INTRODUCTION

Today in this world all around, we find suffering, pain, disorders, war, disharmony, distrust, and feeling of insecurity, frustration, stress and conflict galore. There is an enormous selfishness present in human beings which leads to all kind of miseries and ills in society. Human being has become narrow minded and self-centered to the extent that he does not hesitate to torture others for the sake of his happiness.

In such a scenario as stated by Daniel Goleman (1995) a blend of spiritual awareness, mindfulness, and emotional intelligence is required because “it enhances the quality of life not through trapping, but by adding spice to the small moments of every day.” In recent years there has been an explosion of scientific work on consciousness in cognitive neuroscience, psychology, and other fields. It has become possible to think that human beings are moving toward a genuine scientific understanding of conscious experience.

The Concept of Meditation

Meditation is generally an internal, personal practice and done without any external involvement, though many practitioners of meditation may rely on external objects such as candle flames as point on which to focus their attention as an aid to the process. Meditation often involves invoking or cultivating a feeling or internal state, such as compassion, or attending to a specific focal point. Meditation is a mental exercise in which one directs one’s mind to think inwardly by shutting one’s sense organs to external stimulations. It is a Vedic exercise which can be used as a powerful instrument to restrain sense organs, control autonomic nervous system and also to attain super consciousness. *Dhyana* is the generic Sanskrit term for meditation, which in the *Yoga Sutras* refers to both the act of inward contemplation in the broadest sense and more technically to the
intermediate state between mere attention to an object (*dharana*) and complete absorption in it (*samadhi*).

“The word *meditation* is used to describe practices that self-regulate the body and mind, thereby affecting mental events by engaging a specific attentional set” (Vaitl et al. 2005). “Meditation refers to a family of self-regulation practices that focus on training attention and awareness in order to bring mental processes under greater voluntary control and thereby foster general mental well-being and development and/or specific capacities such as calm, clarity, and concentration.” (Walsh & Shapiro, 2006) “The need for the meditator to retrain his attention, whether through concentration or mindfulness, is the single invariant ingredient in…..every meditation system” (Goleman, 1988).

Meditative styles can be usefully classified into two types—mindfulness and concentrative—depending on how the attentional processes are directed. Most meditative techniques lie somewhere on a continuum between the poles of these two general methods (Andresen, 2000; Shapiro & Walsh, 1984; B. A. Wallace, 1999). Mindfulness practices involve allowing any thoughts, feelings, or sensations to arise while maintaining a specific attentional stance: awareness of the phenomenal field as an attentive and nonattached observer without judgment or analysis. Examples include Zen, Vipassana, and the Western adaptation to mindfulness meditation (Kabat-Zinn, 2003). Concentrative meditational techniques involve focusing on specific mental or sensory activity: a repeated sound, an imagined image, or specific body sensations such as the breath. Examples include forms of yogic meditation and the Buddhist Samatha meditation focus on the sensation of breath. Transcendental meditation (TM) fits somewhat within the concentrative forms, because practice centers on the repetition of a mantra, but the method places a primary emphasis on absence of concentrative effort and the
development of a witnessing, thought-free “transcendental awareness.” The mantra is thought to eventually occupy awareness during meditative practice without concentrative effort, thereby possibly distinguishing the technique from other concentrative practices (Mahesh Yogi, 1963; Travis, Teece, Arenander, & Wallace, 2002). Transcendental meditation involves the continuous chanting of a mantra, until a dream-like state of mind is attained. This is useful for those who are easily distracted as chanting a mantra will prevent one’s mind from wandering. Transcendental meditation facilitates memory of right hemisphere functioning (Pagano, 1979). Internal use of the mantra in TM may improve left hemisphere as it improves verbal memory (Kory & Hufnagel, 1997). The practice of TM improves academic performance of university students (Kember, 1985).

Although these perspectives make it difficult to classify a given meditative practice as purely mindfulness or concentrative meditation, the two styles overlap in their approach toward similar goals. The former requires the maintenance of attention in a state of open perceptivity, and the latter requires narrowing of attentional focus. Mindfulness-based practices tend to encourage a continual return to an attentive set that is characterized by open, nonjudgmental awareness of the sensory and cognitive fields and include a meta-awareness or observation of the ongoing contents of thought. Concentrative techniques incorporate mindfulness by allowing other thoughts and sensations to arise and pass without clinging to them and bringing attention back to a specific object of concentrative awareness to develop an internal “witnessing observer.” Thus, the methods used to elicit specific states differ across practices, but the results similarly produce reported trait changes in self-experience: eliciting shift toward expanded experience of self not centered on the individual’s body schema and mental contents (Mahesh Yogi, 1963; Naranjo & Ornstein, 1971; Ornstein, 1972; Wallace, 1999; West, 1987).
Pandaya (2004) quoted; Dhyan is a state of pure consciousness, which transcends the inner and outer senses. Patanjali Yogashastra links it with ekagrata or concentration. According to Sri Aurobindo, Dhyan is that state in which the inner mind tries to see the reality behind things. Ekagrata means focusing the consciousness on one point or object and keeping it steady in one state. In yoga, ekagrata is achieved when the mind is deeply engrossed in a special condition like quietude, or action or aspiration or resolve. This is called meditation. It is a form of Dhyan. Dhyan, when constant, is called dharna. In dharna, for the first time, the power of consciousness is directed towards the inner being. When the mind, fixated with only one object, sees only that object and nothing else, it is the state of Dhyan. In yoga, the process of keeping chitta centered on any external or internal object for a long time is called avadhan. In dharna, the flow of this process or action remains constant in the desired direction. In its normal condition it is not continuous. The action of making this very flow of chitta continuous and unbroken is called Dhyan. It is a special state of chitta. According to Agni Puran, contemplation with a calm mind is Dhyan.

Dhyan is regarded as a fundamental attribute of the behavior of all living beings, not simply, of humans. Woodworth writes in ‘Psychology’ “The mind reacts to certain selected actions only rather than react uniformly to all actions which it receives in a given moment. It concentrates on only one single impulse or a group of impulses and virtually neglects the rest. In the next moment, another impulse takes the place of the former at the center”. According to Woodworth, Dhyan or concentration means becoming alert and activated for the purpose of seeing an object or doing some act. Thus according to him Dhyan may be of two types momentary and continuous. In the beginning, it is of course, momentary but it gains continuity
by continued application of mind in it. Sidney Smith opines that Dhyan is nothing but to forget everything else except the objective.

References to OM in the Scriptures

References in the Upanishads

Om is the name of symbol of God (Ishwara, Brahman) (Chinmayananda, 2002) Om covers the whole threefold experiences of man. It is the combination of three letters, namely, A, U, and M (Sivananda, 2005) “A” represents the physical plane. “U” represents the mental and astral plane, the world of intelligent spirits, and all heavens. “M” represents the whole deep-sleep state, which is unknown even in our wakeful state. This concept has been well described in various Indian scriptures. In Mandukya Upanishad, it has been described that Om is the syllable of the past, the present, and the future (Chinmayananda, 1984). From the original sound, Om, all things become manifest as its extension embodiments (Chinmayananda, 1984). The analogy in Mandaka Upanishad describes that OM is the bow; the soul is the arrow; and Brahman is the target.

References in Patanjali’s Yoga Sutras

Patanjali’s Yoga Sutras (PYS) is one of the classical yoga texts in which the explanation about OM is well defined (Taimini, 1986). In PYS, there is a single direct mention about Pranava (Om). That is Tasya vachakah pranavah. This literally means that pranava is virtually Ishwara or Om, where Ishwara is the word denoting God.

Scientific studies on Om suggest that the mental repetition of Om results in a physiological state at one time characterized by reduced physiological alertness, increased sensitivity as well as synchronicity, as well as changes at specific levels along the auditory
pathway suggestive of increased sensitivity to sensory transmission. Omkar chanting significantly effects the concentration, memory and level of fatigue. (Khawale, 2011) Pranav japa increases the Self-concept and decreases the depression. (Singh, 2011)

People who meditate daily are much happier, healthier and live longer than those who do not meditate. Advanced meditators (who can reach deeper levels) develop the ability to use their whole brain and to live in a more balanced state characterized by brain synchronization and whole brain functioning. Meditation improves brain coherence (Hagelin, 2010).

**The Concept of Prayer**

Prayer is a form of religious practice that seeks to activate a volitional rapport to God through deliberate practice. Prayer may be either individual or communal and take place in public or in private. It may involve the use of words or song. When language is used, prayer may take the form of a hymn, incantation, formal creedal statement or a spontaneous utterance in the praying person. There are different forms of prayer such as petitionary prayer, prayers of supplication, thanksgiving and worship/ praise. People pray for many reasons such as personal benefit or for the sake of others.

The word “pray” comes from the Latin word precari, which simply means to entreat or ask. In fact, although pray is not often used this way anymore, it can simply mean “please”. The word prayer or ‘prarthana’ (in sanskrit) is derived from two words ‘pra’ and ‘artha’ meaning pleading fervently. In other words, it is asking God for something with intense yearning. Prayer includes respect, love, pleading and faith. Prayer is an important tool of spiritual practice in the generic spiritual path of devotion. The meaning of upasna is – to sit near; have nearness or company. When we stay close to something, the qualities of that would come to us naturally.
Benor (1993) defines healing (and prayer) “international influences of one or more people upon another living system without utilizing known physical means of intervention”. Chants are said to be raising our voices to God. Chanting is singing our prayers. Chant is vocal meditation. Chant is the breath made available in tone. Chant is ‘discovering’ spirit in sound.

Larson and Larson (1991) surveyed 12 years of publication of the American Journal of Psychiatry and Archives of General Psychiatry. They found that when measuring participation in religious ceremony, social support, prayer, and relationship with God, 92% of the studies showed benefit for mental health, 4% were neutral, and 4% showed harm. McCollough & others (2000) studied that praying or meditating might actually be associated with longevity. Adopting yoga way of life (asanas, chanting of mantra, meditation and puja) is more effective in enhancing visual and verbal memory (Rangan, Nagendra, & Ramachandra Bhat, 2009).

**Attention Regulation**

Attention plays an important role in the life of an organism. “It is the taking possession by the mind, in clear and vivid form, of one out of several simultaneously possible objects or train of thoughts, focalization and concentration of consciousness. It implies withdrawal from something in order to deal effectively with others” James (1890). Attention is closely related to awareness and some have argued that it is necessary for awareness (Dehaene et al., 2006; Mack & Rock, 2001; Posner, 1994). Studies using various paradigms such as inattentional blindness and change blindness have shown that attention not only affects conscious identification of stimuli (Mack & Rock, 2001; Lavie, 2006; Rensink, 2002) but also their phenomenal appearance (Carrasco, Ling, & Read, 2004). On the contrary, other studies have questioned the necessity of attention for awareness (Koch & Tsuchiya, 2007; Lamme, 2003; Tsuchiya & Koch, 2005).
According to Lamme (2003), attention operates on conscious stimuli leading to verbal report rather than consciousness resulting from attended stimuli. Koch & Tsuchiya (2007) proposed a four-fold classification scheme of aware and unaware percepts and behavior into four psychophysically defined categories depending on whether top-down attention is necessary and whether it gives rise to awareness. The organization of these categories include situations and tasks in which (i) attention gives rise to awareness (e.g. detection, discrimination and reportability), (ii) inattention does not give rise to awareness (e.g. rapid vision), (iii) attention does not give rise to awareness (e.g. priming, visual search) and (iv) attention is absent while awareness is present. The fourth case of processes that do not need top-down attention but gives rise to consciousness is based on findings of better performance under conditions of inattention (Kanai & Verstraten, 2006; Li et al., 2002; Lou, 2001; Suzuki & Grabowecky, 2003).

Attention is not a unitary process and different types of attention might have different relationships to awareness. One way to characterize attention would be in terms of focused attention and distributed attention (Chong & Treisman, 2005; Demeyere & Humphreys, 2007; Treisman, 2006). Distributed attention involves processing at larger spatial scales whereas focused attention is typically associated with processing at smaller spatial scales (Treisman, 2006). The distributed attention mechanisms involve parallel processing that contrasts with the focused attention mode that individuates objects (Treisman, 2006). Oscillations with different frequencies are associated with different cognitive processes (Klimesch, 1999a; Singer, 1999). For example, alpha oscillations are generally associated with attention, alertness, and task load in general (Klimesch 1999b) whereas gamma oscillations are associated with binding. The functional characteristics of the theta oscillations (generally 4 to 8 Hz) and its role in cognition have been studied extensively (Basar 1999; Jacobs et al, 2006; Klimesch, 1999a). The theta
oscillations are involved with attentional processing (Basar-Eroglu et al, 1992; Deiber et al, 2007; Makeig et al, 2004 ;) and working memory operations (Jacobs et al, 2006).

Deiber et al, (2007) found that the frontal theta activity had larger amplitudes when the task required focused attention such as detection task, 1-back and 2-back tasks compared to passive viewing. Meditation is considered a technique of training attentional networks of the brain. The evidence comes from the studies that show improvements in allocation of attention and executive control due to mental training (Brefczynski-Lewis et al, 2007; Jha, Krompinger & Bailey 2007; Slagter et al, 2007; Tang et al, 2007). This is consistent with the presumed association between theta activity and attentional processes (Basar-Eroglu et al, 1992; Deiber et al, 2007; Makeig et al, 2004). Long-term training of meditation has resulted in positive changes in behavior and changes in brain activity (Aftanas&Golocheikine2001; 2002; Srinivasan&Baijal2007). These changes include increase in theta activity especially in the frontal areas (Aftanas & Golocheikine 2001; 2002; Hebert & Lehmann 1977).

**Emotional Intelligence**

Emotional Intelligence has been conceptualized as a multidimensional construct as proposed by Goleman (1995, 1998) and Mayor and Salovey (1993, 1995). According to this conceptualization, emotional intelligence consists of “abilities such as being able to motivate one and persist in the face of frustration; to control impulses and delay gratification; to regulate one’s moods and keep distress from swamping the ability to think; to empathize and to hope”.

Cooper and Sawaf (1997) viewed emotional intelligence as the ability to sense, understand, and effectively apply the power and acumen of emotions as a source of human energy, information, connection and influence. According to Gottman (1997) the concept of
emotional intelligence involves four things. First, we must know our emotions and how to manage them. That includes the ability to control impulses, delay gratification, and cope with life’s ups and downs. Second, we must be able to recognize emotions in others, respond empathically to them, read their social cues. Third, we must be able to motivate ourselves in an optimistic fashion and be confident of our feelings, our accomplishments, and our abilities as we go through the world. Goleman (1995) asserts that “There is intelligence in the emotions and the sense in which intelligence can be brought to emotions…. Emotional intelligence is master aptitude towards all aspects of life, either facilitating or interfering with them”.

Mayor, Salovey, Caruso & Sitarenios (2000), defined emotional intelligence as, “an ability to recognize the meaning of emotions and their relationships and to reason and to solve problem on the basis of them. According to Baron (1997), Emotional Intelligence is “an array of non-cognitive capabilities, competencies and skills that influence one’s ability to succeed in coping with environmental demands and pressures.” Healing Prayer significantly affects the self-esteem and emotional stability of children. (Thakkar, 2006).

**Psychological Wellbeing**

Psychological wellbeing refers to how people evaluate their lives. These evaluations may be in the form of cognition or in the form of affect. In the words of Aristotle, “both the general run of man and people of superior refinement say that the highest of all goods achievable by action is happiness (eudaimonia) …but with regard to what happiness is they differ, and the many do not give the same account as the wise.” (McKeon, 1947) Although Ross follows the usual practice here of translating the term eudaimonia as “happiness”, he points out elsewhere (Ross, 1949) that is better translated by the more neutral term “well-being” because Aristotle was
interested in more than the pleasurable feelings that are usually associated with the term “happiness”

Wellbeing involves subjective satisfaction and individual’s pleasure depending upon psychological status of the individual and his environmental conditions. Wellbeing may be defined as a subjective, positive emotional state with general life satisfaction. (Diener, 1984) It involves the way the individual feels about himself or herself due to achievement of goals in life. Therefore the most common and comprehensive indicator of the sense of wellbeing includes life satisfaction which refers to an individual’s own global judgment of his or her quality of life, feeling of contentment and happiness. Various domains of the feelings of satisfaction are recreation, love, marriage, money, friendship and so forth. Life satisfaction denotes personal appreciation of life. This kind of wellbeing is substantially subjective.

The sense of ‘enjoyment of life’ (commonly referred as satisfaction, happiness and joy) or subjective appreciation of life is also conceptualized as an indicator of wellbeing (Veenhoven, 2004). Diener, (1984) reported that happy people tend to have high self-esteem, a satisfying love relationship, a meaningful religious faith and sufficient social activities. Happy people may have greater self-confidence, sociability or better social relationships and other characteristics of those high in well-being. According to Lama (2000) the very purpose of life is to seek happiness. Happiness is determined more by one’s state of mind than by external events. Success, material pleasures, recognition, may result in a temporary feeling of elation but one return to his baseline.

Psychological wellbeing is therefore represented by the level to which people show sentiments and positive attitude towards various aspects of their lives. Psychological indicators of wellbeing may be as diverse as mental health; self-concept; feeling of satisfaction and
happiness. In recent time, ‘subjective wellbeing is used as psychological term for happiness. The
term subjective wellbeing refers to people’s evaluation of their lives including cognitive
judgments such as life satisfaction and affective evaluation (mood and emotion) such as positive
and negative emotional feelings. In other words, people perceive many pleasant things, engage in
interesting activities and are satisfied with their lives in general that contribute to happiness.
Positive affect is commonly divided into joy, pride, affection, ecstasy whereas negative affect is
separated into guilt, anger, depression, stress etc. Life satisfaction is categorized by satisfaction
with current life, satisfaction with past, satisfaction with future, significant other’s views of one’s
life and desire to change one’s life. People are said to have high subjective wellbeing if they are
satisfied with their life conditions, experience frequent positive emotions and frequent negative
emotions.

Wellbeing or wellness is often referred to as ‘wholeness of body, mind and spirit in
terms of health, prosperity and self-actualization’ by Maslow (1968). Tatarkiewicz (1976) wrote,
“…..happiness requires total satisfaction that is satisfaction with life as a whole”

A feeling of satisfaction with life is an important factor for a general sense of wellbeing
(Neugarten, 1982) and has been emphasized in research related to subjective wellbeing. Life
satisfaction often refers to the attitudes that individuals have about their past, present as well as
future in relation to their psychological wellbeing (Chaddha & Van Willigen, 1995). Spirituality
is significantly averagely positively related with mental health and self-concept but highly with
self-concept than with mental health. (Upmanyu, Dwivedi, Khan, Gulati, & Bjawa et al., 2011)
Well-being is positively correlated with spiritual intelligence among senior citizens and young
adults, higher the spiritual intelligence of the individual higher the well-being of the person.
(Hingar, Mathur, & Sharma, 2011). Fry (2000) found that religion and spirituality relevant
variables, such as personal meaning, religious involvement, spiritual practices, and religious salience were significant predictors of well-being.

Effect of Meditation on EEG and GSR

Electroencephalographic (EEG) studies of meditative states have been conducted for almost 50 years, but no clear consensus about the underlying neurophysiological changes from meditation practice has emerged. Sensory evoked potential (EP) and cognitive event-related potential (ERP) assessments of meditative practice also reflect variegated results. Some reliable meditation-related EEG frequency effects for theta and alpha activity, as well as EEG coherence and ERP component changes, have been observed. Positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) studies are beginning to refine the neuroelectric data by suggesting possible neural loci for meditation effects, although how and where such practice may alter the central nervous system (CNS) have not yet been well characterized.

Meditation stabilizes the autonomous nervous system. During meditation, the brain’s activity alters significantly, as mapped by a device called an electroencephalograph (EEG). For example, Travis et al, (2002) have reported increases in power in alpha, beta, and gamma bands as well as increase in alpha and beta coherence during transcendental meditation. It is well known that the brain is an electrochemical organ; electrical activity emanating from the brain is displayed in the form of brainwaves. There are four categories of these brainwaves, ranging from the most activity to the least activity. When the brain is aroused and actively engaged in mental activities, it generates beta waves. These beta waves are of relatively low amplitude, and are the fastest of the four different brainwaves. The frequency of beta waves ranges from 15 to 40 cycles a second. The next brainwave category is alpha. Where beta represented arousal, alpha represents non-arousal. Alpha brainwaves are slower and higher in amplitude. Their frequency ranges from
9 to 14 cycles per second. A person who takes time out to reflect or meditate is usually in an alpha state. The next state, theta brainwaves, is typically of even greater amplitude and slower frequency. This frequency range is normally between 5 and 8 cycles a second. The final brainwave state is delta. Here the brainwaves are of the greatest amplitude and slowest frequency. They typically center around a range of 1.5 to 4 cycles per second. Daniel (2010), "In my experience with EEG Biofeedback many people are able to improve their reading skills and decrease their need for medication. Also, EEG biofeedback has helped to decrease impulsivity and aggressiveness. It is a powerful tool, in part, because the patient becomes part of the treatment process by taking more control over his own physiological processes." There is a significant beneficial effect of 15-18 Hz EEG normalization training on attentional deficits, on specific learning disabilities, on sleep disorders, on headache syndromes, and on certain adverse behaviors. (Othmer, Othmer, & Marks, 1991).

The Galvanic Skin Response (GSR) increases- During the practice of meditation, there is a strong increase in the electrical resistance of the skin, known as "Galvanic Skin Response", or GSR), due to decreased perspiration, which in turn results from a lessening of anxiety. The resistance increases in only a few minutes. Om chanting increased the level of EEG and GSR. (Shashi, 2011). Mental repetition of Om showed a significant decrease in skin resistance level. It also showed reduction in the heart rate and rate of breathing (Telles, Nagarathna & Nagendra, 1998).

**Neurophysiology of Meditative States**

Neuroelectric and imaging studies of meditation are reviewed by Cahn & Polich, 2006. Electroencephalographic measures indicate an overall slowing subsequent to meditation, with
theta and alpha activation related to proficiency of practice. Cognitive event-related potential evaluation of meditation implies that practice changes attentional allocation. Neuroimaging studies indicate increased regional cerebral blood flow measures during meditation. Taken together, meditation appears to reflect changes in anterior cingulate cortex and dorsolateral prefrontal areas. According to Cahn & Polich (2006), “An early theoretical model for understanding the neurophysiology of meditative states and traits used a continuum of autonomic arousal from parasympathetic (trophotropic) to sympathetic (ergotrophic) dominance (Fischer, 1971; Gellhorn & Kiely, 1972). Mystical experiences of consciousness can be considered related to ergotrophic states similar to those seen in psychiatric disturbance, ecstatic ritual, and hallucinogenic drug intoxication, but they also can be elicited through trophotropic meditative practice by means of a hypothetical rebound effect (Fischer, 1971). This framework has utility in reconciling the neurophysiological arousal of peak experiences in meditative states with the more commonly observed hypoarousal of meditative practice (J. M. Davidson, 1976). However, broad and encompassing statements about “the neurophysiology of meditation” are as yet unrealistic, because brain differences among meditative practices have not been well established (Dunn, Hartigan, & Mikulas, 1999; Lazar et al., 2003; Lehmann et al., 2001; Lou et al., 1999; Lutz, Greischar, Rawlings, Ricard, & Davidson, 2004). Some progress has been made to identify structure–function CNS relationships of meditative states and traits (Travis & Wallace, 1999); changes in arousal and attentional state involved in meditation are also related to hypnosis (Holroyd, 2003; Otani, 2003), drowsiness, sleep, and unconsciousness (Austin, 1998; Vaitl et al., 2005)”.
Effect of Meditation on States and Traits of Consciousness

Measurement of the brain response to meditative practice is based on the premise that different conscious states are accompanied by different neurophysiological states and on reports that meditation practice induces distinct states and traits of consciousness. *State* refers to the altered sensory, cognitive, and self-referential awareness that can arise during meditation practice, whereas *trait* refers to the lasting changes in these dimensions that persist in the meditator irrespective of being actively engaged in meditation (Austin, 1998; Shapiro & Walsh, 1984; West, 1987). Regular meditation practice can produce relatively short-term states as well as long-term changes in traits. State changes from the meditative and religious traditions are reported to include a deep sense of calm peacefulness, a cessation or slowing of the mind’s internal dialogue, and experiences of perceptual clarity and conscious awareness merging completely with the object of meditation, regardless of whether a mantra, image, or the whole of phenomenal experience is the focal point (D. P. Brown, 1977; Wallace, 1999; West, 1987). A common experience of many meditative practices is a metacognitive shift in the relationship between thoughts and feelings; they come to be observed as arising phenomena instead of occupying full attention (Wallace, 1999; West, 1987). Also possible are “peak experiences,” characterized by blissful absorption into the current moment (e.g., Samadhi, nirvana, oneness); different traditions use specific names to describe the resulting ineffable states (Forman, 1990; Goleman, 1996; Mahesh Yogi, 1963; Wilber, 1977) that are affected by the extent of practice (Travis et al., 2002; Wallace, 1999). Although such peak–mystical states spurred the evolution of different meditation traditions, the practice is centered on trait effects (Dalai Lama & Cutler, 1998; Goleman, 1996, 2003; Kwon, Hahm, & Rhi, 1996), because peak experiences can occur under circumstances unrelated to meditation (James, 1902/1985; Maslow, 1964). Trait changes
from long-term meditation include a deepened sense of calmness, increased sense of comfort, heightened awareness of the sensory field, and a shift in the relationship to thoughts, feelings, and experience of self. States of awareness sometimes referred to as “the witness” or “transcendental experience” are also claimed to ensue over time. This experience consists of contentless awareness that is independent of mental activities, can be present during deep sleep, and produces the perception of an altered self-identity wherein the separation perceived between the observer and the observed grows ever fainter (Austin, 2000; Forman, 1990; Travis et al., 2002; West, 1987). There is need to define the underlying neurophysiological correlates of conscious states and internal experience (Delacour, 1997; Gallagher, 1997; Jack & Roepstorff, 2002; Jack & Shallice, 2001; Lutz, Lachaux, Martinerie, & Varela, 2002; McIntosh, Fitzpatrick, & Friston, 2001; Varela, 1996). The goal is to use first-person reports to correlate internal experience with brain activity to guide neuroimaging analysis. For example, studies of TM states have begun to incorporate protocol methodology that marks the neurophysiological data with repeated reports from meditative participants to inform the neurophenomenological correlation (Mason et al., 1997; Travis, 2001; Travis & Pearson, 1999; Travis & Wallace, 1997); similar efforts are used for neuroimaging of hypnosis states (Rainville & Price, 2003). However, neurophysiological studies of the altered self-experience from meditative practice are largely absent because of the difficulty in quantifying self-experience. Psychometric state and trait measures have been constructed (Dittrich, 1998; Friedman, 1983; Friedman & MacDonald, 1997; Vaitl et al., 2005), and some studies have begun use this approach to amplify meditation CNS findings (Lehmann et al., 2001; Travis et al., 2002, 2004). The present investigation has tried to develop a scale of psychological wellbeing to measure the effect on this important trait. Therefore the investigator formulated the following problem:
PROBLEM:

Is there any effect of prayer and meditation (Om Chanting) on electroencephalogram, galvanic skin response, attention regulation, emotional intelligence and psychological wellbeing of university students?

OBJECTIVES:

(A) To study the effect of prayer and meditation on EEG, GSR, attention regulation, emotional intelligence and psychological well-being.

(B) To study the effect of meditation on EEG, GSR, attention regulation, emotional intelligence and psychological well-being.

METHOD:

HYPOTHESES:

1. There is a significant positive effect of prayer and meditation (Om Chanting) on EEG.
2. There is a significant positive effect of prayer and meditation (Om Chanting) on GSR.
3. There is a significant positive effect of prayer and meditation (Om Chanting) on attention regulation.
4. There is a significant positive effect of prayer and meditation (Om Chanting) on emotional intelligence.
5. There is a significant positive effect of prayer and meditation (Om Chanting) on psychological wellbeing.
6. There is a significant positive effect of meditation (Om Chanting) on EEG.
7. There is a significant positive effect of meditation (Om Chanting) on GSR.
8. There is a significant positive effect of meditation (Om Chanting) on attention regulation.
9. There is a significant positive effect of meditation (Om chanting) on emotional intelligence.
10. There is a significant positive effect of meditation (Om Chanting) on psychological wellbeing.

OPERATIONAL DEFINITIONS OF THE TERMS:

EEG: Electroencephalography (EEG) is the recording of electrical activity along the scalp. The brain generates rhythmical potentials which originate in the individual neurons of the brain. These potentials get summated as millions of cell discharge synchronously and appear as a surface waveform, the recording of which is known as the electroencephalogram. In clinical contexts, EEG refers to the recording of the brain's spontaneous electrical activity over a short period of time, usually 20–40 minutes, as recorded from multiple electrodes placed on the scalp. The EEG reveals not what is thought, but shows the context in which thinking occurs—state of arousal, state of vigilance and alertness, etc. A predominant feature of the EEG is rhythmic activity, or periodicity. Recent findings in the neurosciences indicate that this may be the means by which the brain maintains continuity of state, and even working memory.

GSR: A transient change in certain electrical properties of the skin associated with the sweat gland activity and elicited by any stimulus that evokes an arousal or orienting response, known as the galvanic skin response (GSR). GSR varies with its moisture level. So skin conductance is used as an indication of psychological or physiological arousal. The galvanic skin response (GSR) feedback instrument measures skin conductivity from the fingers and / or palms. The GSR is highly sensitive to emotions in some people. GSR reflects sweat gland activity and changes in the sympathetic nervous system. The activity of the sweat glands in response to sympathetic nervous stimulation (Increased sympathetic activation) results in an increase in the level of conductance. There is a relationship between sympathetic activity and emotional arousal, although one cannot identify the specific emotion being elicited.
**Prayer:** The word prayer or *prarthana* (in Sanskrit) is derived from two words ‘*pra*’ and ‘*artha*’ meaning pleading fervently. In other words, it is asking God for something with intense yearning. Prayer includes respect, love, pleading and faith. Through a prayer a devotee expresses his helplessness and endows the doership of the task to God. Giving the doership to God means that we acknowledge that God is helping us and getting the task done. Prayer is an important tool of spiritual practice in the generic spiritual path of Devotion.

**Meditation:** Meditation is a mental exercise in which we direct our mind to think inwardly by shutting our sense organs to external stimulations. It is a Vedic exercise which can be used as a powerful instrument to restrain sense organs, control autonomic nervous system and also to attain super consciousness.

**Attention Regulation:** It refers to the control and regulation of mental processes mainly the regulation of processes in the working memory system; which is a system of temporary storage and processing of information. The use of working memory is required in a wide range of tasks including, counting, reading and arithmetic etc.

**Emotional Intelligence:** The concept of Emotional Intelligence is defined as awareness of emotion in self and others. Emotional intelligence (EI) refers to the ability to perceive, control and evaluate emotions. Salovey & Mayer (1990) In their influential article "Emotional Intelligence," they defined emotional intelligence as, "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions". Steve Hein (2007), “Emotional intelligence is the innate potential to feel, use, communicate, recognize, remember, describe, identify, learn from, manage, understand and explain emotions.”
**Psychological Well-Being:** Psychological wellbeing refers to how people evaluate their lives. These evaluations may be in the form of cognition or in the form of affect. The cognitive part, an information-based appraisal of one’s life, is when a person gives conscious evaluative judgments about one’s satisfaction with life as a whole. The affective part is a hedonic evaluation guided by emotions and feelings such as the frequency with which people experience pleasant/unpleasant moods in reaction to their lives. Shin and Johnson, (1978) define life satisfaction as “a global assessment of a person’s quality of life according to his chosen criteria.”

**JUSTIFICATION OF THE PROBLEM:**

In present time human life has become extremely stressful. There is cut-throat competition in all the fields such as Education, Business, and Sports etc. Performance of students depends upon a number of factors such as availability of good environment for study, reading material, physical strength etc. Besides these factors psychological factors play an important role in determining the performance of students. Among the psychological factors motivation, pre-competitive stress, means of control of attention and concentration play an important role.

Through prayer and meditation a person is expected to get mental peace and this mental peace affects their emotional intelligence, attention regulation and psychological wellbeing. So here in this study the researcher would examine the effect of prayer and meditation (Om Chanting) on EEG, GSR, attention regulation, emotional intelligence and psychological wellbeing of university going students. Meditation (Om Chanting), which is a concentrative type of meditation that involves focusing of attention on breath and internal or external chanting (or mantra). Researcher is interested in investigating the effect of prayer and meditation (Om
Chanting) on EEG, GSR, attention regulation, emotional intelligence and psychological well-being under scientifically controlled conditions.

**VARIABLES:** The variables for the study have been categorized as follow:

**INDEPENDENT VARIABLE:** Prayer and Meditation

**DEPENDENT VARIABLE:** Electroencephalogram (EEG), Galvanic Skin Response (GSR), Attention regulation, Emotional Intelligence, Psychological wellbeing.

**RELEVANT VARIABLES:**

Age: 18 to 22 years of age

Sex: Only female students will be taken

Marital Status: Unmarried students will be taken

Education: All case would be at least Intermediate pass

**INCLUSION CRITERIA:** Only those who are willing to participate in prayer and meditation would be included in the sample.

**DESIGN:** To study the effect of I.V. on D.V. Single group, pre-test post-test design will be used.

**PROCEDURE OF THE STUDY:**

Phase 1: Pre-test

Attention Regulation and Emotional Intelligence will be measured by using Attention Regulation Scale by Das (1994) and Emotional Intelligence Scale by Hyde, Pethe & Dhar (2001)
respectively. Psychological wellbeing will be measured by Life Satisfaction Scale constructed by the investigator herself for the purpose. Readings on Electroencephalogram (EEG) and Galvanic Skin Response (GSR) would be obtained before the Prayer and Meditation session starts, by a computerized polygraph (Physiopac PP-4) publish by Medicaid Systems, Chandigarh.

Phase 2: Experimental phase

The researcher will conduct Prayer and Meditation session for 30 minutes (15 min. for prayer and 15 min. for meditation), every morning for 1 month, excluding Sunday. The researcher will give these instructions:

“Fold your hands, close your eyes and think about your God. Now repeat with me this prayer. Prayer: God/ Malik…. I am really thankful from the bottom of my heart. I say thanks for this beautiful life and for everything, given by you. God please forgive me for my mistakes. Intentionally and unintentionally I have hurt many people, I am saying sorry to all of them. God give me strength to strive for my goal and give me patience that I can forgive those who are bad to me.”

Meditation: “First, enter your meditative state by securing a quiet, dimly lit comfortable sitting position. Background meditative music will help facilitate migration into deeper brain centers. Eyes can be open or shut. Breathe comfortably and slowly through your nose, into your belly and then into your chest. Feel that positive energy is running into all over body and each part of your body is pure and holy. Slowly let the air exhale through your mouth. You chant the mantra, "OM" Visualize a situation when you were very happy and feel that happiness. Now feel the positive energy and enjoy in this positive environment”.
Phase 3: Post-test

EEG, GSR, Attention regulation, Emotional Intelligence and Psychological Wellbeing will be measured again.

Phase 4: Analysis and conclusion

Results of the pre-test and post-test will be analyzed and compared by using $t$ test in order to draw the final conclusion.

SAMPLE: 60 female participants for meditation and 60 female participants for prayer and meditation both will be used in this study. A purposive sample would be selected. The age group of the sample would be 18 to 24, gender would be female and minimum education would be graduation.

TOOLS: To study the variables in the study test of Attention Regulation, Emotional Intelligence Scale and Life Satisfaction scale will be used. For measuring EEG and GSR a computerized polygraph (Physiopac PP 4) will be used.

Test of Attention regulation: Attention regulation test is constructed by Das (1994). These are:

a) Forward- Backward Counting Test
b) Syllable Counting Test
c) Digit Span Test

a) Forward- Backward Counting Test: Forward- Backward Counting Test is a test for the flexibility of attention. The test requires the alteration of forward and backward counting. Each item of the test consists of pattern of number with plus and minus signs
between which indicate the counting direction. The subjects will be asked to write the final digit after completing the counting for each item. This test has 20 items. The subjects will not be allowed doing any rough work on paper. They have to do the counting in mind. A score of 0 for wrong item and a score of 1 for correct item will be given, max. score = 20, min. score = 0.

b) **Syllable Counting Test:** The syllabus counting test is a working memory task which requires the simultaneous storage and processing of information. Pair of words will be presented orally before the subject. After the presentation of one pair of words the number of syllables of the first and the second word collectively have to be counted and the subject has to note the resulting score on an answer sheet. For each pair of word the number of syllables should be correctly determined by the subject in order to pass the item. The pairs of words are presented in blocks of 6 and there are six such blocks. So the test contains a total of 36 pairs and has a maximum score of 36. Studies of Baddeley & Hitch (1980), Carr & Levy (1990) suggest that working memory is critically involved in attention regulation.

c) **Digit span test:** Forward and backward digit span test is taken from Wechsler’s Adult Intelligence Scale (1986). The Digit span test (forward and backward combined) load on freedom from distract ability factor. The digits are presented before each of the student with a one second inter-digit interval. The forward and backward digit spans will be added to make a total score.

**Psychological Wellbeing Scale:** Psychological Wellbeing will be measured by Psychological Wellbeing Scale, constructed by the investigator herself. Five more items were added to it from life satisfactions scale of Diener et al (1985). The scale’s coefficient alpha was 0.85. In a study
made by Das & Das (2008) on 35 women, respondents were asked a question ‘what they would like to become if they had to take birth again’. The majority of the respondents with high life satisfaction replied they “would like to be what they are today” i.e. ‘my own self’. This indicates high validity of the scale. In a pilot study done by the investigator herself on 40 female university students, high test retest reliability was found.

**Emotional Intelligence Scale:** Emotional Intelligence will be measured by Emotional Intelligence Scale constructed by Hyde, Pethe and Dhar (2001).

Description of the test: The final form of the scale consists of 34 items. This scale measures Self-awareness, Empathy, Self-motivation, Emotional Stability, Managing Relations, Integrity, Self-development, Value Orientation, Commitment, Altruistic Behavioral factors of emotional intelligence.

Reliability of the test: The reliability of the scale was determined by calculating split-half reliability coefficient on a sample of 200 subjects which was found to be 0.88.

Validity of the test: This scale has high content validity. The manual indicates high validity index of 0.93.

Norms of the test: Norms of the scale are available on a sample of 200 subjects.

**STATISTICAL TECHNIQUE:** \( t \) test will be used to compare the effect on dependent variable scores and to test the hypotheses.
References


• Das, I. (1994). “Student’s Behaviour at home, Achievement motivation and Attention as Predictors of Achievement in Primary School” Unpublished UGC Minor research project report, Department of Psychology, Dayalbagh Educational Institute, Agra.


• Das, I. (1994). “Student’s Behaviour at home, Achievement motivation and Attention as Predictors of Achievement in Primary School” Unpublished UGC Minor research project report, Department of Psychology, Dayalbagh Educational Institute, Agra.


