Journal of Applied Information Science
Volume 5 Issue 2 2017
ISSN.: 2321-6115

Audio Visual EMG & GSR Biofeedback Analysis for Effect of Spiritual Techniques on Human Behaviour and Psychic Challenges

Rohit Rastogi[1], D. K. Chaturvedi[2], Sanket Sharma[3], Anmol Bansal[4], Abhinav Agrawal[5]
[1]Associate Professor, Dept. of Comp. Sc. and Engg., ABESEC, Ghaziabad and Research Scholar, Uttar Pradesh, India. Email: Email: rohit.rastogi@abes.ac.in
[2]Professor, Dept. of Electrical Engineering, DEI-Agra, Uttar Pradesh, India. Email: dkc.foe@gmail.com,
[3]Student, Dept. of Comp. Sc. and Engg., ABESEC, Ghaziabad,Uttar Pradesh, India. Email: sanket.15bcs2035@abes.ac.in
[4]Student, Dept. of Comp. Sc. and Engg., ABESEC, Ghaziabad,Uttar Pradesh, India. Email: anmol.15bcs1068@abes.ac.in
[5]Student, Dept. of Comp. Sc. and Engg., ABESEC, Ghaziabad, Uttar Pradesh, India. Email: anmol.15bcs1076@abes.ac.in

Abstract: It is amazing that today's man, despite knowing so much about the world around him, knows so little about his own self. The more one tries to know subtle world, the more enigmatic and mysterious it becomes, the reach of human mind is indeed infinite but the mental complexities generated thereby have not only hindered and hampered the elevation of personality, but also have shaken and cracked its inner structure and stability. In professional youths between the age group of 20-24 years lots of psychological imbalances arise due to emotional immaturity and lack of knowledge of inner self. Spirituality with mindful meditation along with positive attitude is the only way through which one can get well soon from all types of problems by following some discipline.
"Mental health connotates those behaviors, perceptions and feelings that determines a person's overall level of personal effectiveness, success, happiness and excellence of functioning as a person." Thus the present study shows that mindful meditation practices help to reduce the stress level in daily life.

Keywords: EEG, Mental Health, Meditation Stress, Spirituality, Spirituality

I. Importance of Mental Health, Stress and Emotional Needs and Significance of Study

Individuals experience the fundamental need to experience autonomy to feel competent and development relationships. When all of these needs are fulfilled, individuals experience improvements in well-being and satisfaction. They also become more resilient rather than sensitive problems. However, many common trends, such as the inclination to conceal personal problems or work extensive hours can impede the likelihood that such needs are fulfilled.

As all of us know, among the 4 main stages of human development i.e. Infancy, Childhood, Adolescence and Adulthood. Adolescence is the most transitory state and is the most important phase of life for every individual. It is the intermediate period between childhood and adulthood.

Mental health is not just the absence of mental illness. It is defined as the state of wellbeing in which every individual realizes his/her own potentials, can cope with normal stresses of life, can work productively and fruitfully and is able to make a contribution to his/her community.

People with good mental health feel comfortable about themselves. They are not bowled with their own emotions by their fear, anger, love, jealousy, guilt and worries. They have a tolerant easygoing attitude towards themselves and others. They solve their problems and are not disturbed by them. They try to shape the environment accordingly. They accept the challenges and make use of their capabilities. They set realistic goals for themselves and make their own decisions. They put their own efforts into what they do and get satisfaction out of doing it. "So, we selected to this work to observe the impact of affirmative ideas on mood states of personality for mental health (Anxiety, Stress, Depression, Aggression, Fatigue, Guilt, Extraversion and Arousal on the students and technocrats of institute. [DSVV and ABES Engineering College Ghaziabad].

II. Previous Studies (Literature Review)

Hurlock (1980) regarded adolescence as beginning when children become sexually mature and ending when they reach the age of legal maturity. According to her, the early adolescence extends roughly from 13 to 16 or 17 years and late adolescence covers the period from then until 18, the age of legal maturity". Mc CarityCarolyna, *Zimmerman, Fredrick. 2005* examined associate between early emotional support provided by parents and child internalizing and externalizing

problems using a nationally representative longitudinal sample of 1361 children parental emotional support was assessed using the home observation for the measurement of the environment increasing both parent report and literview observation and found that controlling for child externalising problems at age 6 year.

Alison Garton, Robin Harvey & Cath Price (2004), The purpose of study was to examine up to what extent the family environment can influence adolescent leisure participate. The result demoustrated a relation between leisure activity and with whom adolescent participated that the time spent in leisure activities.

Stocker, Cm, Burewell. A. briggs M L (2003) studied the associations between sibling conflict in middle childhood and psychological adjustment in early adolescence in a sample of 80 boys and 56 girls.

Belsky, Joy and Barends, Naomi (2002) studied the influence of parents personality on the development of children. The investigation revealed that a child development is benefited from parents who is psychologically healthy and mature and low in neuroticism& high in extroversion, self esteem and internal locus of controls.

Fulgini A J, Yip T, Tsing V (2002) Employed a daily diary method to examine the extent to which Chinese adolescent in the united states assist and spend time with their families & their involvement in other activities & psychological well-being.

Arti Bakshi (2001) studied the impact of the parental attitudes on the personality development of their children. The parent child relationship contribute in his early childhood & late childhood as well.

Lau S, Laing K (2000) in current research and theory have suggested that the relational domains of family and school experiences are important to childrens development.

Bhargava, Mahesh and bansal, (1997) reviewed research on personality correlates of parentally rejected children parental rejection being manifested either as hostility aggression or as parental (in difference) affect the temperamental motivation & in cognitive aspect of personality.

III. Mental Health Introduction

The concept of mental health is as old as human beings. In recent years Clinical psychologists as well as the Educationalists have started giving proper attention to the study of mental health. However, in India, relatively very few works has been conducted.

Defined by *Kornhauser (1965)* "connotates those behaviours, perceptions and feelings that determines a person's overall level of personal effectiveness, success, happiness and excellence of functioning as a person."

It depends on the development and retention of goals that are neither too high nor too low to permit realistic successful maintenance of belief in one's self as a worthy, effective human being *(Lakshminarayan & Prabhakaran, 1993)*. So a mentally healthy person is firm in his intentions and is least distributed by strains and stresses of day to day life.

A. *Meaning:* Mental health is a6 level of psychological well-being or an absence of mental disorder. It is the "psychological state of someone who is functioning at a satisfactory level of emotional and behaviour adjustment." From the perspective of Positive Psychology or Holism, mental health may include an individual's ability to enjoy life activities and efforts to achieve psychological resilience.

B. *Definitions:* Mental health connotates those behaviors, perceptions and feelings that determines a person's overall level of personal effectiveness, success, happiness and excellence of functioning as a person." Mental health refers to cognitive and emotional wellbeing: it is all about how we think, feel, behave.

Mental health also includes a person's ability to enjoy life -to attain a balance between life activities and efforts to achieve psychological resilience. Mental health is "emotional, behavioural, and social maturity or normality, the absence of a mental disorder or behavioral disorder, a state of psychological wellbeing in which one has achieved a satisfactory integration of one's instinctual drives acceptable to both oneself and one's social milieu; an appropriate balance of love ,work , and leisure pursuits." - [Medilexicon's medical dictionary] "A state of emotional and psychological wellbeing in which an individual is able to use his or hercognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life."

Mental health is a broad term. "Mental health describes our social, emotional and psychological states all wrapped up into one." Someone who experience "good" mental health , therefore has found a balance in his or her social, emotional and psychological areas of life [John M. Grohol, Psy.D].

According to WHO (2007), Mental health is about: How we feel about ourselves, How we feel about others, How we are able to meet the demands of life. There may be some confusion in the mind of people as to difference between mental ill health and mental illness.

Such problems are usually of temporary nature. All of us suffers from mental health problems at times and such temporary problems donot necessarily lead to mental illness. However, being mentally unhealthy limits our potential as human beings and may lead to more serious problems.

Some form of medical help is usually need for recovery/ management, this may take the form of counseling or psychotherapy, drug treatment and lifestyle changes.

Approximately 25% of the people in UK have a mental health problems during their lives. The USA is said to have the highest incidence of people diagnosed with mental health.

C. *Factors affecting Mental Health:* According to Joel L. Young M.D, nine life style factors that can affect our mental health- Exercise And Activity Level, Smoking, Diet, Physical activity, Abuse, Social and Community Activities, Relationships, Meditation and other relaxation techniques and Healthy sleep.

D. *Adolescence:* The term Adolescence is derived from LATIN word "Adolescence" which means "to move towards maturity". So we can say that it is a process rather than a period. It is a process in which an individual starts interaction with his/her environment. Adolescence can be defined in many ways-on the basis of physical development, on the basis of age etc.

- On the basis of physical development adolescence undergoes many changes.
- On the basis of age group adolescence is categorized into (20-26)years of age or according to early principles (13-18)years that mainly depends on physical growth and development.

Physical development, Emotional development, Social Development, Intellectual Development.

E. *Problems and Needs of Adolescents:* Following needs and life goals appear to be a source of many emotional problems of adolescents. Need for social status, acceptance and security, independence, adventure, self-support, belongingness. Adjustment to personal appearance, physical and psychological changes, Use of alcohol and drugs, Need of heterosexual relations and a theory of life.

IV. Independent Variable

A. *Emotional Fulfillment:* Basic human needs for emotional fulfillment are universal and include:

Love, Acceptance, Affection, Feeling valued, Appreciated, Secure, Companionship, Admiration, Trust,

Respect, Understanding, Conversation, Communication.

Maslow in 1954 has given a hierarchy of human needs in his "Theory of Self Actualization" which are Psychological, safety, belonging, love, esteem needs and need of self-actualization.

Murray in his studies proposed 12 physical needs and 28 psychological needs. Among them 20 important needs are as follows: Dominance, Sentience, Deference, Exhibition, Autonomy, Play, Aggression, Affiliation, Abasement, Rejection, Achievement, Succorance, Sex, Nurturance, Infavoidance, Ham avoidance, Dependence, Order, Counteraction, Understanding.

B. *10 Steps to Emotional Fulfillment in Psychology today (2012):* We all want to feel happy, and each one of us has different ways of getting there. Here are ten steps that help us to bring more happiness in our life.1-Be with others who make you smile.2-Hold on to your values. 3-Accept the good. 4-Imagine the best. 5-Do things you love. 6-Find purpose. 7-Listen to your heart. 8-Push yourself and not others. 9-Be open to change.10-Bask in the simple pleasure.

V. Models of Stress

A. *Models of Stress:* 3 Models in practice

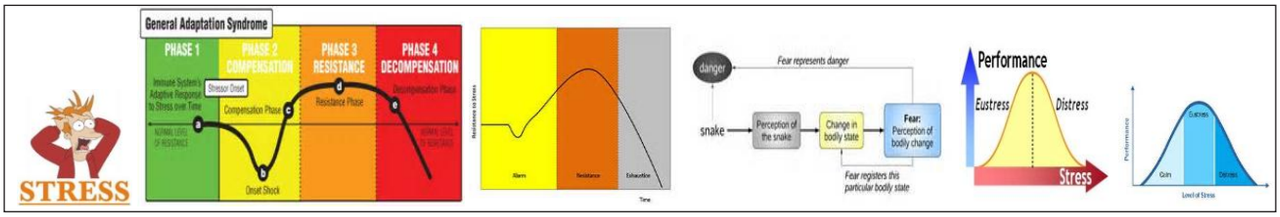


Fig. 1 Fig. 2 Fig. 3 Fig. 4 Fig. 5 Fig. 6

- General Adaptation Syndrome (Fig. 2 and Fig. 3) Stages: Alarm, Resistance, Exhaustion 2-Selye Eustress and Distress (Fig. 4) 3-Lazarus: Cognitive Appraisal Model.

B. *Types of Stress:* Stress management can be complicated and confusing, as there are different types of stress:

- Acute stress (Emotional Problem, Muscular Pressure),
- Episodic acute stress, and
- Chronic stress, each with its own characteristics, symptoms, duration and treatment approaches (Fig. 5 and Fig. 6).

C. *Causes of Stress:* Korchin (1965) have distinguished some classes of stressful situations as follows:

- Uncertainty and under stimulation, 2-Informative overload, 3-Danger, 4-Ego control failure, 5-Ego-mastery failure, 6-Self-esteem danger, 7-Other esteem danger.

D. *Symptoms of Stress:* Stress Warning signs and Symptoms are as below

- *Cognitive Symptoms:* Memory problem, Inability to concentrate, Poor judgment, seeing only the negative, Anxious or reaching thoughts, Constant worrying.
- *Emotional Symptoms*: Moodiness, Irritability or short temper, Agitation, inability to relax, Feeling

overwhelmed, Sense of loneliness and isolation, Depression or general unhappiness.

- *Physical Symptoms:* Aches and pains, Diarrheal or constipation, Nausea, dizziness, Chest pain, rapid heartbeat, Low of sex drive, Frequent colds.
- *Behavioural Symptoms:* Procrastinating or Neglecting responsibilities, Isolating yourself form others sleeping too much or too little, Eating more or less, Nervous habits (e.g. nail biting, pacing), Using alcohol, cigarettes, or drugs to relax.

VI. Mindful Meditation

Crescentini and Viviana Capurso (2015), according to the authors, MM is mental training that involves "focused attention component with a non-judgmental attitude of openness and receptivity when trying to intentionally pay attention, and non-reactively monitor, the content of present-moment experience". By practicing this form of meditation, one is practicing acceptance of the present moment as well as oneself. Over time, self-awareness, acceptance, and compassion are promoted through this practice.

Mcdowell (2015) found that mindfulness meditation have positive impact on personality and self-concept. Chambers et al., (2008) in their research, practiced 20 novice meditations to participate in a 10day intensive mindfulness meditation retreat. After the retreat the meditation group had significantly higher self-reported mindfulness and a decreased negative affect compared with a control group. They also experienced fewer depressive symptoms and less rumination (Fig.15).

VII. Effective Spiritual Tool Meditation with approach of Biofeedback EEG

Applying Alpha EEG after Mindful Meditation-Alpha EEG Biofeedback "Bio Trainer EBF-5000" instrument, developed by MEDICAID systems, established by a group of technocrats having a long experience in design and development of medical electronic instruments was used to access the effect of Meditation on Alpha Brain Waves for generalized reduction of sympathetic activity and treatment of psychosomatic and psychological disorders. Single group per post-test research design was used.

Fig. 13

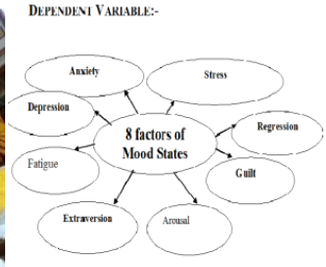


Fig. 14

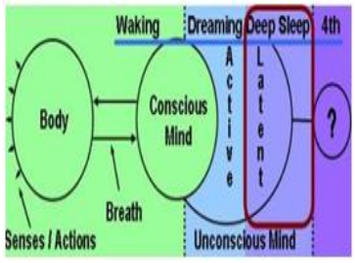


Fig. 15

Name of Level	Frequency in hertz / cycles per second	Description
Beta	14-30	Typic al level of daily mental activity, alert, active. It is also the level of activity associated with tension or stress.
Alpha	8-13	Relaxed, passive attention, reverie, often considered the goal of relaxation exercises. While this is a very relaxing state, and useful to be practiced, it is sometimes incorrectly thought to be the goal of Yoga Nidra.
Theta	4-7	Normally considered to be unconscious, possibly drowsy, or half-asleep. This level is also sometimes incorrectly considered to be the level of Yoga Nidra, where there is still the experience of images and streams of thoughts.
Delta	.5-3.5	Considered to be unconscious, dreamless, Deep Sleep (Prajna). **In Yoga Nidra, the brain waves are at this level**, as the practitioner is in conscious Deep Sleep, beyond the activity experienced at the other levels.

Table 1

A. *Biofeedback EEG Instrument (Earlier Experiments)*

To understand biofeedback, one must first understand what biofeedback is. Biofeedback, also known as neurotherapy, is a progressive relaxation and self-regulation technique used to control one's own stress level (Wenk-Sormaz, 2005). It works by simply preventing illness through stress management techniques. This treatment promotes the quality of life and sharpens coping skills (Baum, Herberman, & Cohen, 1995).

B. *Sensor Modalities*

(Fig.13) Three professional biofeedback organizations, the Association for Applied Psychophysiology and Biofeedback (AAPB), Biofeedback Certification International Alliance (BCIA), and the International Society for Neurofeedback and Research (ISNR), arrived at a consensus definition of biofeedback in 2008: "is a process that enables an individual to learn how to change physiological activity for the purposes of improving health and performance. Precise instruments measure physiological activity such as brainwaves, heart function, breathing, muscle activity, and skin temperature. These instruments rapidly and accurately 'feedback' information to the user. Over time, these changes can endure without continued use of an instrument [13]."

C. *Electroencephalograph*

An electroencephalograph - measures the electrical activation of the brain from scalp sites located over the human cortex. The EEG shows the amplitude of electrical activity at each cortical site, the amplitude and relative power of various wave forms at each site, and the degree to which each cortical site fires in conjunction with other cortical sites (coherence and symmetry) [25] Table1.

VIII. Experiments and Results

A. *Hypothesis:* There is a significant effect of meditation on Mental Health, stress management There is a significant increase in the level of Stress Management and emotional Needs by meditation practices.

- There is no significance difference in the mental health of adolescents due to meditation.
- There is no significant relation between mental health and stress relief practices.

B. Variables in the Study:

Independent Variable- Mindful Meditation, Spiritual attitude, Emotional needfulfillment.

Dependent Variable - Stress Management, Mental Healthof Adolescents, Emotional Needs.

a) Dependent Variable (Fig.14)

*b) Study***:** In this study used questionnaire (stress scale) constructed by DR. M. Singh, 2002. Stress can originate in physiological, psychological and social conditions and threaten the integrity of the body, the personality or the social system. Possible reasons may be Continuous long journeys, Change in job, Transfer, Retirement, Loss of business, Un-fulfilment of commitment, Trouble in neighbourhood, Not being married, Examination or interviews, Death of dear one, Break up with spouse, Family conflict, Large Loan, Birth of third or fourth daughter, Violation of low, Lack of Son, Sexual dissatisfaction, Illness of someone, Prophecy of astrologer, Trouble with boss, Son or daughter left home, Divorce, Delinquent child- If, treatment by parent or other, Fearful dreams, Marital conflicts, Alcoholism

c) Sample Size: Sixty healthy volunteers both male and female were selected for the study from GayatriShaktipeeth, Shantikunj-Hardwar. All participants were student of ninth class students. The age range of the participants was around of 12 to 14 years. Participant were divided randomly into two groups; one was group A-experimental group (n=30) and another was Group B –control group (n=30). The selection of participants was based on:

d) Inclusion Criteria: Healthy both male and female volunteers, ages around of 20 to 26 years, not on medication.

e) Exclusion Criteria: Participants with any of following was excluded-

History of smoking, intoxicants, or consumed caffeinated beverages. Chronic illness and chronic use of medication.

The signed informed consent was obtained from all participants before they participated in the study.

In the present study, a sample of 40 adolescents are selected from ABESEC, Gzb and DSVV Haridwar of graduation. Among these sample 20 are from urban area i.e. Lalquan and 20 are from rural area i.e. Pilkhua in Ghaziabad.

IX. Design of the Study: Procedure of Data Collection

Firstly the researcher has selected the two schools, one in urban area i.e. Lalquan and other in the rural area i.e. Pilkhua in Ghaziabad. The researcher went to the schools and distribute the questionnaire of "Adolescents Emotional Need Fulfilment" among the students of graduation.Then the researcher informed the students about the questionnaire and ask them to fill it and then collected it from them after they finished it. On next day, the researcher again visit the school and distribute the questionnaire of "Mental Health Battery" among the same students and told them to fill it after giving proper instructions and collected them back after they finished it. There was no controlled or experimental group. The procedure is same in school of both urban and rural areas. After collecting data a vote of thanks was given by the researcher to the principal, students and staff member of the schools for their cooperation.

The participants were assessed before and after the session. The intervention was held in four sessions, which was being conducted twice in a week. There are two groups- Group a (Experimental group) and group B (control group). This intervention was held to compare between group A and group B as well as with the aim of showing the effect of positive thinking on group A (Experimental group). All the participants took part in the study voluntarily. Along with their interest these session were being successful in completing this whole study with intervention. The study had the approval of department of psychology of DSVV-Haridwar.

A. Assessment: Many scales have been developed and designed to measure the stress level and creative problem solving of an individual, of different age group. In the current study the scale used to measure the stress level and level of creative problem solving of the students was – "Stress Scale and creative problem solving" Stress Scale – This is a self-reporting scale of measuring stress. The scale consists of 40 items and 3 response categories as – "always", "sometimes" and "never". This scale was used to measure the stress level of the subject before and after the intervention of both the group.

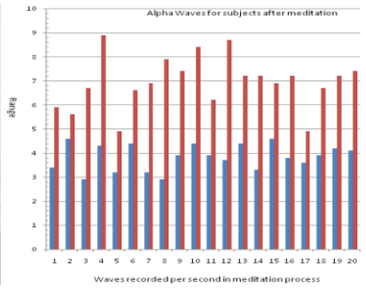
B. Sample Size: Total sample size was 40 out of which 2 groups 'A' and 'B' are formed of 20 each. Group 'A' is of normal people and group 'B' is of people in stress. The ages of the subjects are between 20 to 30 years.

C. Sampling Plan: 40 subjects were selected from DSVV Haridwar and ABESEC, Ghaizabad through incidental sampling method.

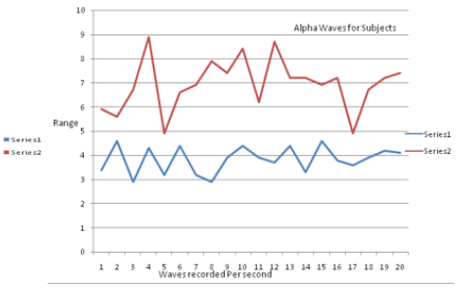
D. Data Collection Procedure: Subjects were given the following instructions by the instructor:

- Adopt any comfortable meditative posture like padmasana, siddhasan,
- Try to follow the given instructions
- Prepare yourself for the practice of meditation
- Keep the head neck and spine upright.
- Close the Eyes and relax the whole body.
- Alpha Waves are indicator of calm, cool and steady and concentrated mental state. Development of talent and innate caliber happens in this stage. Alpha activity of brain is affected by stress, anxiety, mood variations and different environment factors.

FIG. 16



GRAPH 1



GRAPH 2

Hyp1-The Practice of Mindful meditation will positively increase the Apha EEG waves on subjects. Table 1 shows that the mean value are 3.84 for pre-test and 6.94 for post-test and t-value is 12.59 at 19 df on 0.01 level that result is highly significant and Hyp-1 has been proved.

	Reading					Reading					
Name	Pre	Post	Alpha Waves/sec. X	x=X-M1	x2	Pre	Post	Alpha Waves/sec. Y	y-Y-M2	y2	X*Y
Raj	10	34	3.4	-0.44	0.18922 5	10	59	5.9	-1.04	1.081 6	0.452
Radha	10	46	4.6	0.765	0.58522 5	10	56	5.6	-1.34	1.795 6	-1.03
Monika	10	29	2.9	-0.94	0.87422 5	10	67	6.7	-0.24	0.057 6	0.224
Harish	10	43	4.3	0.465	0.21622 5	10	89	8.9	1.96	3.841 6	0.911
Ganga	10	32	3.2	-0.64	0.40322 5	10	49	4.9	-2.04	4.161 6	1.295
Mradul	10	44	4.4	0.565	0.31922 5	10	66	6.6	-0.34	0.115 6	-0.19
Mukesh	10	32	3.2	-0.64	0.40322 5	10	69	6.9	0.04	0.001 6	0.025

TABLE 3

Savitri	10	29	2.9	-0.94	0.874225	10	79	7.9	0.96	0.9216	-0.9
Jaya	10	39	3.9	0.065	0.004225	10	74	7.4	0.46	0.2116	0.03
Rekha	10	44	4.4	0.565	0.319225	10	84	8.4	1.46	2.1316	0.825
Poornima	10	39	3.9	0.065	0.004225	10	62	6.2	-0.74	0.5476	-0.05
Manoj	10	37	3.7	-0.14	0.018225	10	87	8.7	1.76	3.0976	-0.24
Mukul	10	44	4.4	0.565	0.319225	10	72	7.2	0.26	0.0676	0.147
Suresh	10	33	3.3	-0.54	0.286225	10	72	7.2	0.26	0.0676	-0.14
Savita	10	46	4.6	0.765	0.585225	10	69	6.9	-0.04	0.0016	-0.03
Anmol	10	38	3.8	-0.04	0.001225	10	72	7.2	0.26	0.0676	-0.01
Mradul	10	36	3.6	-0.24	0.055225	10	49	4.9	-2.04	4.1616	0.479
Veerendra	10	39	3.9	0.065	0.004225	10	67	6.7	-0.24	0.0576	-0.02
Akhilesh	10	42	4.2	0.365	0.133225	10	72	7.2	0.26	0.0676	0.095
Nupur	10	41	4.1	0.265	0.070225	10	74	7.4	0.46	0.2116	0.122
		Sum	76.7	Ex	5.6655			138.8	Ey	22.668	Exy 2.012
		M1	3.835		0.283275	M2	6.94			1.1334	
					SD1	0.532236				SD2	1.0646

TABLE 4

M1	3.84
M2	6.94
r	0.18
SDx	0.53
Sdy	1.06
SED	0.25
t-value	12.6

TABLE 5

	Mean	SD	r	SED	df	t-value	Level of Sig.
Pre	3.84	0.53	0.17	0.25	19	12.59	At 0.01
Post	6.94	1.06					

TABLE 2

	Alpha EEG for combined Before experiment							Alpha EEG for combined After Experiment Reading					
Name	Age	Sex	Pre	Post	Alpha Waves/sec.X	x=X-M1	x^2	Pre	Post	Alpha Waves/sec.Y	y-Y-M2	y2	X*Y
Rakhi	23	F	10	51.7	5.17	0.04	1.600E-03	10	92.7	9.27	2.25	5.0625	0.09
Anamika	24	F	10	41.3	4.13	-1	1.000E+00	10	72.3	7.23	0.21	0.0441	-0.21
Sanjeev	23	M	10	60	6	0.87	7.569E-01	10	100.3	10.03	3.01	9.0601	2.6187
Sudha	25	F	10	73.7	7.37	2.24	5.018E+00	10	97	9.7	2.68	7.1824	6.0032
Ankita	26	F	10	46.7	4.67	-0.46	2.116E-01	10	63	6.3	-0.72	0.5184	0.3312
Satyendra	24	M	10	61	6.3	1.17	1.369E+00	10	78	7.8	0.78	0.6084	0.9126
Sumit	21	M	10	29.7	2.97	-2.16	4.666E+00	10	64	6.4	-0.62	0.3844	1.3392
Jitendra	22	M	10	56	5.6	0.47	2.209E-01	10	68.7	6.87	-0.15	0.0225	-0.0705
Chhaya	22	F	10	44.7	4.47	-0.66	4.356E-01	10	102.3	10.23	3.21	10.3041	-2.1186
Aneeta	24	F	10	41.3	4.13	-1	1.000E+00	10	70.7	7.07	0.05	0.0025	-0.05
Shobhee t	32	M	10	44	4.4	-0.73	5.329E-01	10	63.3	6.33	-0.69	0.4761	0.5037

TABLE 6

Ajeet	25	M	10	47.3	4.73	-0.4	1.600E-01	10	60.7	6.07	-0.95	0.9025		0.38
Swati	24	F	10	43	4.3	-0.83	6.889E-01	10	67.7	6.77	-0.25	0.0625		0.2075
Naveen	24	M	10	53.3	5.33	0.2	4.000E-02	10	59	5.9	-1.12	1.2544		-0.224
Meenakshi	23	F	10	47.7	4.77	-0.36	1.296E-01	10	43.3	4.33	-2.69	7.2361		0.9684
Anshu	21	M	10	47.7	6.77	1.64	2.690E+00	10	52	5.2	-1.82	3.3124		-2.9848
Surakhsha	21	M	10	40.7	4.07	-1.06	1.124E+00	10	64.1	6.41	-0.59	0.3481		0.6254
Sheela	24	M	10	52.3	5.23	0.1	1.000E-02	10	52	5.2	-1.82	3.3124		-0.182
Asif	24	M	10	60.3	6.03	0.9	8.100E-01	10	52.7	5.27	-1.75	3.0625		-1.575
Sameer	26	M	10	64.3	6.43	1.3	1.690E+00	10	63.5	6.35	-0.67	0.4489		-0.871
				Sum	102.87	Ex				138.75	Ey		Exy	5.694
				M1	5.134				M2	7.02				0.2847
							SD1	1.02				SD2	1.62	

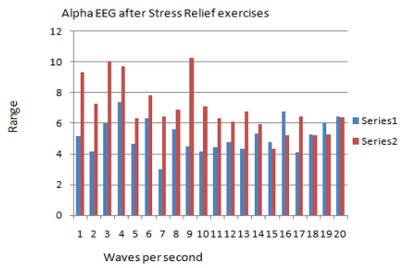
TABLE 7

Alpha EEG-Combine	
M1	5.134
M2	7.02
N	20
r	0.52
SDx	1.02
SDy	1.62
SEMx	0.24
SEMy	0.37
SED	0.108
t-value	0.01
Sig	0.01

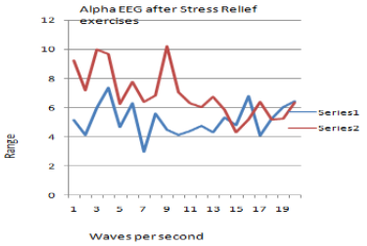
Alpha EEG-For Male	
M1	4.98
M2	5.94
N	10
r	0.24
SDx	0.87
SDy	0.79
SEMx	0.29
SEMy	0.26
SED	0.115
t-value	8.42
Sig	0.01

Alpha EEG-For Female	
M1	5.28
M2	4.73
N	10
r	0.71
SDx	1.26
SDy	1.55
SEMx	0.42
SEMy	0.52
SED	0.14
t-value	20.16
Sig	0.01

TABLE 8



GRAPH 3



GRAPH 4

Parts	Area	Mean age	N	Test-retest r.	Odd-even r. (whole-length)
1	Emotional stability			.876	.725
2	Overall-Adjustment	15-16 years	102	.821	.871
3	Autonomy			.767	.812
4	Security - insecurity			.825	.829
5	Self-concept			.786	.861
6	Intelligence			.826	.792

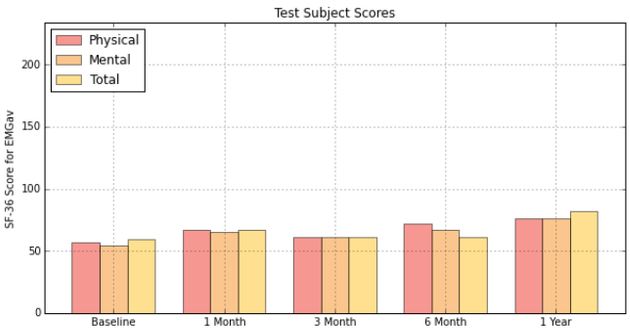
TABLE 9

P70 and above	GOOD
P50 to P69	AVERAGE
Below p49	POOR

TABLE 10

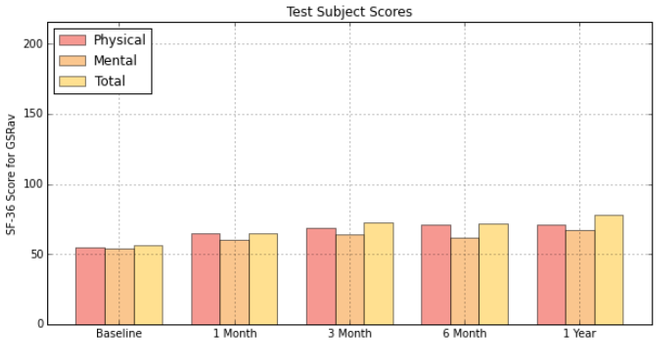
E. Interpretation table: Table 9 and Table 10, Age-Limit: (20-26) years

a. Experiment with EMGav & GSRav



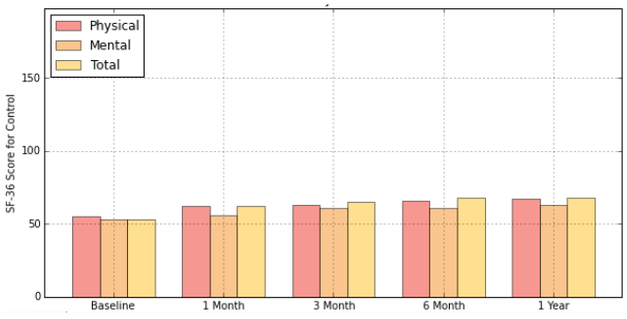
b. Analysis

The above graph shows the SF-36 Scores of 27 patients which were give GSRav treatment over the period of Baseline, 1 Month, 3 Month, 6 Month, 1Year. And form the graph it is observed that the scores of all the patients have been increased.



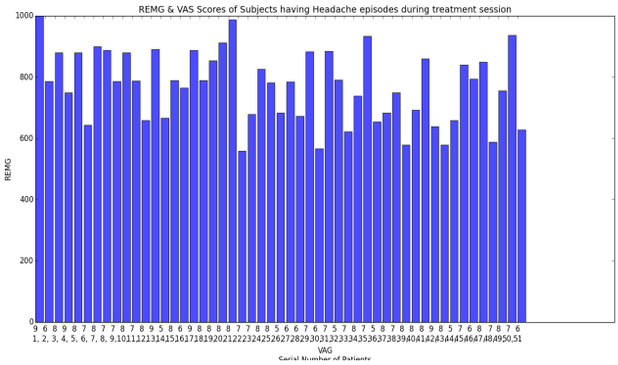
c. Analysis

The above graph shows the SF-36 Scores of 27 patients which were give GSRav treatment over the period of Baseline, 1 Month, 3 Month, 6 Month, 1Year. And form the graph it is observed that the scores of all the patients have been increased.



d. Analysis

The above graph shows the SF-36 Score of 27 patients which were categorized under the category of control group and the over the period of Baseline, 1 Month, 3 Month, 6 Month, 1 Year. And from the graph it is observed that the above scores increased.



e. Analysis

The following graph show the score of REMG & VAS of 51 patients. X axis shows the score of VAG and REMG score is shown on Y axis. The X axis is also shows the serial number of patients.

F. Description of Adolescent Emotional Need Fulfilment Scale: This scale consists of 6 different dimensions - Need for Affection, conversation, family support, admiration and appreciation, social support, independence and dominance.

G. Result

- Hypothesis 1: There is no significant difference in the level of mental health between adolescents of urban and rural area.
- Hypothesis 2: There is no significant relation between mental health and need of affection in urban adolescents.

X. Discussion and Interpretation

A. For Hypothesis 1

The result shows that the null hypothesis is not significant at 0.05 level of significance. From percentage table it is shown that mental health of urban adolescents is higher than that of rural adolescents. It may be possible because the urban area people have more facilities and advancement in their livings as compared to the people in rural areas. They have more freedom and opportunities to live a healthy and luxurious life. They have more exposure for everything and have good relations with their parents. There is less domination of families in urban areas as compared to rural because there are maximum number of nuclear families living in urban areas and both parents are job oriented. So, minimum boundations and restrictions are implicated on the children of urban areas. Moreover, there are many activities and courses in the urban areas that the children spend their leisure time in it other than studies. More privacy is found in urban areas which involves less interference of others in the life style of others. All these things may be found in rural areas but are less as compared to urban one. That's why maximum people are shifting towards urban areas from the rural ones in order to get job and facilities to lead a luxurious life.

B. In Case of Urban Areas

Hypothesis 2,3,4,6,7 are proved insignificant at 0.05 level of significance but from percentage tables it has been found that there is a significant relation between mental health and emotional need fulfilment. The obtained result by the researcher in the study may be varied due to the small sample size but there are many researches which shows that emotional needs influences the mental health of adolescents which is discussed further by the researcher.

Hypothesis 5 is proved significant at 0.05 level of significance. It means that there is a significant relation between mental health and need of social support in adolescents of urban areas.

C. In Case of Rural Areas

Hypothesis 8,9,10, 11,12,13 are found to be insignificant at 0.05 level of significance. But from percentage table it has been found that mental health and emotional need fulfillment are directly related to each other.

As we knows that "Emotion is subjective, conscious experience characterised primarily by psychological, physiological experiences, biological reaction and mental states.

Emotions are the expressions of our thoughts and acts as the stimulants for our behaviour. So the needs related with emotions influences our mental health.

According to Self-Determination Theory (Deci Ryan,1991, 1995, 2000, 2008): Individuals experience the fundamental need to experience autonomy feel competent and development relationships.

When all of these needs are fulfilled individuals experience improvements in well-being and satisfaction. They also become more resilient rather than sensitive problems. However, many common trends, such as the inclination to conceal personal problems or work extensive hours can impede the likelihood that such needs are fulfilled.

Emotions are the core of our personality and every situation of human areas are influenced by it. They guide our behaviour, motivate us to reach the goals and emotional energy are necessary for ones success in life. When an individual is emotionally disturbed, he cannot concentrate on anything properly.

As we all know that when one suppress his emotions continuously and don't express it, then it leads to a great deterioration in behaviour and it also disturbs the psychological wellbeing. The individuals suffers from stress, anxiety, bad thoughts, sadness, aggression, mental conflicts, depression and later it turns into psychosis. No doubt, medical and neurological conditions are there but maximum cases are psychological.

Following are the theoretical bases which support the interpretation or results of the present study. H. Taylor, (1988) Psychological & motivational factors that have been reinforced seems to play animportant role in the external outcome of people with learning disability. Factors such as Socio Economic Status, cultural expectation, parental interaction & expectation & child management practices, together with existing neurological deficies & type of support provided in the school, seen to determine outcome. Family conflicts & instabilities appear to contribute to anxieties, depression & conduct disorders in Children & to eating disorders in adolescents. Inconsistent or harsh parenting practices are often associated with externalizing Problems, such as conduct disorevents experienced by the parents to be depressed mood in the adolescents children. Parental stress may lead parents to become depressed which may lead them to be less tolerant of their children & more reliant on harsh or inconsistent parenting behaviors which may raise the risk that their children may become depressed.

Children may suffer parental abuse or severe neglect are at a greater risk at adolescent of lowered intelligence & depression & suicide among other problems. Lack of proper parenting techniques in the child leads to deliquient tendencies, personality faults & negative self image.

"Baumrind" found that children of authoritarian parents lead to lack social competence in dealing with other children. They frequently withdrew from social contact & rarely took initiative. In situation of moral conflict, they tended to look outside authority to decide what was right. Also children of permissive partended to be relatively immature, they had difficulty in controlling their impulses, accepting responsibilities for social actions & acting independently.

From the above researches it has been proved that mental health is directly related to the emotional need fulfilment. On the basis of comparison between urban and rural area adolescents it has also been found that emotional need fulfilment in urban area adolescents is higher than the adolescents of rural areas. It has also been proved in hypothesis 1 that the mental health of urban adolescents is higher than that of rural adolescents. These results also indicates that the emotional need fulfilment and mental health is directly related with each other.

Need of affection, need of family support and need of social support is found very poor among adolescents in rural areas than others. It may effects the personality development of the growing adolescents which may results into low self-esteem, inferiority, aggression, hostility, lack of self-confidence; negative attitude towards the family and society.

Therefore, the parents, teachers and the siblings needs to understand the problems of the adolescent children and should provide them with their emotional support and guidance to face the problems of their life.

The researcher also found that there is a significant difference in the mental health of the boys and girls, especially in rural areas the difference is very high. In rural areas the girls have poor mental health as compared to boys. But in urban areas there is less difference in mental health between boys and girls.

It may be possible because of the backwardness and stereotype thinking among people living in the rural areas. Still there

exists biasness in the behaviour of parents between boys and girls and more restrictions are implied on girls as compared to boys that directly affects their mental health. Even after the great advancements in the country the girls have to suffer from domination, restrictions and obligations by the society. It needs to be improved.

XI. Novelty in this Paper

In the present study the effect of positive thinking to manage daily life stress and increase the capacity of problem solving. Stress is a most command term which we use in daily life without any reason. That means we use this term commonly but stress is not so easy to explain. Stress as a word means "to draw tight" and has been used to describe hardship, affliction, force, pressures, strain or strong effort. It is also external pressure or pressure supplied on the individual.

Many people experience stress as they combine busy lives and the demands of study while trying to save time for friend and family. We all experience episodic stress, like, getting ready for an important way of life. Stress is generally term applied to various mental and physiological pressures experienced by people in their lives.

Problem solving is sometimes associated with decision-making. There are two higher mental processes. Problem solving has been conceived by psychologists as discovery of correct response to a problem or situation that is new and difficult to the individual. But decision-making refers to selection of a correct response, out of several correct responses already brought out and had been found that as people are getting older and older their problem solving ability is reducing.

XII. Future Scope, Limitations and Possible Applications

This is an endeavour of a student to study the effect of watching positive thinking enhancing movie on stress management and creative problem solving. Due to these limitations this study was conducted in the university premises with small size of sample, similar studies can be done in different parts of the country on large samples for better scope of generalization. For the further researches it should kept in mind that environment also play a vital role in increment and decrement of mental health so, it should also include, it can be done on the sample of different age groups, gender differences, socio economic status, parents education, academic environment.

This research is done in a very short time period due to limitation of some aspect left by the researcher. They should also build in further studies.

- Study the physiological, psychological and therapeutic effect of positive thinking and mindful meditation.
- Control group and long duration study suggested.
- Study of its effect on exclusion and inclusion criteria.
- Effect of this practice can be studied on other dependent variables i.e. BP (Blood pressure), HR (Heart Rate), Hb (Haemoglobin), ESR, TLC (Total lymphocyte count)., DLC (Differential Leucocytes count), Sugar Level, Lipid Profile and different lung functions.
- Study the effect of meditation at microscopic level.
- Study its effect not only on mental and physical but at consciousness level too.
- The research should be conducted on larger sample.
- Another tool of measure should be used to measure the variables.
- A large sample size should be selected.
- The further research should be conducted between adolescents of two different states, socio economic status, different gender.

XIII. Conclusion

This study concluded that the Effect of watching Positive thinking enhancing movie also helps in stress management and increase the level of Creative Problem solving among students. Because we also know that the students who watching this positive enhancing movie also perform good in their work and other students who did not watching movie have no difference before their work. And we know that, Stress is physical response to a situation. Some level of stress is essential for response but continuous and high level of stress is harmful for the human, manifest as physical and mental. A person's response towards stress depends on whether an event is appraised as a challenge or a threat (Lazarus and Folkman,1984). So it's play an important role in our life. Students had now a good copping capacity to manage stress and also done their work very well, i.e. had a good problem capacity. This higher level of intelligence is the best indicator c. Student characteristics like intelligence level are significant predictors for students' performance at school besides the other school factors, peer factors and family factors. Higher intelligence levels lead to higher performance of students in studies, and low intelligence levels lead to lower performance (Hanes, 2008). That the low intelligence level has negative on the academic performance of students because the mental capacities to learn and understand the things and logical power they need is remain lacked and hence they do not perform better academically.

In this study, the experimental group showed significant reduction in the level of stress. Hence it can be concluded that continuous positive thinking has the capacity to reduce stress among students and increase their working performance.

The statement of the problem is "A study of mental health of adolescents as related to emotional need fulfilment".

The 13 null hypothesis are formulated in this study.

Only hypothesis 5 is proved significant at 0.05 level of significance which indicates that there is a significant relation between mental health and need of social support.

Other hypotheses 1,2,3,4,6,7,8,9,10,11,12,13 are not significant at 0.05 level of significance which indicates that there is no significant relation between the mental health and emotional need fulfillment.

But the percentage tables in every hypothesis shows that there is a significant relation between mental health and emotional need fulfilment.

But from the percentage table we can say that mental health and emotional needs are related.

XIV. Acknowledgement

Authors convey their esteem gratitude to Management of Dev SanskritiVishwavidyalayaharidwar and Shantikunj where the BioFeedback experiments and study were conducted.

Also the infrastructure, staff support and students of ABESEC, Gzb. Are specially thanked for their time contribution to be part of this study.

References

[1] A. Bakshi, "Impact of the parental attitude on the personality development of their children," *Prachi Journal Psychocultural Dimension,* vol. 17, no. 2, pp. 129-132, 2001.

[2] R. A. Baron, (2003). Psychology (3rd ed.). Printice hall of India, New Delhi.

[3] J. Belsky, and N. Barends, "For the study of children families and social issues," Personality & parenting, handbook of parenting (Being & Becoming a parents), vol. 89, 2050, London: UK, 2002.

[4] M. Bhargava, and R. Sandhu, "Family size and family pattern as determinents of child's personality under condition of maternal acceptance rejection," *Ranchi Journal of Psycho-culture Dimensions* vol. 5, no. 1, pp. 25-35, 1989.

[5] C. E. Burt, L. H. Cohen, and J. P. Bjorck, "Perceived family env. As a moderator of young adolescents, Life Stress Adjustment," *American Journal of Community Psychology,* vol. 16, no. 1, pp. 101-122, U Delaware, USA, 1988.

[6] M. Bhargava, and I. Bansal, "An over view of personality researches on parentally rejected children," *I. P. A. & Review,* vol. 4, no.1, 1997.

[7] Singh V., and S. Saxena, "Home environment and aggressive Behaviour," *Indian Journal of Psychometry & Education*, vol. 24, no. 2, pp. 115-117, 1993.

[8] S. K. Panday, and K. L. Aggrawal, "Adolescent perception of parental behaviour," *Prachi, Journal of Psychocultural Dimensions,* vol. 13, no. 1, 1997.

[9] C. M. Stocker, R. A. Burewell, and M. L. Briggs, "Sibling conflict in middle childhood predicts children's adjustment in early adolescence," *Journal of Family Psychology,* vol. 16, no. 1, pp. 50-57, 2002.

[10] R. Plomin, M. J. Owen, and P. McGuffin, "The genetic basis of complex human behaviors," *Science,* vol. 264, no. 5166, pp. 1733-1739, 1994. DOI: 10.1126/science.8209254

[11] Kropotov, J. D. "Quantitative EEG, event-related potentials and neurotherapy," San Diego, CA: Academic Press, 2009.

[12] R. N. Cassel, "Biofeedback for developing self-control of tension and stress in one's hierarchy of psychological states," *Psychology: A Journal of Human Behavior,* vol. 22, no. 2, pp. 50-57, 1985.

[13] D. C. Turk, K. S. Swanson, and E. R. Tunks, "Psychological approaches in the treatment of chronic pain patients: When pills, scalpels, and needles are not enough," *The Canadian Journal of Psychiatry,* vol. 53, no. 4, pp. 213-223, 2008.

[14] M. R. Valdes, "A program of stress management in a college setting," *Psychotherapy in Private Practice,* vol. 6, no. 2, 43-54, 1988.

[15] H. Wenk-Sormaz, "Meditation can reduce habitual responding," *Advances in Mind-Body,* vol. 21, no. 3-4, pp. 33-49, 2005.

Related Sites

Angel. Ibanez-baldor@mu.edu, www.stress management by different yoga therapy@yahoo.co, www.stress management strategy.com, www.stress@yahoo.com, www.clevandclic.oeg/health/, www.stress-And –Relaxation.co, www.changingminds.org, www.helpguide.org, www.otx.com, http://www.maine.gov/education/lres/pei/glossary032008.rtf, http://www.maine.gov/education/lres/pei/, http://www.sciencepub.net, en.wikipedia.org/wiki/stress.pdf, emilkirkegaard.dk/en/wp.../creative problem solving.pdf,personalpages.manchester.ac.uk/staff/alex.wood/hope_education.pdf,