Chapter Three

The Review of Related Literature
Volumes have been published on the topic of "stress" in recent years. In the 1980's the number of publications on this topic were estimated to be 20,000 and since then it must have got tripled.

It has been observed by sociologists that industrialisation and urbanisation leads to a complex existence and divided functioning whereby individuals feel that they can no longer have complete control over what happens in their lives.

As organisations become more complex, the experience of stress increases and it feels as if there is no escape from a disproportionate frustration, which is linked with helplessness due to lack of control over what is happening. At times the human element is reduced to a mere insignificant aspect of feeling powerlessness, meaninglessness, and low self-importance.

This Chapter presents a detailed review of the related research in the field of stress and it has been organised to discuss the relevance of such studies with the present study. The different studies reviewed are from the following areas:

A. Stress at Educational Institutions
B. Stress and Personality
C. Stress and Coping
The fundamental and hardcore work on “stress” was conducted by many and some of the important studies are mentioned below:

Caplan, French, and Harrison (1975) in their book “Mechanics of job stress and strain” have mentioned about a theoretical model of stress and strain developed by them with a sample of 2010 blue and white collar workers from different work situations. Variables such as environmental demands, perceived job demands, knowledge, skill, needs and physiological aspects were used for the study. They created a model, which stated the effect of stressful job environment. This study had a major focus on perceptual differences experienced by the individual and thus emphasises stress as a perceptual phenomenon.

Cooper, and Davidson (1982) with a sample of 60 women managers in the category of senior (15), middle (20), junior (14) and supervisors (11), studied the source of stress in relation to health and personality variables and compared them with male managers. A model for occupational stress in female managers was developed which focused on
work area, house and social areas. It also brought out the outcomes in relation to psychosomatic issues and work performance due to stress.

Levi (1972) stated that the main stressors at work are the quantitative overload, qualitative under load, role conflict, lack of control over one's own situation, lack of social support, highly automated work process, physical structure – odours, glare, noise, extreme air temperatures, humidity.

Wolff and Finestone (1986), in their book "Occupational Stress. Health and Performance at Work" have elaborated a detailed picture of origin of studies on occupational stress in medical sciences. They have discussed common disorders due to stress along with prevention and management of stress.

Mackay and Cox (1978) edited a collection of papers presented at Ergonomics Society's Conference on "Psychophysiological Responses to Occupational Stress" at the University of Nottingham. The various papers focusing on different occupations and different stressors were discussed in the book.

Cooper and Robertson (1979) have presented a model related to occupational stress describing relationship between various factors ranging from personality to social factors. The model is described in the following flowchart:
Flow - Chart 3.1: Indicates the model described by Cooper and Robertson's on Occupational Stress. 1979
These studies have contributed to develop the fundamentals of “stress”... while the studies mentioned in the following text elaborate on recent development of literature in the field of stress.

3.1 Studies in the field of Education:

A psychological test conducted in 1982 among Japanese teachers indicated that about 40 per cent suffered from mental health problem such as frequent headaches, depression and constant feeling of anxiety. The test also showed that younger teachers and female teachers had more serious problems (The Japan Times. 28 Aug 1983).

A British study on stress among teachers (Bratt. 1978) has found that at least 20% of 1800 teachers interviewed suffered from levels of anxiety, depression and stress equivalent to or more than that of mental health out-patients. Of the teachers questioned, 86% had considered leaving the profession in the past five years. 28% were actively looking for alternative employment and 13% were seeking early retirement. Levels of drinking and smoking were well above the average national level. A significant number of teachers reported heavy workload, which was quoted as the main cause of job dissatisfaction. Other reasons were the lack of opportunity to use their abilities, hours of work, physical working conditions, individual relationships, lack of recognition for good work, poor management of schools, lack of chances for promotions.
Holley and Kirkpatrick in 1987 conducted a study on “Job Satisfaction and Stress of Home Economics Teachers”. They took a sample of 720 teachers and measured their job satisfaction (Minnesota Satisfaction Questionnaire, 1967) and teacher-stress (NYSUT, survey on Teacher stress). It was found that there was a significant correlation between job satisfaction and stress.

Littrell, Billingsley, and Cross. (1994) in their study on “The Effect of Principal Support on Special and General Educators” viewed stress, job satisfaction, school commitment, health and intent to stay in teaching on a sample of 613 teachers (201 dealing with students with emotional disturbance, 206 dealing with students with learning disabilities, 206 teachers of students with mental disorders). The main findings were:

- The teachers who experienced higher levels of support from their principals, experienced more job satisfaction, were less likely to experience personal health problems and school commitment was high.
- They emphasised a need for emotional support from their principals.
- Most principals do offer support to their teachers but it may not be the kind of support that the teachers believe to be important.

In 1971, Riffel studied the organisational role stress and burnout syndrome among Directors of Special Education in Kansas with a sample of 95 Directors of Special Education and found that there was a significant relationship between Special Education Director’s perceptions of organisational role stress and feeling of being burnout.
In India, Joshi and Singhvi (1997) with a sample of 167 teachers from arts and science colleges tried to measure role stress, burnout, locus of control, personality dimension, and Machiavellianism. The findings were indicative of role stress and correlation with several other factors. Mishra, (1986) in his study on the teachers of Secondary Schools in Calcutta found that the meaninglessness in lives of teachers was very high. gender difference was significant on burnout scale.

Paratkar (1993) with a sample of 250 teachers (from primary, secondary, junior college and senior college) measured teaching professional levels, attitude, self – esteem (Heise, 1969). locus of control (Roma Pal. 1983). job involvement (Kapoor and A. Singh). organisational atmosphere (Indireson, 1975) with dependent variables – role stress (ORS. Pareek. 1983) and found that the degree of role stress varies with the levels of teaching.

It was found to be highest at the middle level i.e. secondary level. Role overload was found to be the highest factor at the middle level. Sex and marital status have no effect on the role stress. Also, overall locus of control was found statistically insignificant in relation with role stress. The organisational climate was found to have a close relationship with the role stress.
Sahu and Misra (1995) with a sample of 240 teachers in various colleges of Lucknow found that males experience greater stress in work and social areas, females experience more stress in family area. There was no significant difference between the coping styles used by males and females, and the work related stress was negatively related to problem-focused coping in males, but not in females.

‘An Investigation into the Causes of Stress for School Teachers and Suggested Method to Handle Stress’ by Vas (1994) with a sample of 1000 teachers from primary and secondary sections of 50 secondary school of Greater Bombay, with variables like teacher performance (self-assessment, student assessment, principal’s assessment), neuroticism (NSQ, Scheier and Cattle, 1961), found that the teachers are affected by a number of stress factors. The problems within staff causes highest incidence of stress.

Overall, the above mentioned studies in the field of education are indicative that except for Riffel (1971), where he studied the stress among the directors of special education, all the others studies were conducted on teachers.

It is also evident that the researchers have studied variables ranging from the demographic data such as age, gender, marital status along with neuroticism, mental health and physical symptoms, role stress, organisational climate, burn-out, job satisfaction, coping styles.
personality variables such as self esteem and locus of control to other variables.

3.2. Studies on Stress and Personality:

A number of personality variables are used in various stress-related studies. The review revealed that there is a repeated use of specific personality variables such as type A, hardiness, trait anxiety and locus of control.

Dua (1992) in the study on 'occupational stress, health and stress moderators' with a sample of more than 1000 Academic and non-academic staff working at University of New England in Australia, measured job stress, general stress (Nowack, 1990), physical health (adaptation of Greenberg's questionnaire), emotional health and stress moderators (type A, hardiness, coping strategy). It was found that hardiness, social support and type A behaviour were the three main predictors of physical or emotional health and non-work stress. Hardiness was the best predictor of health.

In 1992, Mittal and Uma (quoted, ed: Pestonlee, 1997) with a sample of 147 doctors, studied role stress, type A, locus of control and coping styles. They found that personality type A was significantly and positively related to total score of stress. The locus of control was found to be significantly and positively associated to the dimension of self-role distance, role ambiguity and role expectations conflict. Type A
personality led to a positive relationship between role stress and approach style of coping.

Pestonjee (1989) with a sample of top managers (21), middle managers (326) and IAS officers (77), measured role stress, type A, and state - trait anger. A significant correlation was found between role stress and type A behaviour and also state-trait anxiety.

Rush, Schoel and Bernard (1995) examined the effect of pressures for change in the public sector with hardiness and its impact on experience of stress. It was found that psychological hardiness had a direct negative impact on stress and a direct positive impact on satisfaction.

Spector and O’Connell (1994) found that all job stressors and job strains were predicted by at least one personality variable. The locus of control was more strongly related to job satisfaction. Type A behavioural pattern with achievement - striving was correlated significantly with more job stressors.

Srivastava and Sinha (1983) viewed that perceived role stress of the managerial personnel was a function of their ego strength and job involvement. Employees with higher ego strength and high self - esteem experienced mild stress arising from role overload, role ambiguity and role conflict as compared to those possessing moderate or low self - esteem. They also found that high ego strength enables employees to
cope effectively with excessive demands and conflicting expectations imposed by job stress.

In addition to the personality variables mentioned in the above text, some personality factors - especially the ones that were developed by Myers and Briggs, namely, introversion/extroversion, sensation/intuition, feeling/thinking, and judging/perceiving were incorporated in the present study.

3.3 Studies in the field Stress and Coping Strategies:
There are many studies on coping strategies, however only a few studies have been cited here that focus purely on the different coping strategies used while handling stress. Carver, Scheier, and Weintraub from University of Miami (1989) reviewed the existing measures of coping and developed a comprehensive measure of coping strategies. The researchers proposed an instrument incorporating fourteen conceptually distinct scales. Several of them were based on specific theoretical arguments about functional and potentially functional properties of coping strategies.

With 978 undergraduates the 52 item inventory called COPE was tested. The range of coping strategies were Active coping, Planning, Suppression of competing activity, Restraint coping, Seeking social support for instrumental reasons, Seeking social support for emotional reasons, Positive reinterpretation and growth, Acceptance, Turning to religion.
Focus on and venting of emotions. Denial, Behavioural disengagement. Mental disengagement. Alcohol / drug disengagement. This was followed by administration of COPE with variety of personality measures such as optimism – pessimism, self – esteem, locus of control, hardiness, Type A and trait anxiety.

Dewe (1991) studied a sample of 144 respondents from an Insurance Company and measured primary appraisal, secondary appraisal (Folkman, Lazarus et al. 1980), coping strategy (Dewe and Guest, 1998), and emotional discomfort (Miles, 1975 and Grubb, 1975 and Guest, Williams and Dewe, 1979). He found that there is a significant relationship between primary appraisal, coping and emotional discomfort. Tentative support for the mediating role of secondary appraisal was present.


- Coping styles Vs Coping behaviour – whereby they referred to coping styles being consistent and stable preferences for a particular stressful situation and coping behaviour as responses which individuals actually make in a stressful situation.

- Specificity of coping – need for specific coping styles in relation to a specific occupation, e.g. doctors coping with death of their patients.
Deductive Vs Inductive generation of measures – whereby an inductive approach will bring about actual style which can be categorised further.

They mentioned that information collected in this manner does not make any assumption on the person’s responses and therefore it has more likelihood of being ecologically valid.

Focus on specific coping Vs global coping is the need of today’s research.

Predetermined Vs elicited stressors – to study the perception of potential stressors as self-reported instead of studying predetermined stressors such as role demands, human resource management, job conflict and so on.

Koeske, Kirk and Koeske (1993) found that control oriented coping strategies were commonly used. Lepore, Evans and Schneider (1991) studied 173 college students to measure household crowding, perceived social support and psychological distress. They found that crowding was a significant predictor of positive (higher) increases in levels of psychological distress.

Pareek (1988) developed Role Pics based on projective technique (some of which has been adapted from Rosenweig’s coping styles) whereby he stated eight possible coping strategies. based on 1) Externality - the feeling that external factors are responsible for stress and 2) Internality - the feeling that the respondent is himself responsible for stress.
All the above mentioned studies are indicative of a variety of ways in which one can study coping mechanisms. It has been proved that coping is correlated to personality type as well as organisational role stress.

### 3.4 Studies on External Environmental Factors and the Life Style:

Today, medical science is moving towards a holistic approach. There is much more emphasis on educational approach for better life style than prescription of medicines. It is a well-known fact that socio-economic status and educational status plays an important role in the health status.

Steff, Jones and Noe (1990) studied the impact of health habits and life-style on the stress-strain relationship with a sample of 3337 employees. Their main findings were that life-style and health habits have a strong negative effect on strain outcomes. Life style was consistently related to lower levels of job tension, job dissatisfaction and psychosomatic distress. The relationship between disease and stress faced by an individual has been well established.

Green (1991) in their article “Introduction to health Education”, elaborated on the importance of health status and its correlation with stress experienced by an individual, his health status, life-style, education, family background, financial position, and other similar variables. This article emphasises on interrelationship between life style, environment and health status. The authors mentioned that education
is the pivotal variable in mediating all the relationships. The model is represented as follows:

Flow - Chart 3.2: Indicates the model proposed by Green (1991) on lifestyle and health
According to Griffiths (1998) the largest categories of self-reported work-related illness affecting 57% of people that were responsible for the loss of 11 million working days were musculoskeletal conditions (as reported by a study conducted in Great Britain, 1995). Teachers and the nurses were the worst affected group in relation to stress, anxiety and depression. In most cases of stress, anxiety and depression were observed in the age group of 45 to retirement age.

Laxminarayan and Prabhakaran (1993) conducted a comparison of 'Mental Health among Different Age Groups of Industrial Employees' with a sample of 128 employees of industry - Hindustan photo Films Manufacturing Co. Ltd. Ooty. The variables measured were mental health (GHQ, Goldberg 1972) and personal data (Personal Data Sheet). They found that subjects in the age groups of 20-30 years have poor mental health. However, as their age advances their mental health improves and again after 50 years it declines.

Monika from the department of Neuropsychiatry, Oska Rosai Hospital, Japan, in January 1996 carried out an experiment on middle aged executives. Neurotic symptoms were considered to be present in 21.9% of the 210 employees of a company. Somatic symptoms, anxiety and insomnia and social dysfunction were higher in executives than in non-executives.
Sparks and Cooper, Fried and Shirom (1997) carried out a study on the hours of work and its effect on health. They found that there was a small but significant positive correlation between overall health symptoms, both physiological and psychological, and hours of work.

In his book “Administrative office management : An introduction” Quible (1992) says that the minimum space required for a top level is in the range of 425 Sq Feet. The Space Guidelines given by him are as follows for different categories:

<table>
<thead>
<tr>
<th>Job Categories</th>
<th>Space Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top - levels executive</td>
<td>425 Sq. feet</td>
</tr>
<tr>
<td>Middle – level executives</td>
<td>350 Sq. feet</td>
</tr>
<tr>
<td>Supervisors</td>
<td>200 Sq. feet</td>
</tr>
<tr>
<td>Office employee</td>
<td>75 – 100 Sq. feet</td>
</tr>
<tr>
<td>Modular worker</td>
<td>100 Sq. feet</td>
</tr>
</tbody>
</table>

**General Space requirement**

<table>
<thead>
<tr>
<th>Conference room</th>
<th>25 Sq. feet per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception room</td>
<td>35 Sq. feet per person</td>
</tr>
<tr>
<td>Main corridor</td>
<td>6 – 8 feet wide</td>
</tr>
<tr>
<td>Secondary corridor</td>
<td>4 – 5 feet wide</td>
</tr>
<tr>
<td>Cross aisle</td>
<td>3 - 4 feet wide</td>
</tr>
</tbody>
</table>

The other interesting parameter of individual output is environmental conditions in relation to temperature fluctuations. Man’s thermoregulation is a complex system of automatic and voluntary response, which governs the rate of heat loss from the body and in some cases heat production as well. Air and light also have been found to have profound effect on the performance of an individual.
The above mentioned studies and literature signify the relation between external environment, life style and stress experienced by individuals. Monica (1996) suggested that age 40 and above is a significant aspect whereas, according to Laxminarayan (1993), age between 20 – 30 showed poor mental – health. As it advances, health improves and again declines after 50 years of age. Working hours, working space and working conditions, noise, temperature and other similar environmental conditions seem to have an effect on the health status of an individual.

3.5 Stress and Disease:

Indian researchers have almost exhausted all the fields in the area of disease and there is a vast literature available on stress and diseases.

**Stress and cancer:** Chansouria, Khatri and Udupa, 1977 carried out a study on 18 and 7 cases each of carcinoma and sarcoma type of cancer. They studied the psychological aspects and performed biological analysis of blood and diseased tissue. They found that cancer cases were positively linked with psycho – social stress and that malignancies exhibit elevated circulating levels of catecholamines, cortisol, acetylecholine and histamine.

**Psychosexual diseases and stress:** Chaudhari (1977), studied a sample of patients complaining of amenorrhoea and found that stress related to over work, anxiety, change in dwelling or occupation and confinement were prime factors responsible for such a disorder. Whereas, Kobayashi
and Yaginuma, 1977 stated that amenorrhoea may be caused by dysfunction of hormonal release in the cyclic centre of hypothalamus which in turn happens due to psychological reasons.

**Gastric ulcers and stress:** Ahmad and Rao (1977), proved that starvation stress with increased adrenocortical secretion enhances the initiation and formation of gastric ulcers. Varma, Singh, Gupta and Udupa (1977), found that compared to normal control, ulcer patients (peptic) show an increased blood level of acetylcholine, catecholamines, histamine and plasma cortisol.

**Bronchial Asthma and stress:** Jha, Udupa and Kumar (1977) studied a sample of 25 patients of bronchial asthma while they were experiencing an acute attack and found that there was a correlation between asthma attacks and the stress experienced by the patients.

**Anxiety neurosis and stress:** Rai, Singh and Udupa (1977), studied the psychosomatic basis of anxiety neurosis in neurotic subject and discovered that levels of plasma adrenaline, nor-adrenaline, cortisol, acetylcholine and urinary adrenaline had increased whereas the levels of RBC cholinesterase had decreased as compared to normal. Kumar, Chandel, Singh and Pant (1977) found that stress caused diseases such as thyrotoxicosis, hypertension, peptic ulcers, ulcerative colitis, bronchial asthma, rheumatoid arthritis and coronary heart diseases.
A number of studies have been conducted in the area of endocrine functions and stress. External factors such as diet, pollution and social factors are also of common interest to many researchers. Several studies on drug prescription for management of stress are also available in the literature. These studies indicate a strong relation between stress and disease.

3.6 Studies on Stress and Physiology:

Spielberger and Sarason (1978) stated that stress could be both a stimulant to growth and development and a major factor in the aetiology of a variety of physical and emotional disorders. In relation to this - a phase of research that followed the 1970s, predominately used new biochemical methods of analysis, with the acceptance of the viewpoint that stress was a non-specific response to a demand that the organism resists. Selye's elicitation of the role of catecholamines, chiefly epinephrine and nor-epinephrine and the major gluco-corticoid category i.e. the 17-ketosteroids in stress was the main focus of attention in many studies that followed Selye's research work. This phase was chiefly characterised by the work of experts like Bemett (1958), Mason (1956,68) and Brandy (1956) among others. The most recent phase in stress research follows the development of new techniques with very high sensitivities like histochemistry and radioimmuno assay, which made it possible to test hormones in even micromolar amount in various tissues.
Kak (1981) in his book about 'Physiological Assessment Device' mentioned about various tests that one could use to validate stress in an individual. He mentioned that excess heart rate and stress are related whereas, Heart Rate Variability (HRV) is an indicator of the cardiac autonomic control. Two components are usually recorded viz. high frequency (0.15 - 0.50 Hz), which is due to vagal efferent activity and a low frequency component (.05 - 0.15 Hz.), due to sympathetic activity. Though there is not a good underlying theory to connect changes in skin conductivity, the Galvanic Skin Resistance (GSR) reflects that resistance decreases causing sweating especially Palmar sweating. Thus, concept validity of GSR is good with empirical validity, but sweating could be also because of heat as a stressor rather than any other stressor.

It has been proven that blood pressure is a popular and effective indicator of stress. There is a good physiological theory to give this concept a validity – which is based on blood pressure changes related to pituitary and adrenal hormone secretion during stress. Hand – Grip Test (Isometric exercise) has been recommended by many as a stress test.

For various psychological and physiological stress conditions, increased levels of plasma cortisol in individuals have been reported in many studies. On the other hand, decrease in blood pressure and plasma levels of several hormones including cortisol and aldosterone and renin activity have been reported in association with repeated brief exposure to
a sensory restricted environment. Some of the studies quoted here are performed on samples ranging from rats to human beings. These studies are an indication of stress and its manifestation into physiological reactions.

Burchfield Susan (1985) in her book “Psychological and Physiological Interactions” proposed a model of stress responses based on learning predictive and consequential cues. The model states that the organism learns as to which environmental stimuli precede stressor onset, thereby enabling them to initiate their physiological stress response before the stressor actually occurs. They then modulate their physiological reactivity to achieve adequate defence against the stressor, without overtaxing the system or creating too many imbalances. Overall, these information indicated that the hormonal system is conditioned to cues predictive of stress.

Contrada (1989) studied type A behaviour, personality hardiness and cardiovascular responses to stress with a sample of 68 male introductory psychology students. He measured type A behaviour (Interview technique by Rosenman), hardiness (five questionnaires as described by Kobassa, 1982), cardiovascular responses, experimental task (mirror – tracing with star tracing task) and affective measures (Spilberger’s trait anxiety Inventory, 1983). His main findings were that type A assessment showed enhanced systolic and diastolic blood pressure on the performance of the task. Whereas, the hardiness index indicated that
diastolic blood pressure responses were lower among the subjects high on hardiness.

Selvamurthy, et al (1997) from the Defence Institute of Physiology and Allied Sciences, New Delhi, have conducted various research studies on Indian Army personnel. Through various physiological testing – before and after yoga – he has proved that yogic exercises help in prevention and management of stress. Parameters used for their studies ranged from physiological testing such as heart rate, pulmonary ventilation, oxygen consumption, oxygen pulse, ventilatory equivalence to biochemical testing such as blood glucose, blood cholesterol, protein, lactic protein, dopamine B, hydroxylase, plasma cholinesterase, 17 – ketosteroid, (urine), 17 - hydroxysteroids (urine) and monoamine oxidase. He and his colleague have proved that yoga has a positive effect on handling stress.

Jayprakash, Ramakrishnan, Murthy et al (1997) NIMHANS, studied the Heart Rate Variability (HRV) parameters and they were compared in 20 neurologically asymptomatic alcoholics, 20 age - matched normals and 16 depressives. ECG was recorded in a quiet room for four minutes in a supine position. Time and frequency parameters of HRV were computed by a researcher unaware of clinical details. Alcoholics had significantly smaller coefficient of variation of R - R intervals on time domain analysis and smaller HF band (0.15 – 0.5 Hz) power on spectral analysis.
Malathi and Parulekar (1996) used pulse rate, blood pressure, auditory reaction time (ART), GSR, and eosinophil count (EC) to measure stress prior to examination. The readings were taken 2 months before and 20 mins before the examination. A statistically significant increase was seen in the heart rate (HR) and blood pressure (BP) while significant decrease was obtained in ART, GSR and EC before the examination.

Raghuraj, Ramakrishnan, Nagendra and Shirleys (1998), conducted a study on twelve male volunteers (age range 21 to 33 yrs). They were assessed before and after each practice of sympathetic activity stimulating exercises (kapalbhati, breathing at high frequency i.e.. 2.0 Hz) and sympathetic activity reducing exercise (nadishuddhi, alternate nostril breathing) - on separate days. The electrocardiogram was digitised and on-line and off-line analysis was done. The result showed significant increase in low frequency (LF) power and LF/HF ratio while high frequency power was significantly lower following kapalbhati. There were no significant changes following nadishuddhi. The result suggest that kapalbhati modifies the autonomic status by increasing sympathetic activity with reduced vagal activity. The study also suggested that Heart Rate Variability is a more useful psychophysiological measure than heart rate alone.

A number of physiological and biochemical tests have been suggested and used by a number of researchers. Some of them are mentioned
here. The studies that used physiological and biochemical measures were more objective than the one purely using behavioural checklists or using only self reported data. Therefore, for the present study, both psychological as well as physiological variables of testing and data collection were selected.

3.7 Studies on Stress at the Organisation:

The recent review of literature that examines the correlates of work-stress emphasise on studies of variables such as:

- Organisational commitment (Porter, 1968)
- Role related variables (Kahn, 1964 and Hall & Lawler, 1970)
- Personality related variables: Workaholic (McLean, 1979), Type A, hardiness, trait anxiety, and so on.

Different factors have been identified at the work place and they are further categorised as external and internal factors causing stress.

Internal Factors: The factors inherent to internal aspects of the individual, such as individual's personality – which is reflected in perception, interpretation of work conditions, work relations, non – work factors: needs; tolerance for ambiguity; self – esteem and competence.

External Factors: The factors which are inherent in the environment such as physical noise, pollution, climate of the organisation and organisational structure, intrinsic factors of job such as – role, career plan and relationships at work.
A number of manuals and stress assessment tests have been developed. A practical guide “Stress at the Workplace” has been developed by the Canadian Institute of Stress for Industrial Accident Prevention Association of Ontario, with the objective of helping individuals and the workforce to recognise the signs. This indicates that stress is becoming a health and safety hazard in personal life and at work. Symptoms identified are – physical, behavioural, mental and emotional signals.

- Dry throat and mouth, muscle tension, headaches, indigestion, tics, insomnia, high blood pressure.
- Irritability, impulsive behaviour, difficulty in making decisions, sudden increase in smoking, drinking.
- Excessive worrying, feeling of worthlessness, brooding, forgetfulness, easily startled, day-dreaming.

Encyclopaedia of Occupational Health and Safety Volume I, fourth edition, ILO, Geneva, 1998 says “In India, there is an urgent need for a Health and Safety act. Failing to address these issues, will lead to incalculable morbidity and absenteeism, as a consequence of work-related health problems”.

An enormous amount of work seems to be carried out in the field of occupational and organisational role stress. The main finding in relation to role stress is that it has a negative correlation with job satisfaction, morale, job management, personal adjustment, social relations, etc. Some of the studies have also reported a relationship with demographic
variables family system, gender, marital status, age, length of service, status, and other similar factors.

Harigopal (1979) showed that job-related tension and job satisfaction have significant inverse relationship across different job levels (quoted in Ed: Pestonjee, 1997). He and Ravikumar (1978, 79) observed that role ambiguity is positively related to perceived deficiency of social and self-actualisation needs, but it is negatively related to job involvement and intrinsic motivation and there is negative correlation between satisfaction, role ambiguity and role conflict.

In their comprehensive manual, Josi, Rizzo and Carroll (1998) reported that there are many stressors due to occupational factors that have a psychological demand such as the level of decision making and its resultant control over work, role pressure, participative opportunity in decision making, responsibility of people, organisational levels, boundaries, climate and other complexities.

Mehta (1978) concluded that life satisfaction promotes a positive response to the work situation. Narayanan and Venkatâchalam (1979) found that organisational stress and motivation is negatively correlated. Kumar (1981) highlighted the harmful consequences of stressors like divergent objectives of the individual and the organisations, lack of communication, general socio-political and economical environment and the poor interpersonal relationships. Srivastava and Krishna (1981),
demonstrated that high job related anxiety is associated with lower satisfactory social relations and adjustments.

Sharma (1987) highlighted severe physiological, psychological and behavioural consequences of managerial stress. Das (1991) reported that the work group climate is an important cause of managerial stress and perceived power is the second most potent cause. Pestonjee and Singh (1982) found that the overall indices of role stress are negatively associated with all dimensions of job satisfaction; self-role distance had a significant negative correlation with all the dimensions of job satisfaction. Sharma and Sharma (1983), reported that role efficacy has a negative relationship with general and job anxiety measures.

The relevant studies on role stress are cited below:

A study was conducted by Ahmad, Bhardwaj and Narula (1985) on 30 executives from public sector and 30 executives from private sector. They measured role stress (ORS Scale, Pareek, 1994) and found that out of 10 dimensions of role stress, significant differences were obtained in three dimensions, namely, Role Isolation, Role Ambiguity and Self-Role Distance. It was also seen that public sector executives experience slightly more stress than their counterpart in the private sectors.

Beehr and Gupta (1976) measured role stress and coping style and found that role conflict and role ambiguity are related to withdrawal strategies. Bhatnagar and Bose (1985) used a measure of leadership styles (LEAD
Hersey and Blanchard (1972) along with role stress (ORS Scale, 1983). Their findings showed that the branch managers scored lower on Role Ambiguity, Self - Role Distance and Role Stagnation indicating that respondents do not experience major stress in these areas. Three role stresses – namely, Role Erosion, Inter - Role Distance and Role Isolation were found to be dominant. There was no significant association between age and role stress variables.

Balachandar and Anatharaman (1996) in their study on 126 Junior and middle level executives from a manufacturing concern measured Organisational role stress (ORS by Pareek, 1983), Index of affective scale (French et al. 1982), job attitude (Job Attitude Scale, Balaji, 1984) and organisational commitment (Organisational Commitment Questionnaire, Mowday et al. 1979). The results have supported the following model:

Flow - Chart 3.3 : Indicates model proposed by Balachandar and Anatharaman (1996)
Chaudhary (1990) in a study conducted on bank officers (100) of two age groups (higher age group - above 35 years and lower age - below 35 years of age) measured role stress (ORS Scale, 1983) and job satisfaction (Satisfaction - Dissatisfaction Employee's Inventory, Pestonjee, 1982). The findings showed that Role Erosion causes maximum stress whereas Role Ambiguity is the cause of least stress among bank officers. The two age groups did not differ on role stress dimensions. The overall indices of role stress and job satisfaction were found to be negatively correlated in higher as well as lower age groups of bank officers.

According to the study conducted by Dhadda (1990), on 50 railway and 50 aviation officers Role Overload causes maximum stress among railway officials and Role Ambiguity causes least, whereas among aviation officials Role Erosion causes maximum stress and Role Overload minimum. The relationship between job involvement and role stress amongst officials with type – B personality was found to be positively significant.

Dwivedi (1989) found that there was a significant negative relationship between most of the ORS measures and pay, followed by age, experience, education and leader effectiveness. Fullan, Park and William (1987) conducted a study on a sample of 26 boards from total population of 113 school board with a sample of 224 supervisory officers measuring role stress (ORS, Pareek 1993). They found that business officers and assistant directors tend to record lower levels of overall stress than do
other supervisory officers. Inter - Role Distance was the highest stress factor.

Gupta (1988) with a sample of executives (50) of Irrigation Design Organisation, Roorke measured role stress (ORS Scale) and Coping strategies (Role Pics). They found that Role Erosion was experienced by a higher number of executives (80%), followed by Role Inadequacy (78%), Role Stagnation (74%), Self Role Distance (60%), Personal Inadequacy (65.5%), Role Isolation (62.2%) and Role Expectation Conflict (44%).

Khanna (1985) measured organisational role stress (ORS), organisational climate (MAO - C. Pareek. 1989), organisational effectiveness (OEQ, Daftaur, 1984) on 392 executives from five different departments. The main findings were that role stress of the organisation was fairly low whereas motivational climate was average and organisational effectiveness was high. Junior level managers experienced higher role stress than their counterparts at senior levels. Role erosion was found to be a significant contributor of role stress. Low role ambiguity correlated with high job satisfaction.

According to the study conducted by Kumar (1989), unmarried executives experienced significantly higher total stress as compared to married executives. Executives married to working women were observed to experience more stress as compared to those married to house - wives. Role Stagnation, Personal Inadequacy and Self - Role
Distance were found to be significantly higher among lower level executives. Marketing executives experienced maximum role stress while personnel executives obtained lowest score on total role stress.

Luhadia (1991) found that role inadequacy caused the maximum stress in higher level and Role Erosion caused maximum stress in middle level and junior level officers. The higher the stress the lower is the job satisfaction among different levels of managers.

Mittal (1988) with a sample of Government doctors (50) and university lecturers (50) from Rajasthan University found that perceived need satisfaction was negatively correlated to role stress. Doctors experience more role stress than lectures. Female doctors and female lecturers experience more role stress than male doctors and male lecturers. Self – Role Distance appeared to be responsible for the low satisfaction of needs of doctors and male lecturers. Role Stagnation seems to affect doctors’ need but not that of lecturers. Role Ambiguity equally affects needs of both the doctors and lecturers.

Nath (1988) found that high role stress correlated with less job involvement. High and low scoring groups on these role stress variables were reported to differ significantly with regards to job involvement. Role stress variables were found to be inversely associated with job involvement.
Pandey (1994) stated that the three levels of hierarchy in bank officers differed significantly in terms of Role Stagnation and Role Overload. Role Erosion was found as a dominant role stress in all the three hierarchy levels. Extroversion – introversion and lie dimension of personality were found associated with most of role stresses. Achievement, expert influence and extension motivational climates were found negatively and significantly associated with organisational role stress factors, whereas control, dependency and affiliation motivational climates were found positively associated with ORS factors.

According to the study conducted by Pestonjee and Singh (1987) on 102 personnel, the self - role distance exerted a negative influence on job satisfaction and Inter - Role Distance adversely affected job satisfaction and morale. Role Ambiguity, Role Erosion, Role Isolation, and over all role stress had a detrimental effect on all aspects of job satisfaction and morale.

Rajagopalan and Khandelwal (1988) found that total role stress had positive correlation (0.28) with avoidance and negative correlation (0.29) with approach coping style, both significant at 0.001 level. Sahgal (1990) in a study on 222 executives from senior, middle and junior levels found that Role Erosion and Resource Inadequacy are predominant role stresses experienced by executives. Middle level executives experienced relatively higher stress arising out of Role Stagnation.
Kumar (1992) found that greater the experience of daily hassles by manager, the greater is the experience of strain. Hassles contribute more strongly to strain than job stressors and life events. Managers experiencing strain reported low job satisfaction. Motivational orientation played a vital role in the stressor – strain relationship.

According to Sen (1981), top level officers obtained lower scores on role stagnation whereas clerical staff obtained the higher score on these dimensions. Singh and Sinha (1986) state that personal effectiveness and job satisfaction were negatively related with nine dimensions of stress – such as role overload, role Conflict, job difficulty and constraints on change, and rules and regulations.

From the above mentioned studies it is evident that the major focus of organisational stress has been on role stress and the intrinsic aspect of the person and the job. Factors that have been researched and studied for their correlation with role stress are job satisfaction, motivation, morale, person – environment fit, leadership styles, participation and alienation, coping styles, organisational commitment, role efficacy, organisational climate and organisational effectiveness.

However, since the present study focused on educational institutions, the study needed a specially developed tool that looked at specific stressors experienced at educational institutions. Unique factors such as socio – politico – economical environment of the institutions, interpersonal
relationships, career opportunities and stagnation, conflicts with university and government authorities, administration of the institutions, the demanding management and society, non-appreciation from the stakeholders and so on, were considered while developing the tool.

3.8 Studies conducted on Female Workers:

The 1992 Survey of Private Sector American Companies showed that stress affects women employees more than men. Single women with children are at high risk of being burnout. Almost 50% of this group i.e. single with children, as compared to 31% of married women with children, reported burnout syndrome.

In Japan, a 1987 Survey showed that of 52.4% of women interviewed suffered from anxieties, worries and stress, the main cause being unsatisfactory relationships at the workplace.

In the United Kingdom, a study on stress and women managers by Haynes and Feinleib (the Framingham Heart Study, 1980), indicated that women in junior and middle level management experience the highest overall 'occupational stress' followed by male supervisors, senior women managers, male junior managers, female supervisors and male middle managers and finally senior male managers.

In India, there are many studies conducted on working women. Surti (1982) conducted a study on 360 working women to find that Self-Role
Distance was experienced mostly by bankers and least by university and college teachers. Doctors experienced maximum Inter - Role Distance while it was minimum among gazette officers, researchers, university and college teachers. Role Stagnation was highest among nurses followed by bank employees and researchers. Role Overload was experienced in more or less the same intensity by all professional groups except university and college teachers. Role Isolation was experienced more by bank employees, nurses, doctors, and gazette officers. Nurses and bank employees experienced role erosion to a higher extent than other groups. Role inadequacy stress was experienced most by nurses, bank employees and researchers. Nurses experienced high role stress, followed by bank employees, whereas university and college teachers experienced least role stress.

Surti and Sarupria (1981) in their study found that married women experienced more stress such as Self - Role Distance, Resource Inadequacy as well as overall role stress as compared to unmarried women.

Surinder and Jagjit (1994) conducted a study with a sample of 200 male and female students of the colleges of Amritser. It was found that female students used more emotion - focussed coping patterns while dealing with stressful situation than males. According to Surinder (1994), females tend to adopt (due to social conditioning) a less effective style of coping.
Summary:

Based on the review of the literature, the present research focused its attention on stress at educational institutions with the basic assumptions emphasising on:

1. Intrinsic job factors would have their effect on the stress levels of academic managers.
2. Physiological reports will give an objective data about the levels of stress experienced by the subject.
3. There will be a relationship between the lifestyle of the individual, personality type, conflict management style and the stress experienced by the subject.
4. There will be a definite relationship between the stress experienced by the academic managers and the coping strategies adapted by them.

The present chapter has given a view of current major developments in the field of stress. The next chapter will deal with the research methodology adopted for the study.
Chapter Four

Research Methodology