Chapter-III

Review of Literature
Life today is fast-paced, competitive and stressful. Moderate stress can be up-lifting and invigorating. Nevertheless, when the demands placed upon an individual greatly exceed his habitual levels of performance or coping, he suffers discomfort and strain and body’s defenses become overworked and exhausted. Individual experiences negative effects of stress like physiological, psychological, emotional, behavioural or cognitive. Yoga works to free the body from the symptoms of stress by focusing on body, mind and the emotions. It enhances the health and youthfulness of the body and clarity of mind; it helps people achieve their full potential and a heightened awareness.

Hence, an attempt is made here to review the literature on stress and its effects—physical, psychological, emotional, behavioural or cognitive; managerial or executive role stress and its effects on their health and skills; effects of yoga or meditation.

Lazarus and Folkman (1984) define “Stress is as a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his resources and endangering his well being”.
It is discovered that 54% of workers feel that trying to maintain a work-life balance is a great source of additional stress at work. *Kensington, Technology* (1999).

Stress costs American Industry more than $300 billion annually or $7,500 per worker per year in terms of lost hours due to absenteeism, reduced productivity and workers' compensation. *Lyle H. Miller and Alma Dell Smith. APA* (1997).

A survey of 1,309 male executives revealed that their average level of work-family conflict was subsequently higher than for lower level employees. *Judge, Boudreau and Bretz* (1994).

A study of 30 CEOs of major corporations found that their intensive organizational commitment and job involvement resulted in imbalance in their personal lives leaving little time for their families. When questioned 60% said they desired a greater balance between work and family life. *Piotrowski and Armstrong* (1989).

A study on 219 managers and supervisors of Government welfare agency suggested that emotional exhaustion and depersonalization were strongly associated with stress. These findings were supported by a later meta-analysis of 61 studies. *Lee and Ashforth* (1990, 1996).
In a study consisted a sample of 300 managers including 45 top, 150 middle and 105 junior management personnel from both public and private sectors from the southern region of India found that job pressure contributed most dominantly to stress followed by belief in chance, drug intake, age, family size at junior management level. In public sector, preponderance of job pressure was most predictive of executive stress followed by other variables such as belief in chance, age, education, drug intake and family; in case of the private sector, belief in chance appeared to be the most pre dominant predictor of stress followed by belief in power, others and drug intake. Bhandarker and Singh (1986).

On the basis of the findings of the study on the group of 173 and 76 managers of two public sector organizations, it is concluded that the organizational climate, particularly interpersonal relations have a significant influence on employee performance. Madhu Rao (1987).

Research on 20 seniors executives from US Companies and 42 Senior Executives from European companies reveled that the major reason for executives derailment was poor interpersonal relations – that is an inability to get along with other people.
A study by Singh (1986) on a group of 250 middle and lower level executives (175 executives from five private sector organizations and 75 executives from three public sector organizations) revealed the following points:

A) Personal and Organizational factors related to the dimensions of stress in specific ways. Younger executives who lacked preference for certainty and autonomy experienced high stress. Similarly lack of structure was related to high role ambiguity.

B) The higher-level executives experienced less stress and strain; utilized better coping strategies and enjoyed more positive outcomes. Executives of public sector organizations experienced less effective coping strategies and rated themselves as less effective than their counterparts from the private sector. It is concluded that in most cases stress leads to negative consequences and therefore, efforts should be made to reduce it.

In a more comprehensive study, Sri Lata (1988) attempted to find out whether stresses like role conflict, role ambiguity, role overload and self-role distance may arise because of certain structural factors of the organization, job factors, perceptions of the person. Some of the findings of the study were:
a) Organizational stress, role ambiguity and role overload were negatively and significantly associated with four factors of self-confidence namely job knowledge, work planning, upward communication and controlling in case of public and pooled samples. However, only two factors namely work planning and upward communication were associated significantly with their stress variables in case of the private sector.

b) In case of private sector beside remuneration, all job satisfaction variables namely supervision, working conditions, colleagues, opportunity for promotion and job as a whole were negatively and significantly associated with role stress variables.

c) Negative and significant correlation reported between role ambiguity and performance indicates that high ambiguity adversely affects performance.

In the light of these findings, the author has drawn a profile of high and low group managers. According to this profile, the high stress groups perceived their job and work situation negatively; their subordinates and colleagues as low in work and person orientations than the low stress groups. More over, they were
dissatisfied with jobs and found their job uninteresting and difficult.

On the contrary, the low stress groups perceived their superior as more trustworthy, strong in individual determination, high in initiation and consideration than the high stress groups. They were more satisfied with their job, perceived their job as interesting, easy and clear; and were better acquainted with job knowledge, work planning and ability for group rapport with their superior and subordinates.

In a study on a group of 330 Indian senior executives, it was found that 21.2% of the executives had between 80-90% chance of a serious illness, 36.3% had 50% chance of serious change in health and 42.45% had 33% chance of a serious health change.

Managers high in internal locus of control were shown to experience less stress than did managers in similar jobs, who were high in external control.

The researchers concluded that the belief in one's level of control, which is the component of hardiness, significantly reduces the negative effects of stress. Gemmil and Heisler (1972).

In the second part of their study, Bhandarkar and Singh (1986) highlighted the impact of individual personalized
habits and way of life on stress reduction variables like belief in internal control and positive habits such as Yoga, Meditation, Breathing exercises, Walking, Prayer, Music, Reading, Sports, which were subjected to correlational analysis with overall stress score. The authors concluded that these variables are significant in stress reduction.

Studies of American and British women managers showed that women managers reported significantly higher levels of stress with regard to conflict between career and family than did male managers.

Women managers also had more psychosomatic complaints and feelings of nervousness, tension and tiredness. The researchers also found that when male managers developed stress-related illness, these tended to be manifested in physical symptoms; whereas when women managers developed stress-related illness, these tended to be manifested in emotional symptoms. Davidson and Cooper (1987); Lam, Wong, Chow and Kleevens (1987).

Another study on 392 executives revealed that all the executives with lower degree of role ambiguity reported higher job satisfaction and also perceived the organizational climate as highly achievement oriented. Further, lower the degree of role
stress the higher was the score on organizational effectiveness and vice-versa. It also emerged in the study that the organizational climate was more influenced by stress level of senior executives than the stress level of others; similarly in order of priority, job satisfaction, legitimization, innovation and achievement were the most important predictors of organizational role stress.

On the basis of these findings, it is concluded that lower level of stress promotes a better climate and in turn affects organizational effectiveness. And efforts should be made to lower the impact of stressors. Khanna (1985).

Findings from the Families and Worker Institute's National Study of the Changing Work Force (1997) suggest that job related stress mediates the effects of job and work place characteristics on employee attitudes, productivity and retention.

As reported by number of studies in Japan, more and more workers have been suffering from stress at work. The causes of increasing stress at work are diverse such as restructuring, leaner organization, globalization and new technologies. The high level of stress among employees may considerably affect the level of employees' health, leading to increasing number of employees with stress related diseases, especially psychosomatic disorders. Satoru Shima Department of Management, Tokyo, Keizau University.
It is estimated that 50% of the executives suffer from emotional strain and anxiety, as they have to face various organizational problems; sometimes the job requirements also produce anxiety. *Pastonjee (1996).*

Unmanaged stress may result in emotional, cognitive and physical consequences. 43% of all adults suffer adverse health effects from stress; 75-90% of all physician office visits are for stress-related ailments and complaints; stress is linked to the six leading causes of death—Heart disease, cancer, lung ailments, accidents, cirrhosis of the liver and suicide: The occupational safety and health administration has declared stress a 'hazard' of the workplace. *APA (1997).*

Psycho-emotional tensions can cause a number of organic diseases and these are on the increase all over the world. Most headaches are due to tension, 95% of headaches and pain in back, of neck are due to psychological factors, 50% of the ambitious driving individuals with underlying dependency problems often suffer from ulcers: High blood pressure is one of the most important factors predisposing people to heart attack and strokes. It has been seen that 20% of the executives have high blood pressure. *M. M. Bhamgra 'stresses of life- how to cope with them’ (1985).*
According to the results of periodic check-ups of 4,000 executives in India, it is observed that 40% of executives are overweight. The main cause of overweight is over eating, drinking and lack of exercise. Over weight or underweight is disadvantageous as it usually results in lowered efficiency or poor health.

Diabetes affects all the organs of the body like heart, eyes, brain and kidneys, 75% of the executives were diabetic and subjected for the cataract (independent). It has been found that 40% of the executives experience sexual problems, which were mainly due to emotional tension, excessive drinking, overweight and a very demanding life partner; 9% of them had three common liver complaints feeling of liverishness leading to nausea and vomiting, infectious hepatitis and amoebic hepatitis. Dastoor (1986).

Excessive stress can lead to various health related problems- Gastrointestinal, peptic ulcer, cardiovascular disease, hypertension, immune disease, cancer, endocrine disease (diabetes mellitus), hyperthyroidism (frightening / stressful experience), female reproductive dysfunction, obesity, pulmonary disease, bronchial asthama; schizophrenia, depression, anxiety, phobia, alcoholism, drug abuse and sleep disturbance. Panel

Millions of Americans suffer from physical, behavioural and psychological consequences of stress. These include- elevated blood pressure, which overtime can lead to hypertension and heart arrhythmias; increased muscle tension; elevated pulse and respiration; sweaty hands, headaches, upset stomach; high pitched voice, dry throat and mouth; sleep disturbances. Paper # 021642-‘Effects of stress’ Academic Resources Centre Inc. (2005-06).

More often stress tends to elicit unpleasant emotions rather than pleasurable ones, commonly include- annoyance, anger, anxiety, fear, dejection and grief. Lazarus (1993), Woolfolk and Richardson (1978).

There is an evidence that high emotional arousal can interfere with attention and memory retrieval and impair judgment and decision-making. Janis (1993), Mandler (1993).

A study on association between stress and the development of generalized anxiety disorders revealed that men who experienced high stress were 8.5 times more likely to develop

The results of the study by Lu.L. and Tseng H., Kaohsiung, Medical College, Taiwan on Managerial stress, job satisfaction and health in Taiwan indicate that managers were under considerable work stress and were at risk of mental and physical ill health. Internal control was related to higher job satisfaction. Its interaction with work stress was detrimental to psychological well-being.

A study on the sample of 499 managers from public and private sector organizations in Slovenia, revealed that the most important sources of stress in terms of the outcomes (job satisfaction, mental and physical well-being) are pressures originating from organizational climate, relationships, home/work balance and responsibility. Managers with internal locus of control (both general and work related) were more satisfied and reported higher levels of mental and physical well-being. Dr. M. Pagen, College of Police and Security Studies, University of Ljubljana, Slovenia.

It is evident from the studies of Rai, Singh and Udupa (1977); Singh, Prasad, Chansouria and Udupa (1977) that stress
can cause a number of diseases of various organs and bodily systems.

Kumar, Chandel, Singh and Pant (1977) noted that stress caused diseases include thyrotoxicosis, hypertension, peptic ulcer, ulcerative colitis, bronchial asthma, rheumatoid arthritis and coronary heart diseases. Further, diseases such as rheumatoid arthritis and ulcerative colitis are autoimmune diseases, which are markedly influenced by stress.

The causes and consequences of stress are related in complex ways. The most common causes of stress are organizational stressors-task demands, physical demands, role demands, interpersonal demands; life stressors or common consequences include individual consequences, behavioural (alcohol and drug abuse, violence), psychological (sleep disturbances, depression), medical (heart disease, headaches) and organizational (decline in performance, absenteeism, decreased motivation and satisfaction as well as burnout). James Quick and Jonathan D. Quick 'Organizational Stress and Preventive Management', pp.19, 44 and 76 (1984).

Stress is often the source of debilitating ulcers, escalating BP, heart attacks and strokes. Stress may also increase the symptoms of rheumatoid arthritis because the hormones that are

Ahmad, Bhardwaj and Narula (1985) conducted a study of stress among executives (30 executives from public and 30 executives from private sector). It was observed that public sector executives experience slightly more stress than their counterparts in the private sector.

In a study of managers' perception of stress in the workplace, it was found that burnout, long working hours, physical and emotional exhaustion, taking too much home work with them were the main stressors. Opinion Research Corporation; Wall Street Journal (Feb. 26, 1996).

In managerial employees (N=442), two of the four work related stressors that were assessed (work load and role ambiguity), predicted the depressive symptoms. Christopher Tennant, Institute of Stress Medicine (2001).

It is reported by many researchers that the low job satisfaction was associated with high stress. Hollingworth et al., Abdul Halim (1981); Keller et al. (1975); Leigh et al. (1988).

A study consisted of 105 managers (in and around Calcutta city, India) revealed that individuals under excessive stress tend to
find their jobs less satisfying. Some of their intrinsic or extrinsic needs may be thwarted or not met sufficiently. K. Chandraiah, S. C. Agrawal, P. Marimuthu and N. Manmohan, 'Occupational Stress and Job Satisfaction among Managers: Indian Journal of Occupational and Environmental Medicine (2003).

Stress can have a major impact on the physical functioning of the human body. Such stress raises the level of adrenaline and corticosterone in the body, which in turn increases the heart-rate, respiration, blood pressure and puts more physical stress on bodily organs. Long-term stress can be a contributing factor in heart disease, high blood pressure, stroke and other illnesses. Selye (1936).

Excess of psychogenic stress can interfere with the function of cerebral cortex and cause diabetes mellitus. A prolonged psychogenic stress leads to the development of neurosis and there occurs a disturbance in the kidney function resulting in the disorders of water and salt metabolism and disturbance in the urinary excretion; similar to all other endocrine glands, gonads are also influenced by psychic stress. K. N. Udupa 'Stress and its management by yoga' (1996, 2000).

Exposure to stressors induces a rise in certain hormones secreted by the adrenal glands, an increase in heart rate and
blood pressure and changes in how well they conduct electrical impulses. Manson (1975), Seyle (1976).

Several studies revealed that continued exposure to stress results in a decline in the body’s overall level of biological functioning due to the constant secretion of stress-related hormones. Overtime, stressful reactions can promote deterioration of body tissues such as blood vessels and the heart. Ultimately, an individual becomes more susceptible to disease as his ability to fight off germs is lowered. Kiecolt, Glaser and Glaser (1986); Schneiderman (1983); Cohen, Tyrrel and Smith (1991).

The implications of work-related stress include- effects on workers’ satisfaction and productivity, their mental and physical health, absenteeism and its economic cost, the wider impact on family function and the potential for employer liability: While depression is the most likely adverse psychological outcome, the range of the ‘psychological’ problems include, burnout, alcohol abuse, absenteeism, chronic fatigue and accidents, sick building syndrome and repetitive strain injury. Literature Search: Medline, Psych INFO and EMBASE (1996-2000).

In addition to major health difficulties, many of the minor aches and pains caused or worsened by stress include headaches,
backaches, skin rashes, indigestion, fatigue and constipation; stress has even been linked to the common cold. Brown (1984), Cohen, Tyrrell and Smith (1993).

Burnout is a type of job stress experienced by professionals. People who feel burnout have lack of energy and are filled with frustration and tension. Emotional symptoms of burnout include, coming late to the work every day. Behavioural signs may include, criticism toward coworkers, clients and the organization. People who are burned-out, display detachment toward the people with whom they work. Eventually, burned out people may become less efficient through absenteeism, turnover and lower performance. Cords and Dougherty (1993), Praker and Kulik (1995).

Performance has repeatedly been found to decrease with increasing levels of stress. Jamal (1986); Motowidlo, Packard and Manning (1986).

It is found that beyond an optimum level of stress, performance begins to deteriorate. At excessive levels of stress, employees are too agitated, aroused or threatened to perform at their best. Xie J.L. and Johns G. Academy of Management Journal (1995), 38, 1288-1309.

Studies of the performance-stress relationship in organizations often show a strong negative correlation between the

Research studies on the effects of yoga/meditation:

A regular practice of yogic exercises improves the psychological functions of the individual. This is followed by improvement of memory and even of intelligence quotient. Physiologically, the pulse rate, respiratory rate and blood pressure decrease after yogic practice. Biochemically, there occurs a decrease in the circulating acetylcholine levels and slight to moderate increase of catecholamine and cortisol. Serum cholesterol and Blood Sugar levels are decreased along with an increase in Serum Proteins. All these findings suggest that there occurs an overall improvement in the bodily functions possibly due to improvement in the microcirculation leading to more efficient oxygen supply to all the organs and tissues of the body. Because of this, the aging process becomes delayed; it would help a person to maintain a perfect homeostatis of the body and mind.
throughout his life and such persons would be less prone to psychosomatic imbalance resulting usually from stress and strain of life. K. N. Udupa ‘Stress and its management by yoga’ (2000).

British team (1993) measured the effects of three relaxation techniques- chair sitting, visualization and yoga; it is found that yoga resulted in the greatest increase in alertness, mental and physical energy and lust for life.

More recent research in highly reputable professional publications documents revealed a number of Physiological (Jevning 1992), Emotional (Kabat-Zinn 1992), Mental (Dehmonte 1989) changes that takes place during and continue for some time after regular meditation practice. These include,

- Rhythmic and regular breathing rate
- Decreased heart rate
- Reduced breathing rate
- Decreased O₂ consumption and CO₂ production
- Decreased blood lactate (a stress indicator)
- Lower cholesterol levels
- Lower BP (both systolic and diastolic)
- Improved Galvanic Skin Resistance (GSR)
- Improved frontal alpha brain activity
• Reduced levels of anxiety (clinical test scores)
• Reduced depression
• Increased insightfulness (subjective assessment)
• Increased sense of serenity and well-being (subjective assessment)

Each of these changes is in a direction considered to be positive, in regard to physical or mental health. All support claims that meditation provides useful benefits.

Dr. K. C. Khare and Deepak Jain 'Yoga Mimamsa' (Jan 1999) found a significant fall in mean body weight, plasma glucose, serum fructosamine and serum cholesterol due to yoga practice.

In a systematic study on yoga, it is found that positive approach towards life can be considerably improved after proper and intensive training in yoga (0.01 level of significance) where as negative approach towards life can be greatly decreased after proper and intensive yoga training (0.01 level of significance). Marked improvement (0.01 level of significance) is found in the qualities like self-concept, ability to handle crisis in a positive way, proper attitude towards and proper evaluation of other people, development of perseverance and tenacity. Vinod R.S., Vinod S.D., Rajguru M. 'Yoga Mimamsa' (Jan. 1998).
Meditation produces positive changes in the brain. Wisconsin Week (Feb. 2003).

In a small but highly provocative study, a UW-Madison (1978) Research Team has found for the first time that 'mindfulness meditation' produces lasting positive changes in both the brain and the function of the immune system. These findings suggest that meditation promoted as a technique, reduces anxiety and stress and might produce important biological effects that improve a person's resiliency.

Richard Davidson and his Research Team at UW Madison (1978) found that the meditation group showed an increase of activation in the left side part of the frontal region. This suggests that the meditation itself produced more activity and a more positive emotional state. The research team measured electrical activity in the frontal part of the brain, specialized for certain kinds of emotions.

Dr. James Austin, Neurologist, 'Landmark book-Zen and the brain' reported that meditation rewrites the circuitry of the brain. This has been confirmed using sophisticated imaging techniques, which examine the electrical activity of the brain.
Dr. Herbert Benson (1975) of the Mind-Body Medical Institute reports that meditation induces a host of biochemical and physical changes in the body collectively referred to as the ‘relaxation response’. The relaxation response includes changes in metabolism, heart rate, respiration, blood pressure and brain chemistry.

Meditation was shown to affect the human metabolism by lowering the biochemical byproducts of stress such as lactate (lactic acid) and by decreasing heart rate and BP and inducing favorable brain waves. *Scientific American, 226: 84-90 (1972).*

K. N. Udupa (2002) reported that there was an enhancement in the blood levels of neurohumors along with a reduction in plasma cortisol levels among the volunteers after meditation. This possibly indicates a decrease in the psychosomatic stress and improvement in the capacity to do more of intellectual work.

In a study on effect of meditation, it is found that all the participants considered stress relief as an important outcome of meditation practice:

Attitudinal changes referred to by participants related to life in general, to their values, to interpersonal relations and to the situations in daily life. *S. K. Kiran Kumar (2000).*
Udupa and Team (1989, 1996, 2000) conducted studies on normal volunteers, who were made to undertake various types of yogic practices and collected a wealth of information about the effect.

- Certain changes could be observed after three months practice of Shirshasana (head low posture) with regard to BP. Before practice, the mean BP of volunteers was 116/75 mm Hg and came down to 110/74 mm Hg after three months. An increase in the urinary choline and decrease in the non-adrenaline content was also recorded. Simultaneously, there was a marked reduction in hydroxycorticoid excretion. All these findings indicate that Shirshasana is more useful in case of those who are suffering from too much of psychic stress.

- The practice of Sarvangasana reduces BP. Before starting its practice, the mean BP of volunteers was 119/83 mm Hg and at the end of three months of practice, BP was significantly reduced to 108/75 mm Hg.

- Shavasana considerably reduces the over activity of sympathetic nervous system. Thus it can be used as a treatment of hypertension, in which sympathetic nervous system becomes overactive.
• The practice of twelve basic asanas (Shirshasana, Bhujangasana, Mayurasana, Shalabhasana, Sarvangasana, Dhanurasana, Ardha Matsyendrasana, Pashimottasana, Halasana, Matsyasana, Shavasana, Dhanurasana) produced a reduction of acetylcholine, decrease of cholesterol and sugar, an enhancement of endocrine functions: An improvement in the performance and memory quotient at the end of six months of practice has been seen. Psychological improvement, reduction in psychological and physiological complaints was observed.

• Pranayama produces a good effect on all the organs and tissues; and helps in maintaining their effectivity at the optimum level. The EEG studies during Pranayama revealed increased alpha waves throughout the period, which tend to suggest enhanced mental tranquility of the person during the period.

• During one-hour meditation, the EEG recording exhibited increased alpha activity. The changes indicate increased mental tranquility; marked increase was found in acetylcholine levels after 10 days of meditation, changes in catecholamine content was minimal.

• Thus, yogic meditation may be recommended in all stressful states, in all cases with increased sympathetic activity, such
as hypertension and other functional disorders of cardiovascular system.

- In view of these Physiological and Biochemical studies, all these yogic exercises are generally prescribed either individually or collectively, for the treatment of various stress disorders with varying biochemical and neurohumoral disturbances.

The study on Respiration during meditation in ten Zen Monks showed 20% decrease in oxygen consumption and relaxation in output of CO₂ during meditation. Sugī, Akutsu (1968).

The results of the study on Respiration during meditation revealed that during meditation, oxygen consumption decreased in all participants within 5 minutes after beginning the meditation. The mean decrease was about 45 cubic cms. per minute or about 20% decrease in total ventilation, during meditation of about ‘one litre’ per minute was observed. Wallace (1970).

In a study, during Meditation it is found that:

- The practitioner’s lactate level declined precipitously (lactate level in blood is said to be one of the indices of the state of mind of a person. It is diminished during sleep and
in a relaxed state of mind; it is increased when the person is tensed and agitated).

- During the first 10 minutes of meditation, the lactate level in the practitioner's arterial blood decreased at the rate of 10.26 mgs per 100 cubic cms per hour, nearly four times faster than the rate of decrease in people, normally resting in a supine position or in the practitioners themselves during their pre- meditation period.

- The mean level during the meditation period was 11.4 mg per 100 cubic cms, during meditation 8 mg and during post meditation 7.3 mg. *Wallace, Benson and Wilson (1971); Wallace and Benson (1972).*

The main observations on EEG pattern before, during and after meditation, among 48 priests and disciples of Zen Buddhism were-

The appearance of Alpha waves was observed within 50 seconds after the beginning of meditation. The alpha waves continued to appear and their amplitude increased.

The EEG changes could be classified into four stages -

Stage 1 : The appearance of alpha waves.
Stage 2 : An increase of alpha amplitude
Stage 3 : A decrease of alpha frequency
Stage 4: An appearance of rhythmical theta pattern

Kamastu and Hirai (1966).

In a comparative study of EEG of an experienced yogi and a control subject, it was found that after eight minutes, the yogi demonstrated a substantial increase in alpha activity, while the pattern of the resting control remained unchanged. There was no blocking of the meditator's alpha rhythm on the sudden presentation of auditory (external) stimuli. Kamatsu (1957).

It was found in the study on Galvanic Skin Resistance before and after meditation that the GSR increased during meditation with a mean increase of 56% compared with the control periods. When the responses of yoga students were compared, GSR was found to be greater during meditation. Dr. Bagehi, Dr. Wegner (1957).


Asanas (postures), Pranayama (breathing practices intended to influence vital forces), Kriyas (cleaning process), Mudras (certain muscular locks) are taught as physical practices, while various meditational techniques work at the mental level. All these
practices are intended to develop a certain type of awareness within oneself. This in turn is expected to bring about a change in the emotional and visceral functions and through them a change in the intellectual and somatic functions of the individual. Bhole (1977).

Today, Yoga and Meditation are effective ways of stress management. In psychological jargon, they are self-regulation strategies. Self-regulation strategy primarily refers to the ways and means of controlling and directing the activity of a system by itself, which are built in. At physiological level, self-regulation through meditation reduces the activity of the sympathetic nervous system that is crucial in causing stress and tension. It increases the dominance of the para-sympathetic nervous system activity, which enhances relaxation. Shapiro and Giber (1978).

In terms of practical utility, meditation as a technique can be beneficial in and of itself for psychosomatic and psychological problems. Murphy and Danovan (1997); Shapiro and Walsh (1999); West (1987).

Meditation has the potentiality to induce alterations in consciousness, when some believe to be similar to that, which psychodelic drugs bring about. Hence, they are also investigated
as “altered state of consciousness”. Shapiro and Giber (1978); Shapiro (1983).

Investigators have found that meditative practices enhance psychological growth and well-being. They also serve as therapeutic adjuncts both in re-educative and re-constructive therapies, besides serving as a supportive therapy technique. Ali et al (1988); Bogart (1990).

Yoga and meditation techniques are powerful and effective ways to enhance health and well-being Kabat-Zinn (1998).

Beryl Bender Birch (1995) reported, “Yoga is a standard equipment in corporate fitness centres. Employees need time to relax and a lot of people are gravitating towards yoga, as a way to manage stress”.

Records at Stress Reduction Clinic, University of Massachusetts (since 1979) indicates that yoga / meditation can indeed relieve stress and improve work performance.

Elio Zormati, president, Gelula and company, Christine Owens, Coordinator, George Lucas’s Industrial Light and Magic, California emphasized the benefit and utilization of yoga in corporate sector.
Bill Boyle, Employee Health and Fitness Director, HBO, New York states that "The deep breathing and relaxation that employees get from yoga, help them to be more focused and less anxious, when they go back to work, they are in a position to make better decisions".

In companies that introduced the yoga / meditation programmes, managers and employees, who regularly practiced yoga / meditation, improved significantly in overall physical health, mental well-being and vitality, when compared to controlled subjects with similar jobs in the same companies. Psychosomatic Medicine (1984).

According to Indian Psychological Perspectives, regular practice of meditation will lead to reduction in Rajasic qualities (restless, struggling, more desirous, lack of clear discrimination, distorted understanding, egoistic), Tamasic qualities (depressed, lethargic, disintended to work, negligent, undisciplined, arrogant, ignorant, uncertain and dull) and increase of Satvic qualities (discriminative intellect, self-controlled, serene, virtuous, generous, gentle, detached, seeking self and aware of the unity underlying all diversities. Kuppuswamy (1985).
Statement of the Problem:

This is an era of growing complexities and pressures, where human constitution and capacities are being taxed severely. Life in this modern society is complex and often tension filled. The job related stresses have become predominant feature of modern life, affecting employees' behaviours and adjustments on as well as off-the-job. Work consumes a huge portion of the day for many people and for them stress stems from the events in both their personal and work lives.

Certain amount of stress is needed to keep an individual healthy and motivated. The stress response greatly increases energy in emergencies, of course, through fight-or-flight processes, yet chronic stress can deplete energy. Too much and long-term stress may result in severe physiological, emotional or behavioural problems.

This stress can take an excessive form, as one goes higher and higher in the organizational hierarchy. This is particularly true of the people, who are in the higher managerial and executive posts; these people experience work load, time pressures and deadlines as their performance involves, various skills such as - planning, organizing, motivating, decision-making, leadership, communication, energy, managing stress, creativity, tolerance of
uncertainty, managing interpersonal relations and conflict handling etc.

A study on 1065 managers in ten countries, revealed that 55% of them mentioned time pressures, deadlines, work overload, attending meetings and conflicts among work, family and social relationship as stressors. Cooper C. L. and Arbose (1984).

In the study of city managers, "General fatigue and heaviness" have been reported to be the most commonly cited symptoms of distress. Schafer and Gard. (1988).

Many of the Indian studies have shown that Indian managers and executives are also not an exception to the negative effects of stress.

Thus, managerial practices either in India or in any country produce lots of stress and strain to the individual in position. Constant strain or intense stress may damage not only the biological system considerably, but also affects the efficiency in normal dealings of both professional and personal life.

Just trying to avoid stress does not work. Managing stress effectively is very essential. Human personality can develop its capability to absorb higher degrees of stress by elevating its capacity to react to the external stimuli. A calm and composed personality can cope with the stressful situations better and also
can make use of his potentialities to the best than a personality, who is basically turbulent.

The relaxation response helps to restore energy and can provide stress resistance in the face of challenge, change and crisis.

Perhaps, the technique of yoga/meditation is a powerful way to combat the effects of stress. Its regular practice helps an individual politely but firmly to say 'no', to too many burdens and can soon lighten his load.

The medical profession increasingly recognizes yoga, as a valuable aid in helping overcome stress related illness. It is a discipline used to control thoughts, calm the body and achieve a state of heightened awareness, which is associated with creativity, visions and profound relaxation. At the same time, it can reduce muscle tension and can also balance the pulse and BP. It is an excellent way to help an individual, to sleep at the end of the stressful day.

**Herbert Benson (1975)** asserts that 60-90% of illness is brought on by stress. His studies on meditation demonstrate that a few minutes of quiet repetition can manifest tremendous physiological gains.
Thus, Yoga/Meditation has wonderful benefits to offer. It is remedial as well as preventive. Its practice makes life rhythmic and pleasant.

Today, organizational and individual programmes to help managers and employees to cope with stress have become increasingly popular. And they are “Wellness Programmes”.

These are the activities that organizations sponsor to promote good health habits and also to use coping techniques among which yoga is well known to minimize the negative impact of stress.

In companies that introduced the meditation / yoga Programmes, managers and employees who regularly practiced meditation / yoga improved significantly in overall physical health, mental well-being and vitality when compared controlled subjects with similar jobs in the same companies. *Psychosomatic Medicine* (1984).

So, it is very important and of significance to make a rational, systematic study and evaluation of the technique of Yoga and its impact on stress and skills - motivating, decision-making, leadership, management of interpersonal relationship skill and communication skills involved in managerial practices.
Significance and Relevance of the Study:

Life is a journey of stress. Actions that we initiate can lead to stress when backed by a specific desire of our own. Human beings try to get a position in the society through various means and interactions. Result oriented outlook for our business and industry, indeed makes the situation rocky.

Precisely, outward orientation, too much desire, expectations and craving for possessions of things make us vulnerable to stress. It is like making the body conducive, to the quick attacks of the virus or bacteria. Millions of microbes, virus and bacteria are continuously chasing every body. They take that body as their ground for action and growth, where the soil is ready through dilution of the power of configuration.

In the personal domain of an individual, stress is something that is generated and stored in the mind, to have an impelling impact on the personality, to lead to a situation that is worthy of being called a 'de-ranged state of mind'. It is any situation (family, work, society or environment), which finds place in the human mind and gets release through action or contraction, through vehicles of the emotions. Stress may consider healthy under a balanced condition, it refers to positive aspect; whereas unhealthy stress (distress) refers to the negative aspect. It is a
kind of perceived pressure on individuals in organizational context.

In a family or in organization, we are the victims of interplay of demands, constraints and supports. Most of the time, one fails to establish a balance among the trio – the factors, demands, constraints and supports. The hectic activity from day to day makes one's life vibrant. Stress acts as a slow poisoning agent in the person, who fails to bear the burden of workload and / or the mental strain. The effects of stress on an individual (physiological, psychological or behavioural) could be considered as a cause that ultimately affects the organization.

According to Lews, Goodman, Fandt (1995) "Organization is a group of an individuals, who work together toward common goal".

A relatively recent study by Pastonjee (1994) has explained organizational stress as a "Situation, wherein job related factors interact in such a way that the worker experiences a disruption in his psychological and / or physical conditions so that he is forced to deviate from normal functioning".

It is the phenomenon, increases with the rapid industrialization in this techno-commercio-managerial age and thereby, affecting individual's skill efficiency, ability to perform, personal as well as organizational life.
Managers or executives are that part of organization, who work as a bridge between the management and employees. They administer and coordinate resources effectively and efficiently, to get things done through people, to achieve organizational goals. They manage themselves as well as other people.

Managers have a major part to play in deploying their skills, to get individual members of their team to give their best and to make good use of the systems and process provided by the company.

But managers are also the victims of stress, as others do and when it takes negative form, it makes their lives (personal and professional) miserable. Today, executives are often subjected to mental tensions, anxieties, stress, depression and frustrations etc.

It is not uncommon for executives / managers to work 60-hours weekly and to bring work home for evenings and weekends, executives can work at home and while traveling, rarely escaping the demands of the office.

A study of CEOs of major corporations found that extensive organizational commitment and job involvement resulted in, an imbalance in their personal lives and leaving little time for their families. When questioned, 60% said they desired a greater balance between work and family life. Piotrowski and Armstrong (1989).
The healthcare of an individual executive / manager certainly is one of the basic self-imposed requirements, of all progressive and forward-looking organizations. It has been seen that many ailments, from which, executives suffer are not purely physiological but also could be psychological or psychosomatic in nature. They may be rooted in mental tensions, anxieties and stress.

According to WHO definition “Health is a state of complete physical, mental and social well-being and not merely the absence of disease”. It is physical fitness plus well balanced emotions.

It is estimated that 50% of the executives suffer from emotional strain and anxiety, as they have to face various organizational problems.

The management of stress and its effects, like other aspects of an organization's activities, such as production, cost control or quality assurance, need to be effectively introduced, if the aims and objectives of the organization are to be realized.

Persons with stress may easily be provided to anger and may become uncooperative, less efficient in their skills and thereby, unable to maintain the quality of work and personal life.

Good health is related to susceptibility to stress. People in better health conditions, suffer fewer harmful effects from a stressful work environment than do people in poorer health.
conditions. Good health, levels of knowledge, skills and ability to perform the job can make an employee more or less resistant to stress. Employees with high skill levels usually find their work less stress than do employees with lower skill levels. Many companies provide various facilities, to help employees alleviate stress and improve both their physical and mental health.

So, isn't there any way to enable an individual, to manage this stress and its effects? Yes, there is, and that is Yoga. Among several practices, yoga seems to have the potentiality to influence the mechanisms (psycho-neuroendocrinal) in various ways. Being a tool, specific to an individual, it can do a lot for eliminating the effects of stress that is there or likely to be in a future period of time.

The regular practice of yoga provides benefits- strength, energy, improved respiration, blood circulation and digestion; bright and clear eyes, perceptual and verbal clarity, improved concentration, self-confidence, openness, honesty, enthusiasm, integrity, smooth and shining skin, appreciation, better self understanding and gratitude.

Yoga practices not only help in reversing the progress of stress related diseases but also improve the resistance of the body, at the psycho-physiological level. The unique contribution of yoga is that, it directly affects the brain, especially the psychic
centre, from where all the psychosomatic stress disorders are initiated.

According to Edwards Minye, co-founder—Yoga Circle California "Corporate companies are finding yoga, not only helps employees to be productive, it also creates a kinder and gentler work place. This would result, in a positive and healthy work environment; improved individual and organizational effectiveness in a multicultural society like ours, in a changing business environment".

Yoga is a means, for releasing and developing the latent potential of the human body and mind, which when stabilized and harmonized, allows an individual to live deeper, richer, more creative and more satisfying lives. Yoga gives an individual the means and desire to live life fully.

Thus, there is an urgent need to introduce yoga practices for an individual's well being not only in organizations but also throughout the world.
Methodology:

Keeping the wellness of the individual, yoga as a technique of managing stress and promoting individual's well-being in view, the present study is undertaken and attempt has been made to study the impact of yoga practicing on various skills involved in managerial practices.

Variables:

1) Independent Variable-Yoga (SAVPY).

2) Dependent Variables- Managerial Skills
   - Motivating
   - Decision-making
   - Leadership
   - Stress
   - Interpersonal relationship skill
   - Communication

Objectives of the Study:

1) To study the impact of yoga practicing on skills –
   a) Motivating
   b) Decision Making
   c) Leadership Skills involved in managerial practices.

2) To study the impact of yoga practicing on the efficacy of stress management.
3) To study the impact of yoga practicing on the management of interpersonal relationship skill.

4) To study the impact of yoga practicing on communication skills.

**Main Hypotheses:**

The following hypotheses were formulated and tested.

1) There would be significant improvement in the overall efficacy of - a) Motivating b) Decision Making c) Leadership Skills involved in managerial practices after yoga practicing.

2) There would be significant reduction in total occupational stress after yoga practicing.

3) There would be significant difference (indicating an improvement) in the efficacy of interpersonal relationship skill before and after yoga practicing.

4) There would be significant positive change in the effectiveness of communication skill after yoga practicing.

**Subsidiary Hypotheses:**

1) There would be significant difference between male and female managers on total occupational stress.

2) There would be significant difference between male and female managers on overall managerial skills.
3) There would be significant difference between younger managers (in the age group of 28-40 years) and elder managers (in the age group of 41-53 years) on total occupational stress.

4) There would be significant difference between younger managers (in the age group of 28-40 years) and elder managers (in the age group of 41-53 years) on overall managerial skills.

5) There would be positive correlation between the dimensions (Stressors) of OSI and the total occupational stress.

6) There would be positive correlation between the dimensions of MSIQ and overall managerial skills.

**Rationale for the Hypothesis:**

Yoga practicing reduces the level of stress as well as increases the concentration of the individual on the activities and thereby brings into operation the potentialities of the individual and presses them into services, in which the individual is engaged.

Therefore, Yoga practicing would certainly have a positive impact on various skills involved in managerial practices – motivating, decision-making, leadership; stress management, interpersonal relationship skill and communication skill.
Sample Design:

Keeping in view the main objectives of the present study, 60 samples were selected by 'Simple Random Sampling' technique.

There was a random selection of male and female managers and executives (managerial level and above, whose job involves the skills like – decision making, planning, motivating, leadership, stress management, communicating, managing interpersonal relations, organizing, negotiating and conflict handling etc.) from both public and private sector organizations and firms located in the main urban areas of Karnataka State namely Bangalore, Hubli and Dharwad.

The education level of the sample ranged from Bachelor's Degree to Ph.D. They belonged to different occupational areas like Public, Marketing and Sales, HR, Banking, Software and Health. Their age range was 28 yrs to 53 yrs.

The researcher had to make few visits to the respective organizations and firms to prepare the list of the managers who where keenly interested in yoga practice.

Finally, the list of 60 managers was prepared for the research study.
**Research Tools:**

A general proforma was made to record relevant information of the sample group under survey. Along with this, psychological tests were used, which are as follow:

1) Managerial Skills Investigative Questionnaire (MSIQ).

2) Occupational Stress Index (OSI). These tests were used to measure the level of managerial skills and occupational stress.

**Description of Scales:**

1) The Managerial Skills Investigative Questionnaire (MSIQ):

   It is developed by Yasmin D. N. MSIQ is a personal competence assessment instrument for Managers and Executives. (CEO's, Class-1 Officers, Executive Staff). It measures five skills (Motivating, Decision making, Interpersonal relationship, Leadership, Communication) involved in managerial practices. The key design features of the questionnaire are as follow:

   - Each item is a short behavioural statement, which has an obvious relevance to the competence (skill in question).
   - Respondents answer the questionnaire using the five point rating scale - Strongly Agree to Strongly Disagree.
   - Each scale (Skill) consists of 8 items balancing the need to have a good range of items with the desire to produce a relatively short questionnaire (less time consuming).
• All skills are perfectly balanced in terms of positive and negative items.

**Literature Search:**

A wide-ranging literature search was carried out to identify competitive dimensions related to successful management performance. This covered literature on competencies, questionnaires and management textbooks.

**Reliability:**

There are various methods to find reliability but the split-half method was found to be more suitable for determining the reliability of this test (MSIQ). Therefore, the test was split into two halves. The procedures used to dichotomize the test was to separate the scores of odd numbered items and even numbered items. All the items were numbered from 1 to 40. The scores of the odd numbered items and even numbered items were taken and these two scores were correlated. Thus, in each half there were 20 items. The Product Moment Co-efficient of correlation yielded -0.77. Then the Spearman - Brown Formula was applied for obtaining the reliability of the test.
**Validity:**

Another important test of the questionnaire or scale is the validity. Validities are mostly inferred from the reliabilities. Therefore, Guilford (1954) suggested the Intrinsic as the most suitable one.

**Table No. 1 showing the reliability and validity of MSIQ.**

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Validity</th>
<th>'t' Reliability</th>
<th>'t' Validity</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.85</td>
<td>0.92</td>
<td>12.42</td>
<td>17.94</td>
<td>0.001</td>
</tr>
</tbody>
</table>

2) **Occupational Stress Index (OSI):**

It is developed by Dr. A. K. Shrivastava and Dr. A. P. Singh. The OSI purposes to measure the extent of stress, which employees perceive arising from various constituents and conditions of their job. However, 7stress researchers have developed the scales, which measure the stress arising exclusively from job roles (Rizzo, et al 1970; Pareek 1981). The tool may conveniently be administered to the employees of every level operating on context of industries or other non-production organizations. But it would prove more suitable for the employees of supervisory level and above.
**Main Features of the Tool:**

The scale consists of 46 items, each to be rated on the five-point scale. Out of 46 items, 28 are 'true-keyed' and rest 18 are 'false-keyed'. The items relate to almost all relevant components of the job life, which cause stress in some or the other such as role over-load, role ambiguity, role conflict, unreasonable group and political pressure, responsibility for persons, under participation, powerlessness, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions and un-profitability.

**Reliability:**

The reliability index ascertained by split half (odd-even) method and Cronbach's alpha co-efficient for the scale, as a whole, they were found to be 0.935 and 0.90 respectively. The reliability indices of the 12 sub-scales were also computed on the (split half) method.

**Validity:**

The validity of the OSI was determined by computing coefficients of correlation between the scores of OSI and the various measures of job attitudes and job behaviour.

The correlation between the scores on the OSI and the measures of the job anxiety (Srivastava, 1974) was found to be 0.59 (N=400).
**Procedure:**

Present study consists of 60 managers from private and public sector organizations and firms.

The study was split into two parts- Pre and Post Intervention Data Collection.

The test material was distributed to all the samples. They were explained the purpose of the study and general instructions were given. Continuous assistance was given to the subjects to complete the tests. All doubts of the subjects were dealt with. Finally, the data was collected from the subjects.

With one-week early notice, interested managers were assembled in conference hall of respective companies for the yoga program. Kits consisting -Brochures on stress, yoga and its benefits; programme schedule, pen and papers to write notes were given to all the participants. The schedule of the yoga programme was as follows:

- Brief introduction by the researcher about the study and its benefits.
- Informal talk with the participants by the guide Dr. A. A. Pal (Yoga expert) to have an idea of the group.
- Explanation of stress, yoga and its benefits by using OHP.
• Demonstration of yoga technique- Along with the yoga expert all the participants were made to practice the technique by following the instructions of the expert.

• Interaction – To clarify the doubts.

During the period of two months of yoga intervention, follow-ups were given as and when necessary, even through telecommunication and emails.

After the completion of intervention period, post data collection was done.

Researcher then got the scoring from the data collected and subjected the same for statistical analysis.

**Analysis of Data :**

Keeping in view the objectives and hypotheses stated for the study, the data were processed with the following statistical methods:

1) Mean and SD

2) Pre and post scores were compared by students paired ‘t’ test.

3) Co-efficient of correlations were obtained by using Karl-pearson’s correlation (Product moment) technique.
4) Male and female subjects were compared in pre and post scores separately by using Students unpaired 't' test.

5) Two age groups were compared in pre and post scores separately by using Students unpaired 't' test.