CHAPTER ONE

THE PHENOMENON OF STRESS

1.1 Introduction

“The Modern World, undoubtedly a world of achievement, is also a world of stress” (Pestonjee, 1992). Stress is made up of many things; it is a conglomeration of related experiences, pathways, responses and outcomes caused by a range of different events or circumstances. It is a term which although commonly used today, is difficult to define. Further, it is intriguing to note that every individual needs a moderate amount of stress to be alert and capable of functioning effectively in an organization. The presence of stress is, in fact, an asset, as long as it is tolerable and helps in creating healthy competition (Kets de Vries, 1979; Pestonjee, 1987; Mathew, 1985).

1.2 Stress: The Concept

The concept of stress was first introduced by the renowned endocrinologist Hans Selye in 1936. His inspiration came from an experiment in which he injected mice with extracts of various organs. He at first believed he had discovered a new hormone, but was proved wrong when every irritating substance he injected produced the same symptoms; mainly swelling of the adrenal cortex, atrophy of the thymus, gastric and duodenal ulcers. This, paired with his observation that people with different diseases exhibit similar symptoms, led to his description of the effects of "noxious agents" as he at first called it. He later coined the term "stress", which has been accepted into the lexicon of various other languages.
Hans Selye conceptualized the physiology of stress as having two components: a set of responses which he called the "General Adaptation Syndrome", and the development of a pathological state from ongoing, unrelieved stress. (Selye, 1955, 1956, 1964). He discovered and documented that stress differs from other physical responses in that stress is stressful whether one receives good or bad news, whether the impulse is positive or negative. He called negative stress "distress" and positive stress "eustress".

The system whereby the body copes with stress, the hypothalamic-pituitary-adrenal axis system, was also first described by Selye. He also pointed to an "alarm state", a "resistance state", and an "exhaustion state", largely referring to glandular states.

1.3 The Evolution of Stress as a Phenomenon

The word ‘stress’ derives from the Latin language ‘stringere’ (strictus) that means to tightly bind. It was also used in Old French ‘estrecier’, which means to tighten and in Middle English where it appeared as ‘destresse’, ‘strisse’, or with other similar spelling. This term was used popularly in the seventeenth century to mean ‘hardship’, ‘straits’, ‘adversity’, or ‘affliction’. During the eighteenth and nineteenth centuries, the meaning of the word evolved to denote ‘force’, ‘pressure’, ‘strain’, or strong ‘effort’ (Hinkle, 1973).

Lazarus (1966) described stress as a broad class of problems or demands that exert pressure on the system, and the response to that system. The response however is dependent on the interpretation (consciously or unconsciously) and the significance of a harmful, threatening or challenging event. Kahn and Quinn (1970) went on to define stress as an outcome of designated work that causes harm to the individual.
Mason (1975) reviewed the available literature and concluded that stress could be approached in at least four ways. First, as the stimulus or external force acting on the organism; second, as the response or changes in the physiological functions; third, as the interaction between an external force and the resistance opposed to it, and finally, as a comprehensive phenomenon encompassing all three. In physics, stress is the internal restoration force generated within a solid body when an external force is applied to distort the body. This concept of stress was transferred from physicists to social scientists (Cooper & Marshall, 1978). Lazarus, Cohen, Folkman, Kanner and Schaefer (1980) clarified that stress is not only a response, but also a function of individual appraisal of the situation.

According to the Person-Environment Fit Model, Caplan (1983) explains stress in terms of matching needs and values of a person with the environmental supplies and opportunities to meet these needs and values. Stress is essentially internal, caused by ways in which we relate to the world, events and people around us (Eccles, 1987).

Psychologists have held various approaches to stress including (a) stimulus oriented, (b) response-oriented and the (c) psychodynamic approach (Asthana, 1983). In the stimulus-oriented approach stress is a perceived threat in the form of an external force. Further, the response-oriented approach describes four phases in the reaction to stress - the initial phase of anticipatory threat, the impact of stress, the recoil phase and the post-traumatic phase. The response-oriented approach describes how people react to, and function, under stress. In the psychodynamic approach, threats to the organism, both external and internal, lead to disorganization of personality in the form of stress.
Stress may be induced by interpersonal (external) or intrapsychic (between own impulses and ego) factors resulting in anxiety. The intrapsychic needs call into play mechanisms of perceptual selection, defence and vigilance (Pestonjee, 1992). Beehr and Bhagat (1985) proposed that stress is a function of perceived demands on the individual and the perceived resources and coping strength of the individual, multiplied by the perceived importance of meeting the demands and duration of the situation. National Institute of Occupational Safety and Health (1999) defined stress as an injurious physical and emotional response that arises when workers’ abilities and resources do not match the job demands and requirements.

Robbins (2001) defines stress as a dynamic condition in which the individual is confronted with an opportunity, constraint, or demand related to what he or she desires and for which the outcome is perceived to be both uncertain and important. Stress can be caused by environmental, organizational, and individual variables (Matteson and Ivancevich, 1999; Cook and Hunsaker, 2001). Experts still do not agree on a common definition of the simple yet controversial concept of stress (Rees and Redfern, 2000). One of the newer definitions states that stress is a feeling of physical and emotional tension, and a feeling of being unable to cope with anxiety and discomfort, particularly in response to change (Vijayashree and Mund, 2011). It is now proposed that the term ‘stress’ should be restricted to conditions where an environmental demand exceeds the natural regulatory capacity of an organism, in particular situations that include unpredictability and uncontrollability (Koolhas et al., 2011).

1.3.1 Stress as a Response.
Hans Selye’s General Adaptation Syndrome (GAS) has been widely held as a comprehensive model to explain the stress phenomenon. This three-stage model
states that when an organism is confronted with a threat, the general physiological response occurs in three stages.

An **alarm reaction** is the first stage and includes an “initial-shock phase” in which resistance is lowered, and a "counter-shock phase" in which defensive mechanisms become active. It is characterized by autonomous excitability; adrenaline discharge, increased heart rate, muscle tone and blood content; and gastrointestinal ulceration. Depending on the nature and intensity of the threat and the condition of the organism, the periods of resistance vary and the severity of symptoms may differ from 'mild invigoration' to 'disease of adaptation'. Maximum adaptation occurs during the second stage, which is the **stage of resistance**. The bodily signs characteristic of the alarm reaction disappear. Resistance increases to levels above normal. In the last stage, however, the **stage of exhaustion**, adaptation energy is exhausted. Signs of the alarm reaction reappear and the resistance level begins to decline irreversibly thus leading to complete collapse of the organism.

Although, the non-specific concept of stress-related illnesses and the General Adaptation Syndrome have had far-reaching influence and significant impact on the conceptualization and understanding of stress, they have been challenged.

A problem that emerged following Selye’s work was that stress was considered as a generic term that subsumed as a large variety of manifestations (Peartin, Lieberman, Menaghan, and Mullan, 1981). This led to disagreement about the actual manifestation of stress, as well as about where in the organism or system, stress is manifest. Pestonjee, notably pointed out a few shortcomings of Selyes work in his book on the Indian experience of Stress and Coping. (1992).
The first point he made was that Selye had based his research on infra-human subjects where stressors are usually either physical or environmental only.

Secondly Selye’s work depended on the existence of a non-specific physiological response. But he noted that certain stimuli, like exercise and fasting, do not produce non-specific responses, hence the General Adaptation Syndrome cannot hold true in such cases.

Thirdly, intrapsychic or social (interpersonal/interactional) factors emerge as major stressors in human beings. These have not been given their due place in this approach. Finally, the reactions of infra-human subjects are more direct, perceptible and easily measurable. This is not true of human subjects as their responses are always mediated through several layers of cultural and social filters.

1.3.2 Stress as an Interaction
This approach focuses on the statistical interaction between the stimulus and the response. It is defined as a ‘structural’ (Stahl, Grim, Donald, and Neikirk, 1975) and a ‘quantitative’ approach (Straus, 1973). According to Lazarus and Launier (1978), a definition like this which focuses only on the interaction between two variables extends the attempt to only explain a relationship limited to ‘structural manipulations’. Hence the interactional approach is limited to causal interaction and outcomes. By contrast, however, this ‘transactional model of stress’ works to explore the essential nature of stressor-response along with the dynamic stress process contained in it.

1.3.3 Stress as a Relationship between People and the Environment
The third approach defines stress as a relationship between the individual and the environment (Lazarus, 1966). Stress can be viewed both as an intrinsic factor as
well as an extrinsic factor depending on the causative factors leading to stress. Stress is experienced due to the factors inherent within an individual's personality or due to factors existing in the environment. From this perspective, therefore, a person has certain abilities, needs and values and there are certain opportunities available in the environment to match the requirement of the person. A mismatch of the same leads to stress.

Woolfolk and Richardson's (1979) model of stress aligns itself to that of Lazarus. It proposes that stress responses are not the direct result of environmental factors, which are neutral in nature and therefore incapable of creating stress reactions. Stress here is seen as a perception of one's mind. Environmental demands exist only in so far as they are perceived. In the opinion of McGrath (1976), there is potential for stress when an environmental situation is perceived as presenting a demand which threatens to exceed the person's capabilities and resources for meeting it, under conditions where he expects a substantial differential in the rewards and the cost from meeting the demand, versus not meeting it.

Edwards, Caplan and Harrison (1998) offer a detailed conceptualization of the relationship between the person and the environment in the 'person-environment (P-E) fit theory'. This has been earlier elaborated on by various researchers (French and Kahn, 1962; French, Rogers & Cobb, 1974; Caplan, Cobb, French, Harrison & Pinneau, 1975; French, Caplan, & Harrison, 1982; Caplan, 1983, Harrison 1978, 1985 and Edwards & Cooper, 1990). In the Person-Environment theory, two types of dimensions are identified; the first dimension reflects the fit between the individuals motives, and the supplies which the organization provides; and the second dimension reflects the fit between the organization's demands from the individual, and the individual's ability to meet the demands. Just as meeting needs and values is fundamental to the continued functioning and existence of the individual, meeting role
demands is fundamental to the continued functioning and existence of the organization (Edwards, Caplan & Harrison 1998).

People do not respond directly to a stimulus as such; they respond to meaning of the stimulus in relation to their perception of the environment. Events can be stressful, only when they are perceived to be threatening. Stress is dependent on the individual appraisal of what is at stake and what resources are available for meeting the demands posed. What is stressful for one person may be normal for others and vice versa. Further, what is stressful for an individual in some situations may not be stressful for the same individual in other situations (Srivastav, 2010).

1.4 Stress and Disease

A number of concepts developed by ancient Indian scholars relate to or appear similar to the phenomenon of stress. These include dukha (pain, misery or suffering), klesa or trisna (desires), atman and ahamkara (self and ego), adhi (mental aberrations) and prajnaparadha (failure or lapse of consciousness). The mind-body relationship, characteristic of modern stress, is emphasized in the Ayurvedic system of medicine.

Modern western psychological literature focusing on ideas related to the strength of motives and frustration and their behavioral consequences, the frustration-aggression hypothesis, ego involvement, mind-body interactions and locus of control have their parallels in ancient Indian thought (Pulsane, Bhavasar, Goswami and Evans, 1993).

The ancient Sanskrit words ‘klesa’ and ‘dukha’ approximate stress. The ‘Samkhya-Yoga’ system explains that the fundamental non-cognition which leads to stress is
avidya. Avidya leads to asmita (self-appraisal), and abhinivesa (coping orientation). Faults in either or all of these three appraisals lead to stress and torment. Stresses have been categorized into three types: personal (adhyatmik), situational (adhibhotik), and environmental (adhidevik).

Klesa, as stress has been defined, operates through four different modes. The first is prosupta or dormant. The second is tonu or tenuous denoting comparatively weak stressors which are held in check by more powerful stressors. They are present but without sufficient intensity. The third is vichchinna or intercepted; these lack continuity due to conflict with competing responses. The fourth mode is udara or operative stressors. These are potent stress responses which have found full expression (Rao, 1983).

1.4.1 Phases of Stress
Stress has been called ‘the most debilitating medical and social problem of the present century’ (Nuernberger, 1990). Stress is the result of how our mind and body function and interact. It is psychosomatic-psyche meaning ‘mind’ and soma meaning ‘body’. It is this “dis-ease” created by the abuse of our minds and bodies which manifests through many phases.

Psychic phase: There is a mild, persistent psychological and behavioral symptom of stress such as irritability, disturbed sleep, loss of appetite, etc.

Psychosomatic phase: Symptoms are more pronounced with beginnings of generalized physiological symptoms such as occasional rises in blood pressure and tremors.

Somatic phase: This phase is marked by increased dysfunction of the organs. This marks the beginning of a disease state.
**Organic phase**: There is a full blown disease state such as stomach ulcers or hypertension.

### 1.4.2 The Effects of Stress

The effects of work stress occur in three main areas: physiological, emotional and behavioral. Physiological effects of stress include increased blood pressure, increased heart rate, sweating, hot and cold spells, heavy breathing, muscular tension and increased gastrointestinal disorders. Emotional effects of stress include anger, anxiety, depression, low self-esteem, poor intellectual functioning (including an inability to concentrate and make decisions), nervousness, irritability, resentment of supervision and job dissatisfaction. Behavioral effects include poor performance, absenteeism, high accident rates, high turnover rates, high alcohol and drug abuse rates, impulsive behavior and difficulties in communication.

Stress and coronary heart disease are strongly linked. Other serious health problems commonly associated with stress include backaches, headaches, stomach and intestinal problems, upper respiratory problems and various mental disorders.

### 1.5 The Development of Organizational Role Stress

There are three important sectors of life in which stress originates: (a) job and the organization, (b) the social sector, (c) the intra-psychic sector. The first, namely, job and organization, refers to the totality of the work environment (task, atmosphere, colleagues, compensations, policies, etc). The social sector refers to the social/cultural context of one’s life including religion, language, dress and other such factors. The intra-psychic sector encompasses those things which are intimate and personal like temperament, values, abilities and health.
Pestonjee put forth a theory wherein in the initial stage; the magnitude of stress emanating from the three sectors of life is in consonance with the concept of Stress Tolerance Limit (STL) of the individual to handle these stresses. This indicates a balanced state (Pestonjee, 1983). Next, in stage two, job and organizational loads increase and make an impact on the personality. In this stage, we find minor surface changes taking place which are quite manageable. In stage three, job and organizational loads become unmanageable and interact with intrapsychic loads. This is the stage at which the negative consequences of stress become apparent and stress related diseases emerge. Further to this stage, several breakdowns and cracks are visible. If unchecked this culminates in the last and most intense phase, where there is complete disintegration of personality and proper psychological and medical help is necessary.

The behavioral decompensation taking place due to stress tends to get reflected in interpersonal and other reactions. The reactions are received and analyzed by the environment which, in turn, bounces back signals to the individual to bring about a change either at the organismic level or at the response level.

Thus the Stress Tolerance Limit is made up of four vital components: (a) Depression proneness, (b) Anxiety proneness, (c) Anger, and (d) Type A Behavior pattern (Pestonjee, 1983). Depression is an emotional state of dejection, feeling of worthlessness and guilt accompanied by apprehension. Anxiety is a state of emotional tension characterized by apprehension, fearfulness and psychic pain. Mild anger, on a situation specific basis may increase energy and performance levels through the increased release of adrenaline. However substantial chronic anger may wear down the body by overtaking its systemic resources. Type A behavior is a personality profile characterized by speed, impatience, desire for achievement and
perfectionism. These individuals are likely to create stress for themselves in situations that others may find relatively stress free.

1.6 The Concept of Organizational Role Stress.

Pareek (1983a) has defined Role as “any position a person holds in a system (organization) as defined by the expectations of various significant persons, including himself/herself, from that position.”

- **Role Space**: It can be defined as the dynamic interrelationship both between the self and the various roles an individual occupies, and amongst these roles.

- **Role Set**: The individuals’ role in the organization is defined by the expectations of other significant roles, and those of the individual himself/herself. The role set is the pattern of relationships between the role being considered and other roles.

**Role Space Conflicts**

Role space has three main variables: self, the role under question, and the other roles which the individual occupies. Any conflicts amongst these are referred to as Role Space Conflicts or Role Space Stressors.

(a) **Inter-role distance (IRD)**: It is experienced when there is a conflict between organizational and non-organizational roles.

(b) **Role Stagnation (RS)**: It is the feeling of being stuck in the same role. Such a type of stress results in perception that there is no opportunity for the furthering or progress of one’s career.

(c) **Self-Role distance (SRD)**: When the role a person occupies goes against his/her self-concept, then he/she feels self-role distance type of stress. This is
essentially a conflict arising out of a mismatch between the person and his/her job.

Role Set Conflicts

The conflicts which arise as a result of incompatibility amongst the expectations of the 'significant' others (and of the individual himself/herself) are referred to as role set conflicts or stress. These take the form of:

(a) Role ambiguity (RA): It refers to the lack of clarity about the expectations regarding the role which may arise out of lack of information or understanding. It may exist in relation to activities, responsibilities, personal styles and norms and may operate at three stages: when the role sender holds his/her expectations about the role, when he/she sends it, and when the occupant receives those expectations.

(b) Role expectation conflict (REC): This type of stress is generated by different expectations by different significant persons such as superiors, subordinates and peers, about the same role; and the role occupant’s ambivalence as to whom to please.

(c) Role overload (RO): When the role occupant feels that there are too many expectations from the significant others in his/her role set, he/she experiences role overload. There are two aspects of this stress: quantitative and qualitative. The former refers to having too much to do, while the latter refers to things being too difficult and the accountability in the role.

(d) Role erosion (RE): This type of role stress is the function of the role occupant’s feeling that some functions which should properly belong to his/her role are transferred to/or performed by some other role. This can also happen when the functions are performed by the role occupant but the
credit for them goes to someone else. Another manifestation is in the form of underutilization in the role.

(e) **Resource Inadequacy (Rln):** This type of stress is evident when the role occupant feels that he/she is not provided with adequate resources for performing the functions expected for his/her role.

(f) **Personal Inadequacy (PI):** It arises when the role occupant feels that he/she does not have the necessary skills and training for effectively performing the functions expected from his/her role.

(g) **Role Isolation (RI):** This type of role stress refers to the psychological distance between the occupant’s role and other roles in the same role set. It is also defined as role distance which is different from inter-role distance (IRD), in the sense that while IRD refers to the distance among various roles occupied by the same individual, role isolation (RI) is characterized by the feelings that others do not reach out easily, indicative of the absence of strong linkages of one’s role with other roles.

### 1.7 The Organizational Role Stress Scale

Several frameworks have been developed for the measurement of role stress. The concept of role stress was introduced by Kahn, Wolfe, Quinn, Snoek and Rosenthal (1964) who identified three role stressors (i.e., role conflict, role ambiguity and role overload). In this framework, role conflict included inter sender conflict, intra sender conflict; inter role conflict, and person role conflict. Based on the framework of Kahn, et al. (1964), a role conflict scale comprising of eight items, and a role ambiguity scale comprising of six items was developed by Rizzo, House and Lirtzman (1970). These two scales were extensively used for role stress research for a long time in spite of controversies about their validity. McGee, Ferguson and Seers (1989) called
for a moratorium on the use of these scales. According to Kelloway and Barling (1990), however, the call for moratorium on the use of these scales was premature.

Only two role stressors were measurable until Beehr, Walsh and Taber (1976) developed a role overload scale comprising three items; role conflict, role ambiguity and role overload, however these three role stressors ill represented the complexities of performance in organizational roles. Pareek (1981) significantly expanded the framework of role stress by identifying eight role stressors which closely represented problems encountered in organizational roles. He developed the Your Feelings About Your Role (YFAYR) Scale, which comprises 40 items to measure inter role distance, role stagnation, role ambiguity, role erosion, role overload, role isolation, role inadequacy and self role distance. The YFAYR scale was improved by Pareek through factor analysis, which led to splitting role ambiguity into a new version of role ambiguity and role expectation conflict; and role inadequacy into resource inadequacy and personal inadequacy. A comprehensive role stress measurement scale comprising 50 items for the measurement of ten role stressors was thus, realized. The new instrument was called the Organizational Role Stress Scale (ORSS) (Pareek 1983b).

A new role stressor called Role Underload has been identified by Srinivasan and Anantharaman (1988) through factor analysis of the YFAYR scale and by Srivastav and Pareek (2008) through factor analysis of the ORS scale. Srivastav (2009) developed the New Organizational Role Stress (NORS) scale comprising 71 items for measuring 11 role stressors, which included Role Underload. Studies on the use of the NORS scale for role stress research are yet to be reported.

The Organizational Role Stress Scale (ORSS) developed by Pareek (1983 a and b ) has been selected for this study. The scale has been extensively used for research
on role stress (Pestonjee 1999). The ORSS is certainly one of the best instruments available today for measuring a variety of role stresses (Pareek 1983 a & b). The test-retest reliability of this instrument has been studied in detail and validated by Sen (1981). The scale has been extensively used for research on role stress (Pestonjee, 1999; Tankha, 2006; Ahmady, Changiz, Masiello, & Brommels, 2007; Bhattacharya & Basu, 2007; Lu, 2008; Dasgupta & Kumar, 2009). Gordon (2004) has branded the ORS scale as a classic inventory for the measurement of role stress in organizations.

The ORSS is a 5 point scale indicating how true a particular statement is for the role. The respondent is asked to assign ‘0’ to a statement if he never or rarely feels this way; ‘1’ to a statement if he occasionally feels this way; ‘2’ if he sometimes feels this way; ‘3’ if he frequently feels this way and ‘4’ if he very frequently or always feels this way. Hence the score of each role stress may vary between 0 and 20, and the total ORS score between 0 and 200. The ratings of the respondents can be added row-wise to give the scores on the 10 role dimensions.