level thereby seeking continuous gratification that constricts awareness in a powerful entanglement of a blind repetitive habit pattern of pain avoidance and pleasure seeking behavior at that particular need level. When this happens, the possibility of pursuing an immediately higher needs levels by awareness including those of 'Being' needs for self-actualization and flourishing gets compromised. This state fosters an inner resistance and a state of inner conflict that weakens our system allowing seeds of disease including external disease causing factors such as germs to have a better foothold in order to manifest disease and illness behavior. It is as though the awareness is restricted in a narrow constricted web of activity ceaselessly trying to satiate unresolved sensation of deprivation arising from that particular category of need. The problem often at this 'D' or deficiency need-level is that sensations that causes pleasure ends up very often causing pain and suffering in the long run - and so trying to continuously satisfy needs at a particular D-level is unlikely to lead to a feeling of long term well-being. If on the other hand, awareness does not get afflicted at the D-level which has been satiated to the healthy levels required then it is likely to be available for pursuing the 'Being' or 'B-needs' that leads onwards to self-actualization positively enhancing well-being and flourishing. The possibility of awareness to be aware of itself in its' pristine non-local element in a global way whilst being connected to everything (Universe) and yet being in the body is a highest positive state of well-being and flourishing with a corresponding higher state of psychological, neurological, immunological and endocrinological well-being that can ward off any feeling of 'disease'. Awareness in the physical body of a new born is instinctive in seeking to satisfy the physical and physiological 'D' - needs. This often sets in the age-old habit pattern of pain avoidance and pleasure seeking behavior that manifests itself as personality or ego traits. The ego is a mask that imparts a coping mechanism and a transient feeling of protection from presumed or real adverse conditions and situations. This ego or the mask when it goes through self-deprecating life experiences develops a negative belief system allowing adverse emotions such as despair and hopelessness to manifest immediately on facing a perceived adverse situation. While a positive life experience strengthens the link of the body-mind-awareness

synchronicity, a negative life experience causes accumulation of sensation of discomfort in the body-mind interface that if unresolved over a period of time leads to bodily pain, discomfort and will promulgate functional, physiological and pathological dis-ease changes in the body.

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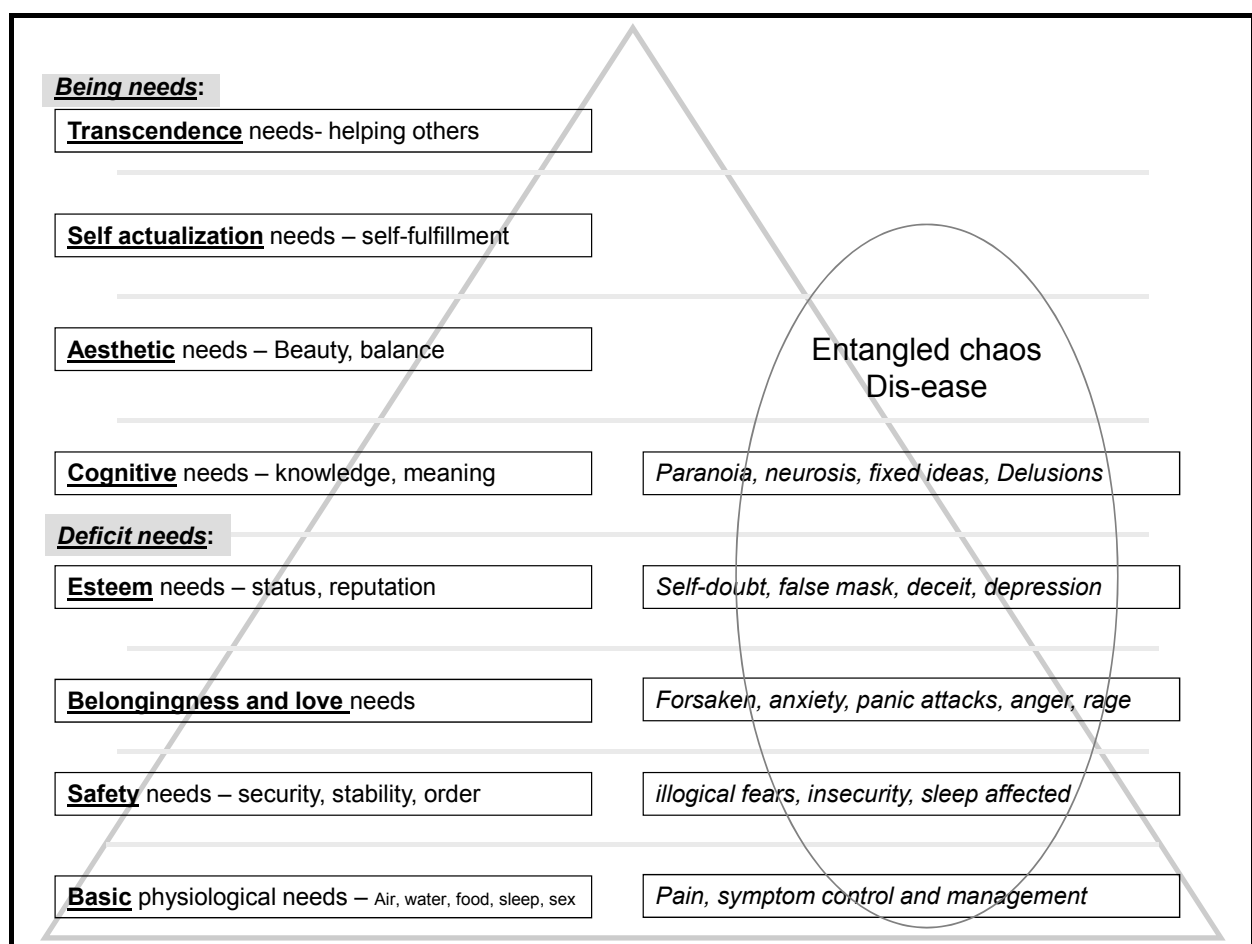


Fig. 1. Maslow's Hierarchy of Needs

6. Role of emotions

Thoughts are abstract concepts that without the interface of emotions seldom impact the body physiologically. Emotion enable us to assess a situation as beneficial or detrimental without depending on external evaluation and are a result of millions of years of evolution that often cause a default response to common experiences. Emotion produces coordinated changes in thoughts, actions and physiological response and help in one's pursuit of pleasures and satisfaction. While negative emotions narrow one's thought-action repertoires and manifest specific action tendencies (such as attack or flee), positive emotions broaden one's momentary thought action repertoires evoking a wider range of thoughts and actions (play, explore, savor, integrate) that enables flourishing [30]. One can say that negative emotion constricts and positive emotion enables maintenance or expansion of awareness that can lead to better flourishing of an individual. Positive emotion enables one to cope effectively with chronic stress, enhance psychological and physiological resilience enabling speedy recovery from disease. While perceiving threat in negative experience does have some immediate adaptive benefits, in the prolonged period this can have deleterious effects on one's psychological and physical well-being.

The subject of positive psychology that has caught up with researcher's interest is not new and can be found in ancient esoteric traditions. For instance, the 2,000 years old Buddhist teachings embodied in 'Abhidhamma Samuccaya' had dealt with this topic quite exhaustively while laying down its' importance in physical and psychological well-being. In Buddhist doctrine, flourishing that arises from equanimity and insight into nature of reality is considered more critical for a lasting well-being than a fleeting arousal of emotion or mood though sensory and conceptual stimuli. Similarly the concept of suffering in Buddhism is not merely an unpleasant feeling but the basic vulnerability to suffering and pain consequent to misapprehending the nature of reality. Training in attention, emotional balance and mindfulness (sati) is considered important for sustained well-being that arises from learning to distinguish between the way things are as they appear to the senses and the conceptual superimpositions projected upon them. The goal is not just individual flourishing but also a feeling of universal well-being to which too belongs all other sentient beings and their flourishing [31]. It specifically lists the following eleven positive emotions as virtuous faculties that will help harness awareness into flourishing and self-actualization: faith, integrity, consideration for others, non-attachment, non-hostility, non-harmfulness, non-confusion, joyous efforts, equanimity, pliancy and conscientiousness. Similarly it lists 26 mental faculties along with its' negative emotions as afflictive constricting awareness and increasing dukkha or suffering and ill-behavior: attachment, anger, pride, ignorance/confusion, deluded pride, deluded view/outlook, wrath, non-alertness, inconsideration, vengeance, spite, de-stimulation, jealousy, excitement, dullness, pretention, distraction, complacency, destructiveness, lack of integrity, concealment, unconscionable, laziness, miserliness, lack of faith, harmfulness and forgetfulness. The three mental processes that is the basis for all dis-ease are cravings (tanha), aversion or hatred and grasping onto one's own or others' reified personal identities (ego) as real. Craving, the desire to acquire objects and situations for self, disrupts the mind as it falsely displaces the source of one's well-being from one's own mind to objects thereby disrupting the balance of mind and giving rise to anxiety, misery, fear and anger with their corresponding emotions. Cravings results in dopamine activity in the nucleus accumbens of the brain and results in reinforcement of a behavior addiction pattern that is not associated with pleasure in the long

term. Similarly hatred or aversion traps the mind into the deluded belief that the source of suffering belongs entirely to an external object and constricts awareness and enables 'disease' states to manifest. Since the 'self' is in a constant dynamic flux that is interdependent with other beings and environment, superimposing the concepts of permanence, singularity and autonomy onto reality is the root cause 'ill-behavior' based on craving, hatred, jealousy and arrogance [31].

7. Mindfulness and well-being

Mindfulness is paying attention in a particular way to the internal and external experiences occurring in the present moment non-judgementally in order for one to be aware of thoughts, feelings and bodily sensations without trying to modify or act on them. It enables one to learn the skills of recognizing and disengaging from self-perpetuating patterns of ruminative, negative thoughts [32]. A sustained mindfulness, introspection and meditation practice is conjoined with cultivation of attentional stability and vividness. Mindfulness-based cognitive therapies protects against relapse and recurrence of psychiatric disorders on a par with that of maintenance antidepressant pharmacotherapy [33]. Oxytocin [34], opiates and serotonin are generated in the amount required by the central nervous system as a result of meditation and mindfulness, for enhancing flourishing and a sensation of well-being [35]. Mindfulness based techniques have been shown to significantly improve various conditions: pain ratings and other medical and psychological symptoms in chronic pain patients; anxiety disorders, panic attacks, depression; binge eating; fibromyalgia, and, quality of life in cancer patients [36]. The effect of meditation on stress reduction and healing or re-balancing is been studied by researchers. It has been found to reduce plasma and salivary cortisol levels, bring the cytokine and natural killer cell activities closer to normal levels in cancer patients, increase antibody titer to influenza vaccine, lowered stress-induced increase in interleukin-6 and decreased C-reactive protein [32].

8. Healthcare modalities

As stated above, unremitted and unresolved sensations cause malaise and disease. How a treatment modality approaches to help re-balance the self into attaining well-being differs on the modality type. In conventional or allopathic medicine, a drug is administered based on the principles of 'contraria contrariis curantur' where the active ingredient opposes the onset of symptoms by blocking or cutting off one of the key element of the disease symptom manifestation biochemical pathways and thereby not allowing pain or symptoms of malaise to come up. In most cases, the drug is not curative and with the drug effect wearing away with time - the drug needs to be repeated. While this modality allows for pain amelioration, it has the following setbacks:

- a. It is rarely, if at all curative and hence needs to be taken periodically on a regular basis for chronic illnesses, thus making one dependent on it - often for a life time with the consequent high cost to medical health care system;
- b. Since the course of drug action becomes smaller over a period of time, the dosage often needs to be increased or the drug changed when it is found to be no longer effective in ameliorating the symptom conditions of the disease;
- c. Many drugs are known to have side-effects where additional symptoms or sensations of a newer type of discomfort arise in the body-mind continuum. Approximately 6.5% of

all hospitalization in general population is as a result of adverse drug events [37] causing ~225,000 deaths annually in US alone [38];

- d. Often the individual's well-being declines over time due to strengthening of the primary disease with conventional medication.

Conventional allopathic medical practitioners due to their training base are not easily able to incorporate the biopsychosocial model in their practice except occasionally in some chronic illness management. This resistance is due to an increased demand in knowledge base and time investment, besides learning a new style of patient-doctor relationship required to better understand and manage patient illness [39].

In contrast, many of the CAM modalities try an approach that is conducive with the inner sensation of 'dis-ease' reversing itself. A moot case in point is homeopathy, where the remedy is tailored to the needs of the patient based on the presenting symptom picture which includes symptoms of the mind, body and emotion. Homeopathy follows the doctrine of 'similia similibus curantur' where a substance that can cause a similar discomfort in a healthy individual is used, often, in a non-material dose. This use of a non-material dose itself is a paradox which makes it difficult to study the underlying mechanism. Classical homeopathy case taking is generally quite elaborate as it individualizes each case by determining the four quadrants of manifesting symptoms: sensations, locations, modalities and concomitants. Furthermore, symptoms other than the primary complaints are also delved into including possible past or current mental or emotional stressor that may have at least partially be responsible for the presenting disease conditions. The advantages of a CAM modality such as homeopathy are:

- a. It is non-toxic, inexpensive and is not known to cause any side effects in most cases;
- b. It promotes re-balance without undue suppression of symptoms through use of remedies that elicits a response from the psychoneuroimmunoendocrinological systems through making available sensation similar to that of the natural disease (corollary as in vaccination which uses the principle of same) for the system to wake up and initiate a healing process back to health and well-being, thereby promoting a complete cure where after the remedy is no longer needed;
- c. Homeopathic case taking by itself has a proven positive therapeutic effect as it delves into great details in understanding the origin and maintaining factors of the disease condition;
- d. Often the emotional and psychological causative factors underlying the physiological or functional or pathological condition gets resolved prior to complete cure;
- e. The process encourages a proactive approach on the part of the patient. In the long term, this ensures a positive health benefit by instilling a sense of positive participation in the maintenance of one's well-being. This instills a feeling of positive empowerment and not helplessness with one's condition in chronic cases;
- f. Finally and importantly, it frees awareness from entanglement with the symptom producing complex enabling it to continue its onward journey towards expansion and flourishing.

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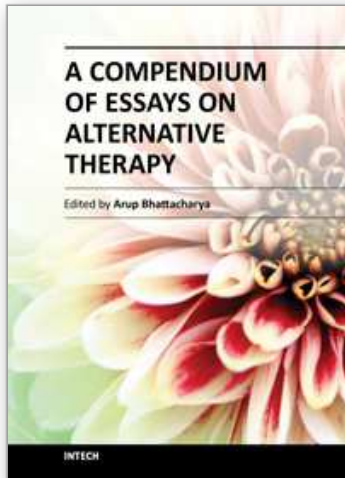
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A Compendium of Essays on Alternative Therapy is aimed at both conventional and alternate therapy practitioners, besides serving as an educational tool for students and lay persons on the progress made in the field. While this resource is not all-inclusive, it does reflect the current theories from different international experts in the field. This will hopefully stimulate more research initiatives, funding, and critical insight in the already increasing demand for alternate therapies that has been evidenced worldwide.

How to reference

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