Psychology of Meditation and Health

***Sangeeta Trama **Sonam Dullat**

ABSTRACT :

Past four decades has witnessed substantial scientific research on meditation as an alternative mind-body therapy. This paper is an attempt to provide a comprehensive view of the present state of the research in meditation and health. It reviews major findings related to meditation and its effects on various disorders. Two major types of meditation practices dominating presently (concentration and mindfulness) are introduced. Effects of meditation on human physiology such as heart beat, blood pressure, cortical activity, metabolism, respiration, and skin resistance are discussed. Impact of meditation on human perception and cognition is also addressed. Possible pathways or mechanisms through which meditation impacts health such as, relaxation, systematic desensitization, release of repressed memories, un-stressing and so on are also discussed. Finally, major conceptual and methodological issues that need serious attention from researchers in this area for future research is addressed.

Key words: Meditation, health, concentration, mindfulness.

INTRODUCTION

The use of meditation for healing and enlightenment is not new. The practice of meditation has been prevailing throughout the human history among diverse cultures. In fact, all religious traditions practice some forms of meditation. It is generally associated with healing, spiritual growth, and enlightenment. After its introduction to the western world by Indian spiritualist Paramahansa Yogananda in 1920, the nature of scientific investigation of spiritual beliefs and practices underwent a drastic change. However, it was only during the 1960s that scientific studies started focusing on the clinical effects of meditation on health after the reports of extraordinary feats of bodily control and altered states of consciousness by eastern yogis reached the west. A formal acknowledgement of the academic curiosity within psychology came in 1977, when the American Psychological Association issued a statement on meditation stating that-"meditation may facilitate the psychotherapeutic process." They also encouraged research "to evaluate its possible usefulness" (Kutz, Borysenko & Benson, 1985). As a result,

both health care professionals and people embraced meditation as a valuable tool for stress reduction and a device for healing both mental and physical disorders.

The word "meditation" is derived from the Latin meditari, which means to engage in contemplation or reflection. The word meditation comes from the same Greek and Latin root as the word medicine. Manocha (2000) described meditation as a discrete and well-defined experience of a state of "thoughtless awareness" or mental silence, in which the activity of the mind is minimized without reducing the level of alertness. Walsh and Shapiro (2006) defined meditation from cognitive and psychological perspective, as a family of self-regulation practices that aim to bring mental processes under voluntary control through focusing attention and awareness. Other major descriptions of meditation emphasize components such as relaxation, concentration, an altered state of awareness, suspension of logical thought processes, and maintenance of self-observing attitude (Craven, 1989).Thus, meditation has been conceptualized in many ways and there exists no consensus definition. It is very difficult to capture its essence in one definition.

TYPES OF MEDITATION

Presently many meditation techniques are being practiced. However, all of them can be grouped into two basic approaches- concentrative meditations and mindfulness/ insight meditations. Concentration meditation aims at single pointed focus on some sound, image or sensation to still the mind and achieve greater awareness. Most popular form of this meditation is "transcendental meditation"(TM) developed by Maharshi Mahesh Yogi in 1958. TM is generally done by focusing the mind on some mantra (sound) to achieve transcendental state of consciousness. Mindfulness meditation on the other hand involves opening up or becoming more alert to the continuous passing stream of thoughts, images, emotions and sensations without identifying oneself with them. Such practice helps in developing non-reactive state of mind, which is the foundation for calm and peaceful state of consciousness. Here instead of narrowing the focus (concentration) practitioner becomes alert to the entire field of consciousness. Vipassana and Zen meditations belong to this category.

EFFECTS OF MEDITATION: PHYSIOLOGICAL

Even though meditation is a mental activity, its effects on human physiology has received much attention. Few Indian studies have attempted to examine and establish the neurological correlates of yogic practices, including meditation;

(Ramamurthi, 1977; Varma, 1979) the development of brain imaging technique has thrown the ball in the Western court. Some of the physiological effects are follows:

Heart rate

Studies have indicated that heart rate slows down during quite meditation and quickens in the moments of ecstasy during meditation (Tamini, 1975). Meditations like TM, Zen, relaxation response and other calming forms of meditation generally decrease the rate of heart beat (Bono, 1984).

Blood pressure and hypertension

Blood pressure is one of the easiest measurable physiological variables. There is strong evidence that meditation lowers 'blood pressure for the people who are normal or moderate hypertensive (Sears & Raeburn, 1980; Swami Karmananda Saraswati, 1982).

Cortical activity

Evidence from many studies indicates that during meditation alpha activity increases significantly (Daniels & Fernhall, 1984). Alpha waves are slow and high amplitude brain waves with frequency ranging from eight to thirteen cycles per second. Alpha activity is generally indicator of deep relaxed state of mind. Long term meditation practitioners also exhibit theta brain wave activity (five to seven cycle per second) during which they report peaceful and pleasant experience with intact self awareness (Jacobs & Luber, 1989).

Metabolism and respiration

Many studies have shown that during meditation oxygen consumption is reduced (sometime up to 50%), carbon dioxide elimination is reduced (sometime up to 50%) and respiration rate is lessened (Sudsuang, Chentanez & Veluyan, 1991).

Skin resistance

Low skin resistance (measured in terms of .galvanic skin response) is a good indicator of stress. As expected high skin resistance has been documented by many researchers especially among TM practitioners (Bono, 1984; Bagga & Gandhi, 1983).

EFFECTS OF MEDITATION: PSYCHOLOGICAL

Many perceptual and cognitive abilities are associated with meditation practices. These abilities may range from normal to paranormal. Many scientific investigations have been conducted to measure various psychological and behavioral effects of meditation.

Perceptual ability

Brown, Forte, and Dysart (l984a, 1984b) conducted experiments on visual sensitivity among Buddhist meditation practitioners using before-after and control group design. Post test was conducted after three months of rigorous meditation practice. Visual sensitivity was measured by detection threshold and discrimination threshold using simple light flashes. They reported significant improvement in visual sensitivity after the meditation retreat. Other studies reported increased visual imagery abilities (Heil, 1983), enhanced attentive ability (Linden, 1973), reduction of perceptual noise (Walsh, 1978), increased reaction time (Robertson, 1983), and enhanced perceptual motor speed (Jedrczak, Toomey & Clements, 1986).

Memory and intelligence

Jedrczak et al. (1986) reported that number of months of TM practice predicted the higher performance on nonverbal intelligence test. Other researchers also reported similar results of improvements in cognitive abilities (Verma, Jayashan & Palani, 1982).Studies on TM practitioners generally reported to have positive impact on intelligence, school grades, learning ability, short and long term memory.

Creativity

Mixed results have been reported regarding creativity and meditation. TM researchers in particular reported enhanced creativity with TM practice (Ball, 1980; Orme-Johnson & Granieri, 1977). However, other researchers could not find any relationship between meditation and creativity (O'Haire & Marcia, 1980; Domino, 1977).

MECHANISMS FOR THE THERAPEUTIC EFFECTS OF MEDITATION

Helminiak (1981) described five possible mechanisms through which meditation works. They are:

(1) Relaxation: Relaxation is one of the primary components of all kinds of meditation which induce a pleasant and deep relaxed state of body and mind. Herbert Benson (1976) developed a therapeutic technique called "relaxation response" which is a form of meditation. His whole concern with meditation was to reduce stress and hypertension by inducing a state of deep relaxation.

(2) Systematic desensitization: Joseph Wolpe's (1961) behavioral therapy is especially instrumental in reducing anxiety. This therapy involves three steps. First, the client is thought to induce a deep state of muscle relaxation. This is followed by preparing a hierarchical list of stimuli inducing anxiety. Finally in a deep relaxed state client confronts (either by imagination or by presentation of actual stimuli) each of the anxiety producing stimuli progressing in hierarchy. This therapy is based on the principle of reciprocal inhibition. Since anxiety and relaxation are incompatible to each other, the stimuli loose their anxiety provoking quality. Client continues this process until he is desensitized to highest item in the hierarchy. In meditation also a practitioner undergoes similar steps: Every meditation involves induction of a relaxed state. In meditation, the practitioner first enters in deep relaxation and suspends conscious thoughts by either detached observation or concentration. As a result many anxiety provoking repressed memories, thoughts and feelings arise in the mind. When one confronts them in a deeply relaxed state, these factors loose their power to induce anxiety and finally get eliminated.

(3) Release of repressed psychic material: This is related to systematic desensitization. With regular practice of meditation, most of the practitioners encounter release of repressed unconscious thoughts, emotions, and images (Schwartz, 1974). This is very similar to the release of unconscious phenomenon during free association in psychoanalysis. This could be initially disturbing, but with constant practice unconscious mind gets cleaned of such memories and healthy mind is achieved.

(4) Unstressing: Parallel to release of repressed memories, many practitioner reports many physical reactions during intense meditation. This could be involuntary muscular skeletal movements such as repeated twitches, spasms, gasps, tingling, tics, jerking, swaying, pains, shaking, aches, internal pressures, headaches, weeping, and laughter. The experience covers the range from extreme pleasure to acute distress (Goleman, 1971).

(5) Dissolution of habitual patterns of perception: Human beings are mostly governed by rigid and fixed patterns of thinking, feeling, and reactions. Many of these patterns are unhealthy and cause neurotic and psychotic problems. Most of the unhealthy habitual patterns are due to our identification with emotions that we are not able to control and regulate. With detached observation, emotions and thoughts loose their power and practitioner is able to identify the unhealthy patterns of behavior and remove them with healthy ones.

MEDITATION AND HEALTH: REVIEW OF PRESENT STATUS

Effects of meditation on health are based on the principle of mind-body connection. Meditation practices are generally accepted as mind-body treatments for health related problems and overall well-being. There is a growing body of literature showing the efficacy of meditation on various health related problems. Meditation is reported to be effective in pain management and enhancing immune system (Kabat-Zinn, 1990). Studies on the long-term mental benefits of meditation show that meditation reduces stress and increases reported levels of happiness, self-confidence and general effectiveness (Fergusson, Bonshek & Boudigues, 1995; Hawks, Hull & Thalman, 1995). Meditative interventions have been found to be beneficial in treating various clinical conditions. These include- hypertension (Barnes et al, 1997); cardiovascular disorders (King, Carr & D'Cruz, 2002); pain syndromes and musculoskeletal diseases (Astin, 2004); respiratory disorders such as asthma, congestive obstructive pulmonary disease (Wang, Collet, & Lau, 2004); dermatological problems such as psoriasis, allergies (Bilkis & Mark, 1998); immunological disorders (Astin et al, 2003) and treatment-related symptoms of breast and prostate cancer (Coker, 1999). Several Indian researchers have also made significant contribution. Their study range from anxiety (Jangid, Vyas & Shukla, 1988; Sharma & Agnihotri, 1982), psychosomatic disorders (Divekar, 1982), neurotic disorders (Naug, 1975; Nagarathna & Nagendra, 1980) and stress (Sethi, Trivedi & Anand, 1981).

MAJOR ISSUES AND FUTURE DIRECTIONS

Researchers have been talking consistently about the benefits of meditation but one should be open to the possibility of negative impact of meditation also. Meditation is an important tool for the release of repressed emotional contents and this could be very disturbing to initial practitioners. Encountering such disturbing emotional contents could have adverse impact on the health of the practitioner, unless proper guidance is provided. For example, Walsh (I979) reported a number of disturbing experiences, encountered during meditation, such as anxiety, tension, and anger. Researchers also posited that meditation may precipitate a psychotic episode in individuals with a history of schizophrenia (Walsh & Rauche, 1979). So, there is possibility for researcher's biasness, especially when one has preconceived notions of benefits of meditation.

Meditation is not only a technique, but also an art. Some people are predisposed towards it while others are not. Some can delve deep into the meditation and acquire all benefits while others may come out more disturbed.

Such individual differences should also be considered while making any conclusion regarding the benefits of meditation. It appears that meditation may have therapeutic value, but limited to those who are psychologically healthy, well integrated and may have mild neurosis or psychosomatic disorders. These issues need serious attention from researchers in future to get firm conclusion regarding the efficacy of meditation as an adjunct to mind-body therapy.

REFERENCES

Astin, J.A. (2004). Mind-body therapies for the management of pain. Clinical Journal of Pain, 20, 27 -32.

Astin, J. A., Shapiro, S. L., & Eisenberg, O. M.. (2003). Mind -body medicine: State of the science, implications for practice. Journal of the American Board of Family Medicine, 16, 131-47.

Bagga, O.P., & Gandhi, A. (1983). A comparative study of the effect of transcendental meditation and shavasana practice on the cardiovascular system. Indian Heart Journal, 35, 39-45.

Ball, O.E. (1980). The effect of TM and the TM-Sidhi program on verbal and figural creativity (TTCT). Auditory creativity (S and I), and hemispheric dominance (SOLAT). Unpublished doctoral dissertation, University of Georgia.

Barnes, V.A., Schneider, R.H., & Alexander, C.N. (1997). Stress, stress reduction, and hypertension in African Americans: An updated review. Journal of National Medical Association, 89, 464-476.

Benson, H. (1976). The relaxation response. New York: William Morrow & Co, Inc.

Bilkis, M.R., & Mark, K.A. (1998). Mind-body medicine. Practical applications in dermatology. Archives of Dermatology, 134,1437-1441.

Bono, J. (1984). Psychological assessment of transcendental meditation. In meditation: Classic and contemporary perspectives. In D.H. Shapiro & R.N. Walsh (Eds.). New York: Aldine.

Brown, D., Forte, M., & Dysart, M. (l984a). Differences in visual sensitivity among mindfulness meditators and non-meditators. Perceptual and Motor Skills, 58, 727-733.

Brown, D., Forte, M., & Dysart, M. (1984b). Visual sensitivity and mindfulness meditation. Perceptual and Motor Skills, 58, 775-784.

Coker, K.H. (1999). Meditation and prostate cancer: Integrating a mind body intervention with traditional therapies. Seminars in Urologic Oncology, 17, 111-118.

Craven, J.L. (1989). Meditation and psychotherapy. Canadian Journal of Psychiatry, 34, 648-53.

Daniels, F.S., & Emhall, B. (1984). Continuous EEG measurement to determine the onset of a relaxation response during a prolonged run. Medicine and Science in Sports and Exercise, 16, 182.

Divekar, M.V. (1982). Yoga therapy for diabetes and obesity. Yoga, 20, 19-29.

Domino, G. (1977). Transcendental meditation and creativity: An empirical investigation. Journal of Applied Psychology, 62, 358-362 .

Fergusson, L., Bonshek, A., & Boudigues, J. (1995). Personality and health characteristics of Cambodian undergraduates. Journal of Instructional Psychology, 22, 308-319.

Goleman, D. (1971). Meditation as meta-therapy: Hypothesis toward a proposed fifth state of consciousness. Journal of Transpersonal Psychology, 3, 10.

Hawks S, Hull M, & Thalman, R. (1995). Review of spiritual health. American Journal of Health Promotion, 9, 371-378.

Thalman, R. (1995). Review of spiritual health. American Journal of Health Promotion, 9, 371-378.

Heil, J.O. (1983). Visual imagery change during relaxation meditation training. Dissertation Abstracts International, 43, 23-38.

Helminiak, O.A. (1981). Meditation-psychologically and theologically considered. Pastoral Psychology, 30, 6-20.

Ilan, K., Borysenko, J.Z., & Benson, H. (1985). Meditation and psychotherapy: A rationale for the integra tion of dynamic psychotherapy, the relaxation response, and mindfulness meditation. American Journal of Psychiatry, 142, 1-8.

Jacobs, G.O., & Luber, J.F. (1989). Spectral analysis of the central nervous system effects of the relaxation response elicited by autogenic training. Behavioral Medicine, 5, 125-132.

Jangid, R.K., Vyas, I.N., & Shukla, T.R. (1988). Effect of transcendental meditation in cases of anxiety neurosis. Indian Journal of Clinical Psychology, /5, 77-79.

Jedrczak, A., Toomey, M., & Clements, G. (1986). The TM -Sidhi program, age and brief tests of Perceptualmotor speed and nonverbal intelligence. Journal of Clinical Psychology, 42, 161-164.

Kabat-Zinn, J. (1990). Full catastrophe living. New York: Delta.

King, M.S., Carr, T., & D'Cruz, C. (2002). Transcendental meditation, hypertension and heart disease. Australian Family Physician, 3/, 164-168.

Linden, W. (1973). Practicing of meditation by school children and their levels of field dependence independence, test anxiety, and reading achievement. Journal of Consulting and Clinical Psychology, 41,139-143.

Manocha, R. (2000). Why meditation. Australian Family Physician, 29, 1135-1138.

Nagarathna, R., & Nagendra, H.R. (1980). Therapeutic application of yoga: A report. Kanyakumari: Vivekananda Kendra Yoga Therapy and Research Centre.

Naug, R.N. (1975). Yoga therapy in neurotic disorders. Indian Journal of Clinical Psychology, 2, 87-90.

O'Haire, T.O., & Marcia, J.E. (1980). Some personality characteristics associated with Ananda mega mediators: A pilot study of perceptual and motor skills, 51, 447-452

Orme-Johnson, O.W., & Granieri, B. (1977). The effects of the age of enlightenment governor training courses on field independence, creativity, intelligence, and behavioral flexibility. In D.W Orme-Johnson & J.T Farrow (Eds.), Scientific research on the transcendental meditation program: Collected Papers, Vol. 1, (pp. 713-718). New York: M.E.R.U. Press.

Ramamurthi, B. (1977). Yoga and neurology. Journal of Rehabilitation in Asia, 18, 16-17.

Robertson, O.W. (1983). The short and long range effects of the transcendental meditation technique on fractionated reaction time. Journal of Sports Medicine, 23, 113-120.

Schwartz, G.E. (1974). TM relaxes some people and makes them feel better. Psychology Today, 7, 39-44.

Seer, P., & Raeburn, J.M. (1980). Meditation training and essential hypertension: A methodological study. Journal of Behavioral Medicine, 3, 59-70.

Sethi, B.B., Trivedi, J.K., & Anand, R. (1981). A comparative study of the relative effectiveness of biofeedback and shavasana in tension headache. Indian Journal of Psychiatry, 23, 109-114.

Sharma, I., & Agnihotri, S.S. (1982). Preliminary observations on the effect of controlled breathing in anxiety states. Paper presented at National Symposium on Yoga, brain and consciousness, NIMHANS, Bangalore, India.

Sudsang, R., Chentanez., & Veluvan, K. (1991). Effect of buddhist meditation on serum cortisol and total protein levels, blood pressure, pulse rate, lung volume and reaction time. Physiology and Behavior, 50, 543-548.

Taimni, I.K. (1975). Patanjali's "Yoga Sutras," Book I, verses 2-4. In the science of yoga. Wheaton, IL: Theosophical Publishing House.

Varma, L.P. (l979). Yoga, meditation and mysticism. Indian Journal of Psychiatry, 21, 293-304.

Verma, I.C., Jayashan, B.C., & Palani, M. (1982). Effect of transcendental meditation on the performance of some cognitive psychological tests. International Journal of Medical Research, 7, 136-143.

Walsh, R.N. (1978). Initial meditative experience. Journal of Transpersonal Psychology, 10, 1-28.

Walsh, R.N. (1979). Meditation research: An introduction and review. Journal of Transpersonal Psychology, 11, 161-174.

Walsh, R.N., & Roche, L. (1979). Precipitation of acute psychotic episodes by intensive meditation in individuals with a history of schizophrenia. American Journal of Psychiatry, 136, 1085-1086.

Walsh, R., & Shapiro, S.L. (2006). The meeting of meditative disciplines and western psychology: A mutually enriching dialogue. American Psychologist, 61, 227-239.

Wang, C., Collet, J.P., & Lau, J (2004). The effect of tai chi on health outcomes in patients with chronic conditions: a systematic review. Archives of Internal Medicine, 164, 493-501.

Wolpe, J. (1961). The systematic desensitization treatment of neuroses. The Journal of Nervous and Mental Disease, 132, 189-203.

★★★★

Received = 19 July, 2012
Corrected = 12 August, 2012
Corrected = 1 August, 2012
Accepted = 24 August, 2012

* University, Patiala, Punjab-147001
**Dept of Psychology,, Punjabi University, Patiala, Punjab-147002