

A STUDY OF STRUCTURE OF PHENOMENOLOGY OF CONSCIOUSNESS IN MEDITATIVE AND NON-MEDITATIVE STATES

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Abstract: Twelve senior Kundalini (Chakra) meditators were assessed during meditation session and non-meditation or control session using Phenomenology of Consciousness Inventory. The data has been analyzed using structural analysis to measure the altered state of consciousness and the identity state by comparing meditative state with non-meditative state. The structural analysis of pattern of consciousness during the meditative state revealed altered experience in perception (percentile rank PR = 90), meaning (PR = 82) and time sense (PR = 87), while positive affect dimension showed increased joy (PR = 73) and love (PR = 67). The imagery vividness (PR = 72), self-awareness (PR = 77), rationality (PR = 73) and arousal (PR = 69) were found to be structurally different from the ordinary state. With regards to identity state meditative experience was found to produce statistically significant changes in terms of intensity in meaning ($P < 0.05$), time sense ($P < 0.05$), joy ($P < 0.05$), love ($P < 0.05$) and state of awareness ($P < 0.01$). Our results indicate that long term practice of meditation appears to produce structural as well as intensity changes in phenomenological experiences of consciousness.

Key words: meditation affect
consciousness structure awareness

INTRODUCTION

The beginnings of meditation are lost in antiquity, but can be traced back to at least 3000 years (1). Walsh (2) refers to meditation as "... a family of practices that train attention in order to heighten awareness and bring mental processes under greater control". Meditative practices were devised in ancient times to perhaps aid in realizing the

capability of highest possible functional harmony in body and mind (3). Meditation is also viewed as an exercise which involves the individual in turning attention or awareness to dwell upon a single object, sound, concept or experience (4). Brown (5) described meditation as awareness training which, when sustained over long periods, results in definable alterations in attention, perception and cognition.

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The earliest research interest in meditation centered on the psychophysiological changes that occurred during its practice (6-9). Subsequent studies on personality lead one to the conclusion that its practice is accompanied by decreases in neuroticism, depression, anxiety, ergic tension, irritability and perceived stressful life-events, and increases in internal self-control, inner directedness, self-actualization and happiness (10-14).

Most of the interest in this area has focused on psychophysiological self control through meditation and the therapeutic implications of such self control (15). Less attention has been given to meditation as an altered state of self-focussed attention. One of the reasons for the lack of phenomenological research may have been related to the expectation that neurophysiological methods, especially electroencephalography could be used to map the structure and organization of consciousness (16-17). However such an approach has not led to understanding of pure state of consciousness besides sleeping, dreaming and wakefulness. Indeed, it can be argued that meditation is quintessentially a state of self-focussed attention, for example in passive mantra meditation as a representative example, the individual in meditation closes his or her eyes, silently repeats a sound, and passively observes internal processes, including subjective physiological and psychological experiences (4). Hence the practice of meditation might lead to changes in the personality and ones own out-look to the external world.

The aim of the present study is to determine the nature and organization of phenomenology of consciousness in differing stimulus conditions, such as, eyes closed meditative state and eyes closed non-meditative state.

METHODS

Subjects:

A total of 12 senior practitioners of meditation were studied, of which 7 were foreign nationals. The volunteer meditators who participated in this study were selected by a teacher of the Kundalini Research Association International, New Delhi. They were experienced practitioners with more than five years of practice.

Description of meditation:

The technique of Kundalini (Charka) meditation consists of breathing exercises, visualization of chakras and passive attention to blue light experienced during the meditative state. The theoretical assumption is that the meditator seeks to unlock a reserve of latent spiritual energy, which is said to reside at the base of the spine. This spiritual force, once unleashed, travels upward through seven bodily centers called chakras, in which specific attitude, emotions, and mental states are located. The yogi attempts to move the kundalini force from the lower chakras- which embody negative emotions- to more enlightened, selfless positive emotions found in the chakras at the top of the head. The practice of kundalini for a long period of time is believed to result in opening of psychic channel called sushumna located in the central portion of the spinal cord through which the developed psychic power flows from below upwards to the brain by piercing six psychic points situated at various places of this channel (18). When a meditator activates these chakras, one experiences transcendental states (19). The actual duration of the meditation session is about 20 min, with 5 min each of eyes open, eyes closed states before and after the meditation.

The Questionnaire:

At the outset of their participation subjects were asked to give informed consent and then provided details for the Phenomenology of Consciousness Inventory (20) along with demographic data and personal history (Table I). The methodology of retrospective phenomenological assessment involves the completion of a paper and pencil self-report inventory in reference to an immediately preceding stimulus condition. The inventory was administered immediately after two sessions, meditative and non-meditative states. The inventory was composed of items that assess various aspects of dimensions of consciousness such as: Altered experience (altered body image, perception, meaning and time sense), Positive affect (joy, sexual excitement and love), Negative affect (anger, sadness and fear), Visual imagery (amount and vividness), Attention (direction and concentration), Self-awareness, Altered state of awareness, Internal dialogue, Rationality, Volitional control, Memory and Arousal.

TABLE I: Sample characteristics.

Age (Mean±SD)	35.25±8.81
Sex:	
Male (n)	9
Female (n)	3
Nationality: (n)	
India	5
Nepal	2
South America	3
North America	1
Europe	1
Duration of Practice in years (Mean±SD)	
	17.88±11.84
Education: (n)	
Undergraduation	3
Graduation	7
Postgraduation	2
Meditative technique: (n)	
Chakra visualization	12
Breathing awareness	5
Mantra chanting	2

RESULTS

The data has been analyzed in two ways. Firstly, by the measurement of altered states of consciousness using structural analysis and secondly, by the measurement of identity state by comparing meditative with non-meditative states. In the structural analysis percentile ranks of the dimensions were estimated and a rank of 65 has been considered as a cut-offpoint. The structural analysis of pattern of consciousness during the meditative state showed greater alterations in perceptual experience (percentile rank 90), meaning (PR 82), and time sense (PR 87). The positive affect dimension showed increased joy (PR 73) and love (PR 67), while imagery vividness (PR 72), self-awareness (PR 77), rationality (PR 73) and arousal (PR 69) were attenuated during the meditative state (Fig. 1).

Identity state analysis showed meditative experience was found to produce statistically significant changes in terms of intensity in

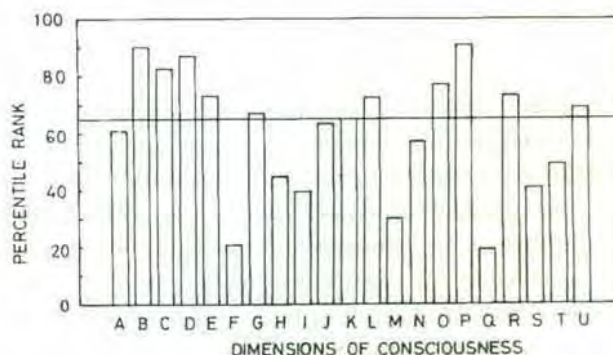


Fig. 1: Percentile scores of dimensions of consciousness during meditative state. (A) Body image, (B) Perception, (C) Meaning, (D) Time sense, (E) Joy, (F) Sexual excitement, (G) Love, (H) Anger, (I) Sadness, (J) Fear, (K) Imagery amount, (L) Imagery vividness, (M) Direction, (N) Concentration, (O) Self awareness, (P) State of awareness, (Q) Internal dialogue, (R) Rationality, (S) Volitional control, (T) Memory, and (U) Arousal.

meaning ($P < 0.05$), time sense ($P < 0.05$), joy ($P < 0.05$), love ($P < 0.05$) and state of awareness ($P < 0.01$) when compared to the non-meditative state (Fig. 2).

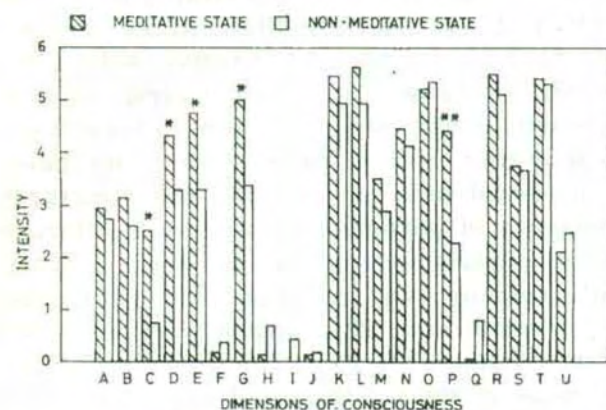


Fig. 2: Intensity differences of dimensions of consciousness during meditative and non-meditative state. (A) Body image, (B) Perception, (C) Meaning, (D) Time sense, (E) Joy, (F) Sexual excitement, (G) Love, (H) anger, (I) Sadness, (J) Fear, (K) Imagery amount, (L) Imagery vividness, (M) Direction, (N) Concentration, (O) Self awareness, (P) State of awareness, (Q) Internal dialogue, (R) Rationality, (S) Volitional control, (T) Memory, and (U) Arousal. * $P < 0.05$, ** $P < 0.01$.

DISCUSSION

The results indicated considerable alterations in consciousness during the meditative state. An earlier study (21) on phenomenological experiences reported that the eye closure in comparison to eyes open, was associated with significant alterations in time sense, profound and unusual meanings, state of awareness, imagery, inward and absorbed attention. Thus it is speculated that eye closure may be important due to its ability to augment alterations in phenomenological experiences. Present study also revealed significant alterations in perceptual experience, self-awareness and arousal which are in concordance with the earlier report.

The practice of meditation according to Buss is (22), a practice designed to increase private self-consciousness. Those individuals who regularly practice meditation may possibly increase the time they spend in private self-consciousness. In the present study we found increased meaning, state of awareness, time sense, and self-awareness which appear to be unique to the private self-consciousness generated by meditative state.

In terms of attentional and information processing perspective, it can be speculated that eyes closed meditation possibly produces those subjective experiences which are characterized by a sense of unity, clarity and richness, reflecting the extra layers of representation and meaning acquired by virtue of extended processing focused on a single topic (mantra or chakra) (23).

Our results also indicate altered perception and meaning during the meditative state. In addition, transformation of the information is likely to be on a 'time sharing' basis, processes rapidly oscillate between a number of diversified data streams, rather than remaining dedicated to the processing of a single coherent stream (23). It may be true in chakra meditation though practitioners focus attention on chakra, at the last state they diffuse their attention and effortlessly observe the blue light. It appears that this kind of mechanism is probably producing increased time sense and arousability, wherein individual seems to experience altered perception, positive affect, imagery and self-awareness and at the same time feeling a sense of rapid time flow. Subjects also reported increased awareness in a (subjective) short period of time where time flow appeared faster.

With regard to intensity of structured pattern of consciousness, perception of being in an altered state of consciousness is more in meditative state. Nine sub-dimensions

i.e., perception, meaning, time sense, joy, love, imagery vividness, self-awareness, rationality, and arousal were found to be attenuated by perception of being in an altered state of consciousness.

An identity state of consciousness on the other hand, which is perceived by meditators as distinct from non-meditative ordinary consciousness was found to produce statistically significant changes in meaning, time sense, joy, love and state of awareness. These sub-dimensions appear to be characteristic structure of the chakra meditative state.

In conclusion, long term practice of

meditation appears to produce structural as well as intensity changes in phenomenological experiences of consciousness. The positive affect dimensions were found to be susceptible for any alterations due to meditative practice. The implications of these results need to be studied in the light of efficacy of meditative practices in the promotion of positive mental health.

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