

CHAPTER - II

LITERATURE REVIEW

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REVIEW OF LITERATURE

Dictionary meaning of stress is hardship, adversity, strains, affliction etc. Medical definition of the term stress is “reaction of the animal body to forces of deleterious nature, infections, abnormal states which tend to disturb its normal psychological equilibrium”.

It was Walter Cannon who first identified the stress reaction as the *fight-or-flight response* in the early part of twentieth century. Hans Selye continued the research of Cannon in depth and concluded that, regardless of the source of stress, the body reacted in the same manner.

‘Stress is essentially the art of wear and tear on the body’- Hans Selye stated. He added clarity to this statement by saying ‘In any event, wear and tear is only the result of all this; hence now we define stress as the non-specific response of the body to any demand’. ‘Stress is the state manifested by a specific syndrome which consists of all the nonspecifically-induced changes within a biological system.’

2.1 DEMAND VS ABILITY THEORY

Psychologically stress is defined as an imbalance between the perceived demands made on an individual and the perceived coping ability of the individual.

‘Stress, it is argued, can only be sensibly defined as a perceptual phenomenon arising from a comparison between demand on the person and his or her ability to cope. An imbalance in this mechanism, when coping is important, gives rise to the experience of stress, and to the stress response.’ T. Cox explains in his book: *Stress*, Basingstoke: Macmillan Education, 1978.

‘Stress is the psychological, physiological and behavioral response by an individual when they perceive a lack of equilibrium between the demands placed upon them and their ability to

meet those demands, which, over a period of time, leads to ill-health.’ Stephen Palmer, Occupational Stress, *The Health and Safety Practitioner*, 7(8), pp.16-18.

‘Stress occurs when pressure exceeds your perceived ability to cope.’ Cary Cooper and Stephen Palmer, *Conquer Your Stress*, Institute of Personal and Development, 2000, p.5. Cooper also stated ‘When pressure exceeds your ability to cope with it, then you’re in the stress arena.’ In his book *The Science of Stress*, Equinox, Channel 4, 2000. J.M. Atkinson defines stress almost in same lines as ‘Excess of perceived demands over perceived abilities.’

‘Stress is a process that can occur when there is an unresolved mismatch between the perceived pressures of the work situation and an individual’s ability to cope.’ Report of the Education Service Advisory Committee of the Health and Safety Commission, *Managing Occupational Stress: A Guide for Managers and Teachers in the School Sector*, 1990.

Stress can also occur as a result of mismatch between the demands on an individual and the resources available for the person to meet the demands. ‘When the demands and pressure placed on individual workers do not match the resources available, or do not meet the individual’s needs and motivations, stress can occur and endanger that person’s health and well-being. In the short-term, stress can be debilitating; in the long-term, stress can kill.’ The London Hazard Centre, *Hard Labor: Stress, Ill-Health and Hazardous Employment Practices*, 1994.

‘Stress arises when individuals perceive that they cannot adequately cope with the demands being made on them or with threats to their well-being.’ R.S. Lazarus, *Psychological Stress and the Coping Process*, New York: McGraw Hill, 1966. ‘Stress is the natural reaction people have to excessive pressures or other types of demand placed on them.’ (HSE website, 1st November, 2000). It further explains that ‘Stress is people’s natural reaction to excessive pressure – it isn’t a disease. But when demands and pressure become excessive, they lead to stress. And it’s clear from the recognized symptoms of stress that it’s actually bad for you.’

‘It can involve both physical and behavioral effects but these are usually short-lived and cause no lasting harm. When the pressure recedes, there is a quick return to normal. Stress is not

therefore the same as ill-health. But in some cases, particularly where pressure are intense and continue for some time, the effect of stress can be more sustained and far more damaging, leading to longer-term psychological problems and ill-health.’ (HSE, *Stress at Work*, 1995).

‘In particular there is the notion that stress entails a sequence of events that include the presence of demand, a set of evaluative processes through which that demand is perceived as significant (in terms of threat, and in terms of its impact on individual resources or requiring of the individual something other than normal functioning), and the generation of a response that typically affects the well-being of the individual.’ (HSE, *A ‘management standards’ approach to tackling work related stress – Part I, Rationale and Scientific Underpinning*, 2004).

2.2 STIMULUS VS RESPONSE THEORY

‘Stress occurs when a human experiences any threat either to his or her physical integrity or mental well-being.’ Professor Stafford Lightman, endocrinologist, Bristol University, *The Science of Stress*, Equinox, Channel 4, 2000.

‘The sum of the biological reactions to any adverse stimulus, physical, mental, or emotional, internal or external, that tends to disturb the organism’s homeostasis. Should these compensating reactions be inadequate or inappropriate, they may lead to disorders. The term is also used to refer to the stimuli that elicit the reactions.’ HeSH classification (Medical Subject Headings, a hierarchical structure of medical concepts from the National Library of Medicine), June 1999.

2.3 OCCUPATIONAL STRESS

When it comes to occupational or work –related stress, we can see numerous researches carried out by prominent scholars at different functional areas and various industries. Some of the important views by the intellectuals on the topic are listed below.

‘Work related stress is the emotional, cognitive, behavioral and physiological reaction to aversive and noxious aspects of work, work environment and work organizations. It is a state characterized by high levels of arousal and distress, and often by feeling of not coping.’ (European Commission Directorate-General for Employment and Social Affairs, *Guidance on work-related stress: Spice of Life – or Kiss of Death*, 1997).

‘Workplace stress is explained in line with a transactional model of stress emphasizing the dynamic properties of the concept as well as the role of subjective processes such as appraisal and coping,’ Cary L. Cooper, Helge Hoel and Kate Sparks, *The Cost of Violence/ Stress at Work and the Benefits of a Violence /Stress-Free Working Environment*, Report commissioned by the International Labour Organization (ILO) Geneva, ILO website, 2001.

‘Job stress can be defined as the harmful physical and emotional response that occurs when the requirements of the job do not match the capabilities, resources, or needs of the worker.’ *Stress at Work*, United States National Institute of Occupational Safety and Health, Cincinnati, 1999.

‘There is increasing consensus around defining work-related stress in terms of the “interactions” between employee and (exposures to hazards in) their work environment. Within this models stress can be said to be experienced when the demands from the work environment exceed the employees’ ability to cope with (or control) them. Defining stress in this way focuses attention on the work-related causes and the control measures required.’ T. Cox et al., *Research on Work-Related Stress: Summary of Agency Report*, European Agency for Safety and Health at Work, 2000.

‘Unfortunately to answer the question “What is stress”, let alone work-related stress, is difficult. This is because the same stressor may act differently on different people. Therefore, no single definition of the term “stress” can be offered. Academic and professional texts tend to focus their discussion – and definitions – within the “school” of psychology they follow.’ D. A. Grayham, *Journal of the Royal Society of Health*, April, 1997, vol. 117, no. 2.

‘Stress occurs where demands made on individuals do not match the resources available or meet the individual’s needs and motivations. Stress will be the result if the workload is too large for the number of workers and the time does not use the potential skills and experience of some individuals will cause them stress.’ TUC, in International Stress Management Association, *Stress News*, October 2000, vol, 12, no. 4

Various common causes of stress in organization as identified by the researchers are:

- Work load
- Lack of proper recognition
- Lack of rewards
- Work environment
- People at the top or those around
- Prevailing customs
- Organizational culture
- Fulfillment of material needs

2.4 CONFLICTING VIEWS AMONG EXPERTS

Despite massive volumes of research work on the subject for many decades, there are a lot of conflicts, in views and approaches to the subject, between prominent scholars. Some of the interesting views by a few renowned researchers/scholars on the topic is reproduced here:

‘We find stress a difficult subject to talk about because there are probably as many definitions of it as there are psychologists.’ Frank Davies, in his capacity as Chairman of the Health and Safety Commission, *HSC Newsletter 114*, August 1997.

‘The word “stress” has acquired a vague, catch-all meaning, used by different people to mean different things. It is used to describe both physical and mental conditions, and the pressure which causes those conditions. It is also used to describe stress which is beneficial and harmful both in its sources and its effects.’ Health Education Authority, *Stress in the Public Sector – Nurses, Police, Social Workers and Teachers*, 1998.

‘Stress occurs where demands made on individuals do not match the resources available or meet the individuals’ needs and motivations... Stress will be the result if the workload is too large for the number of workers and the time does not use the potential skills and experience of some individuals will cause them stress.’ TUC, in International Stress Management Association, *Stress News*, October 2000, vol, 12, no. 4

‘What happens is that each individual constructs his own reality of stress. Adopting this phenomenological approach, the people who feels stress is under and will show signs or symptoms of stress.’ D.A. Grayham, quoting p.Berger and T. Luckmann, *Social Construction of Reality: Treatise in the Sociology of Knowledge*, Harmondsworth: Penguin, 1991.

‘I think we’re very poor at defining it an there’s a very interesting story here, that the man who did much of the original research in stress. Hans Selye, was in fact a non-English speaker. And his idea was to make a parallel between the effects of human stress and stress in engineering terms... And his idea was to apply this to mammalian systems where the “stress” was the external event, while “strain” was the way that the body responded. But because of his poor English he mixed up the words “stress” and “strain”, and so as a result of this we’ve got a rather poor idea of understanding stress.’ David Phillips, epidemiologist, BBC Radio 4, *Patient Progress: Stressed Out*, 2000.

‘I’m right in the middle of a study at the moment: we’re literally stopping people on the stress of London and actually asking them what they think stress is. And they’re answering a questionnaire about how they deal with stress. And when it comes to asking them what they think stress is, or how they recognize it in themselves, they have far more difficulty dealing with this. So it’s a very global concept that people have been applying to many situations, but when you actually ask them what it actually means to them, they’re not so clear.’ Stephen Palmer, Centre for Stress Management, BBC Radio 4, *Patient Progress: Stressed Out*, 2000.

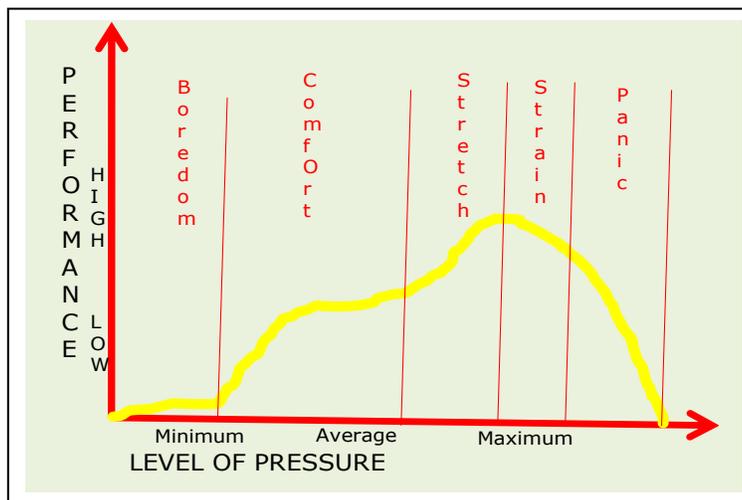
2.5 PRESSURE AND STRESS

‘Many individuals are confused as they believe that pressure and stress are one and the same. They are not. Stress will result from an inappropriate level of pressure, whether real or perceived... In reality stress can and will affect each and every one of us both directly and indirectly.’ Caroline Raymond, ‘Stress – The Real Millenium (sic) Bug’, *Stress News*, October 2000, vol.12 no. 4

Pressure is the input of the process and stress is an outcome or possible response to pressure; pressure is the force that may produce stress. Pressure is a neutral force and is inevitable; to grow, we need pressure. It can produce either good or bad outcomes, depending on an individual’s adaptability and coping skills. Eliminating pressure is not the solution to avoiding stress. We need to manage pressure in such way that it produces peak performance. We work our best when we are stimulated, not when we are bored.

The following pressure- performance curve explains various stages of pressure and our performance.

Fig: 2.1 Pressure Performance Curve



Low pressure zone: Lack of stimulation, boredom, frustration, lack of challenge. But, the person may suffer from stress.

The comfort zone: It gives opportunity to maintain a balance in our lives and allow us to achieve reasonable results. Need occasional challenge to keep us motivated.

The stretch zone: It is the area of peak performance. We face challenges and new experiences, learn from these experiences and, as a result, go through a period of growth and development.

Strain zone: Problem arises when pressure continues to increase, we start to find we can no longer continue to manage and we become “over stretched”. Coping mechanism starts to break down and performance deteriorates.

Panic zone: Panic is when the world collapses around us and we are unable to take any more. Our suffering is obvious to others, though we may not be aware of our problem.

We need to manage pressure to avoid both the extremes- ‘rust out’ and ‘burn out’. Managing pressure for peak performance is about knowing when and how to use pressure to get the things done. Everyone has a pressure threshold; some people can handle a lot of pressure while others fall apart very easily.

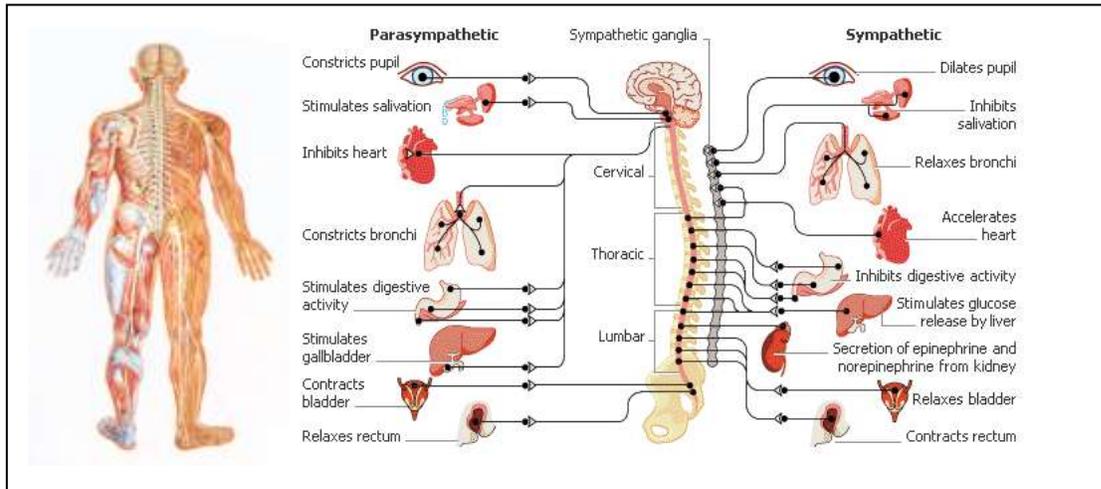
It is important to remember that different people have different pressure threshold, the same person has different thresholds at different times and pressure is cumulative.

2.6 THE AUTONOMIC NERVOUS SYSTEM (ANS)

The Autonomic nervous system (ANS) consists of two complementary parts, the sympathetic nervous system and the parasympathetic nervous system.

The sympathetic nervous system (SNS) is responsible for the fight of flight response and act to convert stored energy in to usable energy. The parasympathetic nervous system (PSNS) reverses this process and is concerned with building up energy stores. The process by which these two branches of the autonomic nervous system balance our bodies is known as homeostasis.

Fig 2.2: Autonomic Nervous System



2.7 PHYSIOLOGY OF STRESS

‘Stress per se is not an actionable injury. The first hurdle a claimant must surmount in a stress at work claim is to establish that they are suffering from a positive psychiatric illness, not merely grief, stress or any other normal emotion... The distinction between what constitutes mere mental stress and symptoms that amount to a recognizable psychiatric illness is not always clear or well defined.’ Dr. Martin Baggaley, Consultant Psychiatrist and Honorary Senior Lecturer, *Stress –Related Psychological Illness: medical aspects and causation*, Berryman Lacey Mawer Occupational Disease Series, 2003.

When we perceive a threat, brain, through hypothalamus, stimulates the SNS and Pituitary gland. The chemicals released by this process produce following changes:

- Blood drains away from our extremities and the stomach to increase the supply to brain and vital organs.
- Heart starts to beat faster and the BP rises.
- Breathing changes and muscles tense ready for action.
- Pituitary gland releases a range of hormones that act to maintain performance. Most powerful of these is cortisol which keeps high levels of fat and sugar in blood stream to provide instant energy.

- Cooling process starts through sweating.

The adrenalin and noradrenalin released by the adrenal gland tense the muscles, Increase the heart rate, mobilize fats and glucose and move blood to the muscles. Cortisol and sex hormones released to the blood keeps fat and sugar levels high, suppress the immune system, lower libido (basic human instincts, especially sex drive) and reduce fertility.

2.8 HOMOEOSTASIS-BODY THERMOSTAT

Under threat, the SNS triggers the release of chemicals and hormones to blood and our body switches in to an optimal state. When the threat passes, PNS returns the body to normal. The potentially harmful changes are reversed and no long term harm is done.

But if the fight or flight response is constantly being triggered, then the body never gets the chance to return to normal. We reach a point where we can no longer sustain the imbalance in the body and we get exhausted. With prolonged exposure to continuous threats, our bodies start to lose the ability to switch on PSN. Slowly we get used to the discomfort and pay the price.

If the threat continues, our ability to adapt eventually becomes exhausted and our performance suffers.

The cortisone, adrenaline, and noradrenalin act to increase our Blood pressure, blood sugar and blood fats; this will produce the following effects:

- Increased heart rate;
- Increased respiration rate;
- Increased blood supply to brain;
- Dilated pupils;
- Dry mouth;
- Sweating
- Reduction in blood supply to less vital organs.

If the threat continues, our ability to adapt eventually becomes exhausted and our performance suffers.

‘The stress response is perfectly normal. It’s a physiological response that is there to adapt us to a challenge in our environment. You need to have stress hormones in order to survive the challenges of the world.’ Jonathan Settle, endocrinologist, BBC Radio 4, *Patient Progress: Stressed Out*, 2000.

2.9 HEALTHY STRESS VS UNHEALTHY STRESS

‘Stress is an unavoidable consequence of life. Without stress, there would be no life. However, just as distress can cause disease, there are good stresses that offset this, and promote wellness. Increased stress results in increased productivity - up to a point. However, this level differs for each of us.’ The American Institute of Stress, *Stress – America’s Number One Health Problem*, *Symbiosisonline.com*, 2003.

Most musicians, Olympic athletes and professional actors recognize that they perform better after feeling nervous before the event starts. When controlled, stress generates feelings of challenge, excitement and motivation. When uncontrolled, however, it produces extreme physical and emotional discomfort, strange behavior, serious disease and ultimately premature death. It has been said that finding the right balance is like adjusting the strings of a musical instrument: too loose and the tune will be ruined; too tight and the string will break. Just right and the instrument will sing with a lovely harmony that fills your mind, body and soul.

EUSTRESS: Eustress or positive stress occurs when your level of stress is high enough to motivate you to move into action to get things accomplished.

DISTRESS: Distress or negative stress occurs when your level of stress is either too high or too low and your body and/or mind begin to respond negatively to the stressors.

2.10 CHANGE AND STRESS

‘For all its apparent relevance to everyday life, stress is a concept beleaguered by problems of definition. It is very much an umbrella term which covers a wide range of very different aspects of work and life.’ Dr. Jo Rick et al. Ibid.

All changes which require adaptation, even when they are positive changes, can cause some stress as the person tries to navigate a way through uncharted waters and to adapt to the new demands made by the change. Unexpected events in life and situations which we have no control over are often particularly stressful. What we find stressful depends on:

1. Personality
2. Attitude
3. Health
4. The circumstances surrounding the event
5. Social support and
6. The way our body reacts.

2.11 WHY DO WE FEEL STRESSED?

‘No, look – some people spend their lives trying to sop people using split infinitives. We call this stress because that’s what people know it as. No one is getting compensation for that. What people are getting compensation for is real illness and it doesn’t help those people to tell them they haven’t got it just because they haven’t got the name right.’ Owen Tudor, TUC Senior Health and Safety Officer, Radio Five Live, *Drive Time*, February 2002.

When we confront with a stressful situation, nerve signals from brain trigger the release of adrenaline directly in to bloodstream (adrenalin level as much as thousand fold within just one minute). Adrenaline then produces red alert by sending instant response in different parts of the human body:

- *Pulse rate, Blood pressure and force of heart’s contractions increase; so more blood is*

pumped to muscles and brain.

- *Circulation diverts blood away from intestines towards brain (for quick thinking), skeletal muscles (for exercise) and skin (for cooling).*
- *Sweat glands are switched on; the person literally sweats with fear.*
- *Muscles tense ready for action.*
- *Breathing rate goes up and airways widen to bring extra oxygen in to body.*
- *Sugar levels increase as the body's stores are raised to provide instant energy for extra power, strength and speed.*
- *Pupils dilate to improve the field of vision.*
- *Restrict vessels to the skin, kidney and digestive tract, shutting down digestion and maximizing readiness for fight-or-flight syndrome.*
- *Pituitary gland pumps cortisol, steroid hormone which maintains blood pressure and nervous system.*

2.12 STRESS DISEASE LINK

‘Stress is the 20th Century Epidemic.’ 1992 United Nations Report.

Researchers indicate 2/3 of medical visits are for stress related illnesses. Stress response generally contributes to Coronary artery disease, Cancer, Respiratory disorders, Unintentional injuries, Cirrhosis and Suicide. The following ailments known to have links with stress:

- Hypertension;
- Coronary thrombosis or heart attack;
- Migraine;
- Hay fever and allergies;
- Asthma;
- Pruritus or intense itching;
- Peptic ulcers;
- Constipation;
- Rheumatoid arthritis;
- Menstrual difficulties;

- Indigestion;
- Over active thyroid gland;
- Diabetes mellitus;
- Skin disorders;
- Tuberculosis;
- Depression.

2.13 THE SYMPTOMS OF STRESS

‘We’ve been involved in an intensive program to design a pill which can counter the effects of stress. And the way to do this is to block the first chemical made by the hypothalamus in the brain which actually controls the whole of the stress response... So if we can do this whole part of the cascade starting in the hypothalamus which causes you to respond to stress by producing cortisol for instance can be blocked right at the central level in the brain.’ Professor Stafford Lightman, *The Science of Stress*, Equinox, Channel 4, 2000.

2.13.1 Signs of Stress:

- Alopecia (hair loss)
- Anger
- Anxiety and panic attacks
- Asthma
- Chest pain
- Cramp
- Depression
- Eczema
- Hair-pulling
- Head ache and migraine
- High blood pressure
- Impotence
- Indigestion and heart burn
- Infections

- Insomnia
- Irritability
- Irritable bowel syndrome
- Memory
- Phobias
- Psoriasis
- Restless leg syndrome
- Sex drive
- Tired all the Time (TATT)
- TMJ syndrome

2.13.2 Physiologic Signs of Stress

3.13.2.1 Immediate Changes:

- Increased cardiac output
- Increased circulation
- Increased BP, RR
- Increased sweating
- Pupil dilatation
- Decreased salivation
- Decreased gastric mobility

2.13.2.2 Long Term Effects

- Increased breakdown of protein
- Increased blood glucose
- Increased vascular constriction
- Decreased inflammatory response
- Decreased immune response
- Increased fluid volume
- Increased sodium & fluid retention in kidneys

2.13.3 Emotional Signs of Stress

- Denial

- Fear
- Depression
- Grief
- Anger
- Worry
- Uncertainty

2.13.4 Cognitive Signs & Symptoms

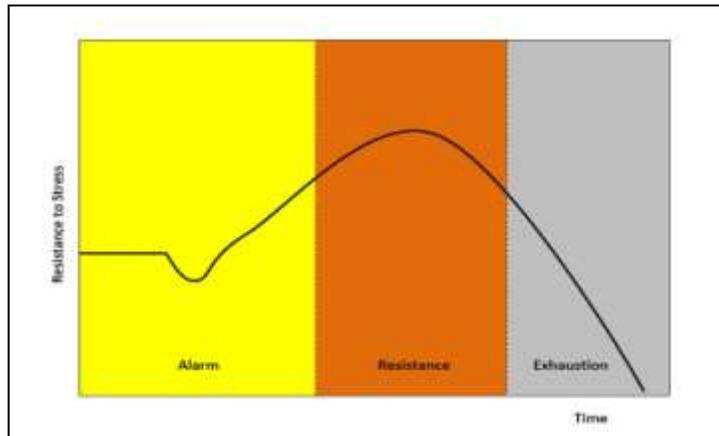
- Difficulty Making Decisions
- Confusion
- Difficulty Naming Familiar Items
- Poor Concentration
- Blaming Others
- Memory Problems
- Replaying Events Over & Over
- Withdrawal
- Suspiciousness
- Excessive Humor or Silence
- Increased Smoking, Alcohol or Food
- Change in Activity Level
- Angry Outbursts
- Crying Spells

2.14 STAGES OF STRESS

‘When an animal or a person is exposed to a change in the environment that requires work in order to get back to their usual function that is in fact stress.’ Professor Charles Nemeroff, psychiatrist, Emory University, Atlanta. *The Science of Stress*, Equinox, Channel 4, 2000.

The following curve illustrates various stages of stress development.

Fig: 2.3 Stages of stress



2.14.1 Alarm Stage

As you begin to experience a stressful event or perceive something to be stressful psychological changes occur in your body. This experience or perception disrupts your body's normal balance and immediately your body begins to respond to the stressor(s) as effectively as possible. Examples:

Cardiac - increased heart rate

Respiratory - increased respiration

Skin - decreased temperature

Hormonal - increased stimulation of adrenal glands which produce an adrenal rush.

2.14.2 Resistance stage

During this stage your body tries to cope or adapt to the stressors by beginning a process of repairing any damage the stressor has caused. Your friends, family or co-workers may notice changes in you before you do so; it is important to examine their feedback to make sure you do not reach overload.

Examples:

- Behavior indicators include: lack of enthusiasm for family, school, work or life in general, withdrawal, change in eating habits, insomnia, hypersomnia, anger, fatigue.

- Cognitive Indicators include: poor problem solving, confusion, nightmares, hyper-vigilance.
- Emotional indicators include:
 - tearfulness
 - fear
 - anxiety
 - panic
 - guilt
 - agitation
 - depression
 - overwhelmed.

2.14.3 Exhaustion stage

During this stage the stressor is not being managed effectively and the body and mind are not able to repair the damage.

Examples:

- Digestive disorders
- withdrawal
- headaches
- tension
- insomnia
- Loss of temper

2.15 CAUSES OF STRESS

‘The chemistry of the brain is very similar in patients who are depressed and patients who have chronic stress.’ Professor Stafford Lightman, BBC Radio 4, *Patient Progress : Stressed Out*, 2000.

Causes of stress can be internal or external. The examples of internal causes include the physical and emotional effects of working long hours, inadequate time off for relaxation, lack of sleep, physical tiredness, mental exhaustion, menstruation, menopause, negative self-image, negative thoughts, lack of fitness, disruption of bio-rhythms caused by such things as shift work, jet lag and insomnia, physical or mental ill-health etc.

Examples of external causes include changes in your relationship with your husband/ wife/ girlfriend/ boyfriend, changes in your job title / position, changes in your career prospects, changes in your relationships with work colleagues, changes in your hours of work, changing from working to retirement or redundancy, changes in your living accommodation, changes in your health, changes in your relationships with relatives, changes in your social life / relationships with friends, changes in your hobbies, recreations etc.

2.16 STRESS ALLEVIATION AT VARIOUS STAGES

‘In the present context, “stress” refers to any natural or experimentally contrived circumstances that (intuitively, at least) pose an actual or perceived threat to the psychobiological unity of the individual.’ R. Ader, and N.Cohen (1993), ‘Psychoneuroimmunology: Conditioning and stress’, *Annual Review of Psychology*, 44, pp. 53-85

Stress affects different people in different ways. Some are more likely to develop physical distress, some experience serious psychological or emotional problems while others show worrying behavioral changes. It is useful to consider the symptoms of stress in the following categories, which broadly represent increasingly severe reactions:

Level 1: Early warning signs

Level 2: Psychological symptoms

Level 3: Emotional symptoms

Level 4: Physical symptoms

Level 5: Behavioral symptoms

Level 6: Breakdown

2.16.1 Level 1 : Early Warning Signs.

When you feel stressed, you are usually aware of excess pressure and may describe yourself as being:

- Under pressure
- On edge
- Strained
- Tense
- Overloaded
- Hassled
- Uneasy
- About to explode
- Anxious
- Without your sense of humor
- Uptight

2.16.1.1 Quick tips to stop stress in its tracks

- Stop what you are doing and inwardly say, ‘Calm!!!’ or ‘relax!!!’ to yourself.
- If you are sitting down, stand up and gently stretch to your fullest possible extent.
- Take a deep breathe in and let it out slowly, concentrating on the movement of your diaphragm. Do these two or three times until you start to feel more in control.
- Shake your hands and arms briskly, and then shrug your shoulders.
- If possible, go for a brisk walk, even if it is only briefly around room or to the bathroom, to help get your circulation going again.
- If possible, go somewhere private and groan or shout as loudly as you can. This can be very therapeutic. Some people find it helpful to punch a soft cushion as hard as possible.
- Choose an appropriate, personal positive thought (for example, I am feeling positive pressure, not negative stress’) and repeat this regularly to yourself.

2.16.2 Level 2 : Psychological Symptoms

- Inability to concentrate
- Frustration and helplessness
- Difficulty in making simple decisions
- Muddle thinking
- Difficulty in making rational judgments
- Memory lapses
- Depression
- Tendency to become vague and forgetful
- Making rash decisions
- Tendency to lose perspective
- Undue mental tiredness
- Loss of self-confidence
- Negative self-talk
- Lost sense of humor
- Under feeling of time pressure

(If you ticked three or more symptoms, you are likely to be experiencing a significant amount of psychological stress.)

2.16.2.1 Attack plan to help reduce your stress level

- Make sure you are eating a healthy diet and that you do not skip meals. Have healthy snacks to hand such as dried or fresh fruit, wheat flakes or oatcakes to help stop your blood sugar levels from falling and creating an additional internal trigger for the negative stress response.
- If you are not taking regular exercise, now it is the time to start.

- Learn a breathing / relaxation technique to use when your mind starts to feel like cotton wool.
- Cut back on any excesses such as alcohol intake, cigarette-smoking or reliance on recreational drugs.
- If practical, try listening to calming background music to help you unwind.
- Start learning assertiveness techniques – saying to unreasonable demands helps to reduce the pressure you are under.
- Start organizing your life and managing your time more effectively.
- Award yourself a special treat (for example, an Aayurveda/aromatherapy massage) as a reward for coping and for being such a wonderful person.
- Make a point of complementing others around you – if you make them feel good about themselves, the effects will wear off on you.

2.16.3 Level 3 : Emotional Symptoms

- Overwhelming feeling of anxiety
- Feeling of depression
- Angry outburst
- Irritability
- Feeling isolated
- Feeling of hopelessness
- Defensive and over-sensitive to criticism
- Increased pessimism
- Fear of failure
- Fear of rejection
- Feeling of guilt
- Nightmares
- Resentment or animosity
- Feeling of hostility
- Undue aggression

- Panic attacks.

(If you ticked three or more boxes, you are likely to be experiencing a significant amount of emotional stress.)

2.16.3.1 Attack plan to reduce your stress levels further:

- Work out what situations or people are causing you stress and why, then see if you can formulate sensible strategies to overcome the problem.
- Keep a stress diary.
- Learn how to prioritize tasks so you can deal with pressures one at a time.
- Practice positive thinking techniques or visualization to help boost your flagging self-confidence.
- Develop more hobbies and interest to help you relax and take your mind off your worries.
- Watch a favorite comedy film, comedian or humorous play and try to laugh as much as possible – laughter is a wonderful antidote to building stress.
- If you feel like a good cry, then have one and get it out of your system. We are the only animals who cry, and shedding tears does seem to act as an emergency reset button to help relieve excess tension.
- Treat yourself to an extra aromatherapy massage, facial or other body treatment to make you feel better in yourself.
- Consider enrolling in a yoga class.
- Use visualization to help you achieve a more relaxed state of mind.
- Consider having a few days' holiday relaxing at home so you can recharge your internal batteries.

2.16.4 Level 4 : Physical Symptoms

If you have persistent physical symptoms, you have excess adrenaline and other stress hormones circulating in your bloodstream. Long-term high levels of stress dampen your

immunity and are linked with an increased risk of a number of important illnesses, including coronary heart disease and possible even some cancers.

- Muscle tension
- Shaking hands
- Stiff Jaw
- Nausea
- Difficulty swallowing
- Lump in the throat
- Knot in the stomach
- Cramps
- Palpitations
- Rapid Pulse
- Dizziness
- Faintness
- Ringing in the ears
- Hyperventilation
- Sexual difficulties
- Panic attacks
- Restless leg syndrome
- Insomnia
- Physical tiredness
- Numbness
- Chest and / or abdominal pain
- Headache
- Indigestion / heartburn
- Diarrhea

(If you ticked three or more boxes, you are likely to be experiencing a significant amount of physical stress.)

2.16.4.1 Advance plan to reduce high stress levels

- Review your stress diary regularly to help identify your main cause of stress so you can formulate sensible plans to overcome them.
- Consider having a few day's holiday at home.
- Learn how to meditate so you can find an inner spot of calm when all around you is in a state of tension or chaos.
- Surrounded yourself with calming colors.
- Take special care to eat a healthy, whole food, organic diet.
- Take a good vitamin and mineral supplement providing around 100 percent of as many vitamins and minerals as possible. You may need extra-B-group vitamins if you are feeling tired all the time.
- Take an additional antioxidant supplement so you are obtaining at least:
 - 500-1,000 mg vitamin C per day
 - 400 mg vitamin E daily.
- Consider taking coenzyme Q10 to help boost oxygen usage by your cells and to improve your energy levels.
- Take evening primrose oil (at least 1,000 mg daily) to help correct any hormone imbalance resulting from increased stress.
- Consider taking an adaptogenic herb.

2.16.5 Level 5 : Behavioral Symptoms

- Avoidance of certain people and places
- Social withdrawal
- Phobic avoidance of certain situations or things
- Absenteeism
- Becoming a workaholic with no time for relaxation
- Hair-pulling
- Increased reliance on alcohol and / or cigarettes and / or tranquilizers.

- Changes in eating patterns: increase or decreased food intake that affects body weight.
- Obsessive or compulsive behavior, for example frequent hand washing, checking and re-checking you have switched off lights or locked doors.

(If you ticked three or more symptoms, you are likely to be displaying significant behavioral symptoms of stress.)

2.16.5.1 Attack plan to help reduce your behavioral symptoms of stress

- Make plans to cut back on your alcohol intake
- Take steps to cut back on the number cigarettes you smoke. Once you feel stronger you can attempt to stop altogether.
- Seek help to rethink unhealthy behavior patterns and learn new ones- hypnotherapy may be helpful.
- Cut back on your working hours and build regular rest or exercise breaks into your day. Make a point of doing at least one activity you enjoy for at least 30 minutes each day and preferably longer.
- Arrange to have a therapeutic massage at least once a week.
- Address absenteeism by taking a planned holiday (preferably at home) the starting back at work with a promise to yourself that you will continue going in, no matter what. If problems at work need addressing, raise issues with the appropriate higher level.
- Need to change the way of living: regular yoga and meditation are proven gadgets to beat stress.

2.17 PERSONALITY AND STRESS

Personality is frequently related to the way people behave. They may be perceived by other peoples as, for example, rigid, overbearing, honest, flexible or boring. Personality involves

the total pattern of behavior that is unique and manifest in an individual's values, beliefs, interests, attitudes, expressions and actions.

Personality is defined as the particular combination of emotional, attitudinal, and behavioral response patterns of an individual

Allport (1961) defined personality as “the dynamic organization with the individual of those psychophysical system that determine his characteristic behavior and thought”.

Personality has been further defined as ‘the distinctive characteristics of individuals, the stable and changing relationships between these characteristics, the origins of the characteristics, the ways in which they help or hinder the interaction of a person with other people, and the characteristic ways in which a person thinks about himself’.

2.18 THE STRUCTURE OF PERSONALITY

Personality is directly connected with:

- Abilities, attitudes and interests
- Motives
- Modes of adjustment (Type of automatic behavior: a way of behaving, especially one that is instinctive, familiar, or habitual) and
- Defense mechanisms

2.18.1 Type-A Behavior

It was discovered in early 1960s by two American cardiologists, Meyer Friedman and Ray Rosenman during their study on stress-heart disease relationship. They defined Type-A behavior as: “An action-emotion complex that can be observed in any person who is aggressively involved in a chronic, nonstop struggle to achieve more and more in less and less time and, if required to do so, against the opposite efforts of other things or persons.” (‘Type A behavior and your Heart’)

They listed the Type- A Characteristics as follows:

- Possessing the habit of explosively emphasizing various key words in ordinary speech without real need.
- Always moving, walking and eating rapidly.
- Feeling impatience with the rate at which most of the things take place.
- Attempting to do two or more things at a time (driving the car and dictating letters, thinking about another subject when some is talking to you, signing letters while talking on the phone etc.)
- Finding it difficult to talk about things which don't have a personal interest.
- Always feeling guilty while attempting to relax.
- Trying to schedule more in to less and less time and making few allowances for the unexpected events.
- Having a chronic sense of time urgency.

Other researchers subsequently modified the concept of Type-A person as someone who is competitive, hard driving, tense, aggressive, preoccupied with deadlines, work oriented and with a high need to control their environment.

Type-A behavior is highly regarded in the western world. Most successful people demonstrate some, if not most, of the Type-A behaviors.

2.18.2 Type-B Behavior

They described Type-B behavior as: “completely free of all the habits and exhibiting none of the traits of the Type-A personality, does not suffer from impatience and time urgency, has no need to impress others with their achievements, play games in order to find relaxation and fun – not to demonstrate their ability to win and are able to work without agitation and relax without guilt.” (‘Type A behavior and your Heart’)

Type-B people seem to be more able to cope with pressure than type-As. Perhaps this is because they are less competitive and less worried about the consequences or have a lower need for achievement. Type-Bs are also less likely to suffer from work overload than type-As and may not push themselves as hard.

2.18.3 Type A Personality traits

- Schedule more and more into less and less time.
- Constantly work against the clock, doing two things at once – often against real or imagined opposition from others.
- Deny feeling tired.
- Measure success in terms of numbers (for example, numbers of clients seen or items sold).
- Believe that if you want something done well you have to do it yourself.
- Become impatient watching others do things they feel they could do better or faster.
- Are obsessed with punctuality.
- Are angry, aggressive and impatient with delays and queues; hostile to anything or anyone getting in the way of their progress.
- Have difficulty coping with sitting down and doing nothing.
- Talk a lot, particularly about themselves and often in an explosive way
- Swear a lot.
- Don't listen to other people's conversation or impatiently try to finish what others are saying for them.
- Make angry stabbing motions and other gesticulations with their hands.
- Click their tongue, nod their head, clench their fist, suck in air or pound the table when talking.
- Frequently jig their knee, drum their fingers or click their pen.
- Blink or lift their eyebrows rapidly.
- Fail to notice the beauty of things around them.
- Are very competitive and always play to win.

2.18.4 Type B Personality traits:

- Manage time and only book in what can reasonably be achieved in the time allowed.
- Never suffer from time urgency, and are therefore happy to do one thing at a time.
- Are able to work without agitation.
- Measure success in terms of quality of work and the pleasure derived from completing it properly.
- Delegate certain tasks to those more suited to them.
- Don't feel they have to impress others with their achievements unless the situation demands it.
- Feel pleased for other's success and tells them so.
- Are not bothered by lack of punctuality in themselves or others.
- Wait patiently in queues and adopt a philosophical approach to delays or mistakes.
- Don't have any free-floating hostility.
- Are happy to sit down and relax, doing nothing during quality time without guilt.
- Listen readily to others, giving them all the time they need to have their say.
- Rarely feel the need to swear.
- Tend to hold their body in a relaxed manner, with no obvious tension when talking.
- Readily appreciate the beauty of nature and art.
- Are pleasantly competitive – good losers who are always happy to see others win.

2.18.5 Type-A and Heart disease

Type-A behavior can be a contributory factor for heart disease; but does not mean that type-A behavior causes heart disease. Recent researches suggest that, despite over 40 years of study, it is still not possible to claim that there is an identifiable pattern of coronary-prone behavior. To understand the impact more meaningful way, we may have to look in to two contrasting sub-components of Type-A behavior:

- the achievement-striving pattern (Positive Type-A)
- the impatient-irritability pattern (Negative Type-A)

Persons with achievement striving pattern are competitive, result oriented and goal focused. Their positive attitude channelizes their type-A behavior into successful projects. The impatient-irritability pattern is more worrying and their type-A behavior never seems to produce successful results. They become angry and frustrated because the things do not happen the way they want the things to happen.

2.18.6 Ways of reducing Type A behavior

- Re-align your priorities and aim for things worth being rather than things worth having.
- Aim to stop being an idealist or perfectionist – accept that things can go wrong without it necessarily being the fault of yourself or others. Don't automatically look for someone to blame.
- Don't keep looking for excuses to be disappointed – start looking for excuses to say 'well done' or thank you' to others.
- Try being more relaxed and positive. Realize that Type B personalities may be just as ambitious as Type As, but they manage to reach their goals without seeming to panic.
- Force yourself to listen to what others have to say – and let them finish their sentences. Rather than butting in, stop and ask yourself whether you really have anything important to say, whether anyone would want to hear it, and if so whether this is the time to say it.
- Learn to laugh at yourself rather than at other people.
- Learn to prioritize your tasks by making a 'To Do' list and seeing what can wait until tomorrow rather than having to be done today.
- Learn to delegate appropriate tasks, even if you think you can do the job better alone.
- Make decisions in unhurried circumstances – they are more likely to be good decisions than those made in haste.
- Don't make unnecessary appointments or meetings.
- Learn to be patient. Try talking more slowly, and practice waiting in a queue without getting frustrated.
- Take a regular 'time-out' breaks during your day where you relax.
- Put aside one evening a week for personal pleasure – to visit the theatre, for example, or read a good book while listening to a relaxation tape.

- Start taking regular non-competitive exercise to reduce your levels of stress – brisk walking, gentle jogging, swimming or cycling is ideal.
- Stop watching the clock: try not wearing a watch and taking the clock off the wall.
- Practice telling people how you feel: talk about your emotions rather than bottling them up.

2.18.7 The hardy personality

Suzanne Kobasa, a psychologist from New York University, developed this concept. The Hardy Personality theory states that: “among persons facing significant stressors, those high in hardiness will be significantly less likely to fall ill, either mentally or physically than those who lack hardiness or who display alienation, powerlessness and threat in the face of change.”

Cobasa and her colleagues wanted to know what was different about some people that allowed them to stay healthy under pressure. They studied several hundred Managers over 5 years period to find what differentiates the high “High stress-Low illness” group from “High stress-High illness” group.

They found three Characteristics that differentiated the groups;

- Commitment
- Control and
- Challenge

She further described the terms as follows:

- **Commitment:** “the ability to believe in truth, importance and interest of who one is and what one is doing and, thereby, the tendency to involve oneself fully in the many situations of life including work, family, interpersonal relationships and social institutions.”
- **Control:** “tendency to believe and act as if one can influence the course of events. Persons with control seek explanations for why something is happening with emphasis on their own responsibility and in terms of other actions or fate.”

- **Challenge:** “the individuals belief that change, rather than stability, is the normative mode of life. Challenge means that an individual looks for stimulation and change, and can tolerate uncertainty.”

Kobasa et al summarized Hardy person (one who can deal with extended pressure without suffering from the ill effects of stress) as someone who must: “be aware of and involved with oneself, believe he can control and transform the events of his experience, and perceive change as an opportunity and challenge rather than threat. The longer one has this overall orientation, the greater will be his accumulated skills and resources for dealing with stress. When stress does occur, he will be energized and excited rather than debilitated and worried.”

The opposite of hardy personality is the stress-prone who doesn’t feel in control and suffers stress from small amounts of pressure.

2.19 THE SCHEDULE OF LIFE EVENTS AND THE STRESS SCALE

(The Holmes-Rathe of life change units)

• Death of a spouse	100
• Marital separation	65
• Death of close family member	63
• Personal injury or illness	53
• Marriage	50
• Loss of job	47
• Marital reconciliation	45
• Retirement	45
• Change in health of a family member	44
• Wife’s pregnancy	40
• Sex difficulties	39
• Gain of a new family member	39
• Change in financial status	38
• Death of a close friend	37

• Change to a different kind of work	36
• Increase or decrease in arguments	35
• Taking out a bigger mortgage	31
• Foreclosure of mortgage or loan	30
• Change in work responsibilities	30
• Son/daughter leaving home	29
• Trouble with in-laws	29
• Outstanding personal achievement	29
• Wife beginning or stopping work	29
• Revision of personal habits	24
• Trouble with business superior	23
• Change in work hours/ conditions	20
• Change in residence	20
• Change in schools	20
• Change in recreation	19
• Change in social activities	18
• Taking out a small mortgage	17
• Change in sleeping habits	16
• Change in number of family get-togethers	15
• Change in eating habits with spouse	15
• Vacation	15
• Minor violations of law	11

2.20 RESPONDING TO STRESS

In recent years, much research has been undertaken into the general area of stress and the measures individuals can take to reduce the stress in their lives.

Adams' (1980) study, is a well-respected approach to dealing with personal stress.

There are a number of ways for managing the stress in one's life. We are all unique and what works well for one person may be completely ineffective for another. Here is a range of ideas for responding to stress, each of which has worked well for someone, somewhere.

2.20.1 Step 1 - Become More Knowledge about Stress.

- Understand the process and effects of stress.
- Identify your major sources of stress – situations, people, etc.
- Anticipate stressful periods and plan for them.
- Develop a collection of successful stress management techniques and practice them.
- Learn to identify the opportunities for personal growth inherent in periods of stress.
- Find the level of stress that is best for you; remember that both insufficient and excessive stress is potentially harmful.

2.20.2 Step 2 - Take a Systematic Approach to Problem Solving

- Define your problem specially; divide it into manageable components that can be dealt with easily.
- Gather sufficient information about the problem and put it into perspective.
- Discover why the problem exists for you.
- Review your experience with the present problem or similar ones.
- Develop and evaluate a set of alternative courses of action.
- Select a course of action and proceed with it.

2.20.3 Step 3 - Come to Terms with your Feelings

- Differentiate between your thoughts and your feelings
- Do not suppress your feelings; acknowledge them to yourself, and share them with other.
- Learn to be flexible and adaptive
- Accept your feelings.

2.20.4 Step 4 - Develop Effective Behavioral Skills

- Don't use the word can't when you actually mean won't.
- When you have determined what needs to be done with your life, act on your decisions.
- Use free time productively.
- Be assertive
- Manage conflicts openly and directly
- Avoid blaming other for situations
- Provide positive feedback to other
- Learn to say 'No'
- Deal with problems as soon as they appear; if you procrastinate, they may intensify.
- Evaluate the reality of your expectations, avoiding both the grandiose and the catastrophic.
- Learn to let go of situations and take breaks.

2.20.5 Step 5 - Establish and Maintain a Strong Support Network

- Ask for direct help and be receptive when it is offered.
- Develop empathy for others.
- Make an honest assessment of your needs for support and satisfaction with the support you currently receive.
- List six people with whom you would like to improve your relationship and, in case, identify one action step you will take toward such improvement.
- Rid yourself of dead and damaging relationships.
- Maintain high-quality relations
- Tell the members of your support network that you value the relationships shared with them.

2.20.6 Step 6 - Develop a Lifestyle that will Buffer against the Effects of Stress.

- Regularly practice some form of vigorous stretching and/or recreational exercise.

- Engage regularly in some form of systematic relaxation
- Use alcohol in moderation or not at all
- Do not use tobacco
- Obtain sufficient rest on a regular basis
- Avoid caffeine
- Avoid foods high in sugar, salt, white flour, saturated fats and chemicals.
- Plan your use of time both on a daily and long-term basis.
- Seek out variety and change of pace
- Take total responsibility for your life.
- Maintain an optimistic attitude
- Do not dwell on unimportant matters.

2.20.7 Step 7 - Concentrate on Positive Spiritual Development

- Adopt the attitude that no problem is too monumental to be solved.
- Engage regularly in prayer or meditation
- Establish a sense of purpose and relaxation
- Seek spiritual guidance
- Learn to transcend stressful situations.
- Believe in yourself.
- Increase your awareness of the interdependence of all things in the universe.

2.20.8 Step 8 - Plan and Execute Successful Lifestyle Changes.

- Expect to succeed; approach projects one step at a time.
- Keep change projects small and manageable.
- Practice each change rigorously for 21 days; then decide whether to continue with it.
- Celebrate your success. Reward yourself.

2.21 MORE IDEAS FOR MANAGING STRESS

Given below a list of ideas for managing the stress effectively as recommended by many experts, researchers and authors on the topic.

- Don't let thing dominate you, such as the need to get a report finished or to study statistical information.
- View life as a series of challenges to seek, not obstacles that need to be avoided.
- Engage in regular exercise that is convenient and which gives pleasure, such as swimming.
- Maintain regular contact with friends who support you in the event of problems at work.
- Maintain a reasonable diet and ensure you get plenty of sleep.
- Take responsibility for your life and your emotions, but never blame yourself.
- Protect your personal freedoms and space. Do what you want and feel is right, but respect the right of others.
- Don't tell others what to do, but if they intrude, tell them so!
- Surrounded you with cues from positive thoughts and relaxation.
- Open yourself to new experiences. Try new places, new things, new food and drink and enjoy meeting new people.
- Take short periods of private relaxation at regular intervals during the day.
- Don't drift along in stressful relationships or situations. Do something about it!
- Review your obligations and commitments from time to time and make sure they are still good for you.
- Avoid the use of medication, such as sleeping pills, tranquillizers and other stress resolving drugs wherever possible.
- Above all, when things aren't working out and stress is building up, TALK TO SOMEONE!

2.22 EXERCISE AND FEEL GOOD FACTOR

'Hans Selye discovered stress in 1935 as a syndrome occurring in laboratory rats... His findings were rejected by physiologists until the 1970s.' Russel Viner, University of London, An

International Review of Research in the Social Dimensions of Science and Technology, *Social Studies of Science Journal*, vol.29, issues 3, June 1999.

- Exercise causes the brain and spinal cord to produce their own powerful opium-related drugs called endorphins. These enhance mood because they have a chemical make-up similar to opium-based drugs, and explain why people feel a ‘high’ after exercise, particularly aerobic-type exercise, like running, dancing, aerobics, yogic postures and so on. This is why people enjoy dancing until they’re tired and sweaty – lots of aerobic movement and a hard, steady beat.
- Exercising will make people feel more attractive as it improves their self-image of their body.
- It reduces and prevents depression by lifting mood. It allows them to forget about their worries and focus on the moment.
- Stress and nervousness are dramatically reduced by the chemical effects of exercise. Physical activity neutralizes the stress hormones that makes you jittery and leaves you feeling more balanced. Physical activity relaxes your muscles which also allow you to feel calmer.
- Research has shown that mental performance on IQ tests improves greatly following just twenty minutes of aerobic exercise. Physical activity improves alertness and the speed at which we think.

2.23 THREE VILLAINS IN STRESS MANAGEMENT

Caffeine, Alcohol and Nicotine are found playing the roles of villains in the process of stress management.

2.23.1 Caffeine, Stress and Sleep

Caffeine found in tea, coffee, chocolate, soft drinks such as colas is a stimulant drug whose immediate effect is to reduce tiredness and make the body feel alert. Coffee is often

consumed in large amounts when you are under pressure, and this can make symptoms of stress even worse. As it is also a stimulant, it interferes with sleeping.

2.23.2 Caffeine Content in Drinks

Type of drink	Serving	Caffeine
• Brewed coffee	10 oz	170-200 mg
• Decaffeinated coffee	10 oz	10 mg
• Instant coffee	10 oz	90-140 mg
• Tea	10 oz	60-100 mg
• Coke	2 oz	40-60 mg
• Milk chocolate	1 oz	6 mg
• Dark chocolate	1 oz	20 mg

2.23.3 Alcohol and Stress

When feeling stressed, it is common to feel ‘I must have a drink’. Up to a certain point, alcohol seems to be beneficial, in that a moderate intake – especially of red wine – has been shown to lower a high blood pressure, reduce stress levels and decrease your risk of coronary heart diseases by as much as 25-45 per cent. This is mostly due to the powerful antioxidants found in red wine, and the thinning effect of alcohol on the blood.

In fact new research suggests that if you have high blood pressure and drink within the recommended limits, your risk of dying from a stroke is 40 per cent less than for a teetotaler. These benefits of moderate intakes of alcohol are thought to be linked with the fact that those who drink are more likely to laugh and giggle than non-drinkers. Laughter helps to buffer the effects of stress and can also improve immunity and increase resistance to disease.

There is a cut-off point at which the benefits of alcohol intake are lost and excess alcohol intake is harmful to health. Once this point is reached, your risk of high blood pressure, coronary

heart disease and stroke reverse and becomes significantly increased. At the same time, the risk of liver damage leading to cirrhosis also rises. It is therefore important not to let your alcohol intake rise above that which may be beneficial for health, no matter how stressed you feel, as this will magnify the harmful effects of the stress itself.

2.23.4 Healthy Drinking Guidelines

- Men should aim to drink no more than 3-4 units of alcohol per day. Consistently drinking 4 or more units a day is not advised, however.
- Women should drink no more than 2-3 units per day and consistently drinking 3 or more units a day is not advised. Women who are pregnant or planning a baby should aim to avoid alcohol altogether.
- You should also aim to have one or two alcohol-free days per week.
- For men, drinking more than 50 units of alcohol per week is considered dangerous, while for women, the equivalent figure is 35 units.
- Most people tend to overestimate the strength of spirits and underestimate the strength of beer, it is important to realize that :
 - Someone drinking two pints of beer has consumed four units.
 - Someone drinking two glasses of wine and double vodka has also consumed four units.

2.23.5 Simple Tips to help You Cut your Alcohol Intake:

- When drinking alcohol, sip slowly and keep putting your glass down rather than holding it in your hand – this will reduce the amount you sip out of habit, when talking.
- Savor each sip and hold it in your mouth for longer.
- Alternate each alcoholic drink with a non-alcoholic one.
- Many bars offer exotic, non-alcoholic cocktails that are delicious and full of nutrients.
- Drink mineral water with a dash of fresh lemon juice, or low calorie drinks.
- Simple tips to help you cut your alcohol intake:
- Mix chilled white or red wine with sparkling mineral water to make a refreshing spritzer.

- Drink fruit/herbal teas – these are delicious, relaxing or stimulating depending on which you choose and, as they are drunk without milk, have the additional bonus of being calorie free.
- Practice saying ‘No thanks, I’m cutting back for my health / blood pressure’ or ‘No thanks, alcohol and stress don’t mix well together,’ or ‘No thanks, I’m driving.’
- There is no shame in wanting to cut back the amount of alcohol you drink and your firm stand may well help someone else decide to do the same.

2.23.6 Smoking and Stress

During times of stress, it is common for smokers to increase the number of cigarettes they smoke. This is a subconscious behavioral response since nicotine produces a drug-like soothing effect on the nervous system. However, nicotine also acts on the body to produce symptoms similar to some of those occurring in the stress fight or flight response such as muscle tension, shiver and restlessness, as well as affecting bowel function. Smoking is also linked with sex hormone imbalances – smoker’s fertility falls and women who smoke are likely to enter the menopause up to two years earlier than non-smokers.

Smoking is a powerful cause of premature skin ageing and wrinkles. Cigarette smoke contains over 4000 different chemicals, many of which are harmful and cancer forming. These chemicals damage the lining of arteries to increase the risk of them hardening and furring up, high blood pressure, coronary heart disease and stroke as well as affecting cell division to increase the risk of cancer. Smoking therefore maximizes many of the harmful effects produced by prolonged, excessive stress.

If you can give up:

- Within 20 minutes your blood pressure and pulse rate will fall significant as arterial contraction decreases.
- Within 48 hours the stickiness of your blood and quantity of blood clotting factors present will fall enough to reduce your risk a heart attack or stroke.

- Within one to three months the blood supply to your peripheries will increase, and your lung function will improve by up to a third.
- Within five years your risk of lung cancer will have halved.
- Within ten years your risk of all smoking –related cancers (for example, lung, mouth, throat, and bladder) will have reduced to almost normal levels.

2.23.7 Tips to help you Stop Smoking:

- Find support – giving up nicotine is easier with a friend or partner.
- Name the day to cut back or give up and get into the right frame of mind. If cutting back, cut out a number of cigarettes per day. Then continue reducing your intake until you gradually stop, or until you feel ready to cut out the remaining cigarettes altogether.
- Get rid of temptation. Throw away all smoking papers, matches, lighters, ashtrays, spare packets, etc. before the day arrives.
- When you want to smoke, instead of saying, ‘I must have a cigarette’, change your thought patterns and say instead, ‘while I would like a cigarette, I don’t need one because I no longer smoke,’ then remind yourself of all the reasons you have decided to quite.
- Keep a quit chart and tick off every day you keep within your target level of consumption or have lasted without a cigarette. Plan a reward for every week of success.
- Learn to relax. Have a massage, practice yoga or meditation. You need something to replace the anxiety-relieving effects of nicotine.
- Find a hobby to take your mind off smoking – a habit that keeps your hands busy is best- and keep active with DIY (do it yourself) jobs in the evening rather than sitting in front of the TV.
- Increase the amount of regular exercise you take as this can help to curb withdrawal symptoms.
- Identify situations where you would usually smoke and either avoid them or plan ahead to overcome them, for example practice saying, ‘No thanks, I’ve given up’, or ‘No thanks, I’m cutting down.’
- Ask friends and relative not to smoke around you.

- Watch our diet. Avoid excess saturated fats and count calories so you don't put on weight. Chew sugar-free gum or drink water and unsweetened herbal teas instead.
- Save the money previously spent on cigarettes to buy a luxury for yourself or to spend on a happiness retreat or a stress-busting weekend break.

2.24 SELF-HELP TO HANDLE OUTCOMES OF STRESS

'Stress is any change we have to adjust to.' Simma Lieberman, Simmer Lieberman Associates website, 'What is stress?' 24 June 2004.

2.24.1 Anger

Anger is a potential destructive emotion that results when stress and frustration build up beyond your ability to cope. Anger uses up a lot of energy and triggers a high level of internal emotional and physical stress, which stops you thinking rationally. Some people bottle up their anger, others let it out. All forms of anger are stressful and unhealthy.

Anger often results when:

- You feel frustrated at not being able to do what you want, when you want.
- You can't get your own way.
- People do not do what you expect them to do.
- You cannot find the words to express yourself properly.
- Communication breaks down.

Self-help

- Anger comes from yours thoughts, and learning to think in a different way is an effective method of defusing your anger response.
- It is also helps to become more assertive – so you are not put upon – and to learn how to express your emotions more fully. By allowing someone else to make you feel angry, you are giving them power over you. To remove this power, you need to take responsibility for your own anger and realize that you are in control of it, nobody else.

- To help yourself do this, use ‘I’ language – ‘I am angry because....’ rather than ‘You/They/This makes me angry because.....’
- If you are too angry to think straight, then say ‘I’ll discuss this later’ and move away from the situation temporarily. When you feel in control again, go back and address the issue – don’t avoid it.
- When you are on your own, pretend the person or situation that made you feel angry is present and describe out loud exactly how you feel. Say all the things you want to say to that person or in that situation, to get them out of your system.
- Keep an angry diary to record exactly when you feel angry and why. If you can work out the triggers that arouse your emotions, you can help to circumvent them at an early stage.
- When you feel angry rising, practice a slow breathing exercise and consciously try to relax. This is your personal equivalent of biting your tongue or counting to ten.
- Use an appropriate personal affirmation such as, ‘I will not feel angry, I will stay in control’ or, ‘keep cool, calm and collected’, and keep repeating this to yourself when appropriate.

2.24.2 Anxiety and Panic Attacks

Anxiety is one of the main symptoms of stress and is associated with feelings of apprehension, dread, panic and impending doom. Those with morbid anxiety worry excessively about trivial matters and frequently experience other typical stress symptoms such as restlessness, palpitations, tremor, flushing, dizziness, hyperventilation, loose bowels, sweating, muscle tension and insomnia.

Panic attacks are surprisingly common – an estimated one in 20 people suffer on a regular basis.

Over-breathing: Panic attacks are now thought to be triggered by over-breathing-a condition known as hyperventilation syndrome. During times of extreme stress, your breathing pattern changes as part of the fight-or-flight response, so you take quick, irregular, shallow breaths that

help to draw in more oxygen more quickly. This in turn means you blow off more carbon dioxide – a waste acid gas produced by your metabolism.

If you continue hyperventilating, you will soon exhale so much carbon dioxide that your blood loses acidity and becomes increasingly alkaline. This affects the transmission of nerve signals and causes physical symptoms of dizziness, faintness and pins and needles. These symptoms heighten your sense of panic so you tend to breathe even faster, blowing off even more carbon dioxide, to trigger a panic attack. People who habitually hyperventilate sometimes experience frightening physical symptoms, including chest pain, palpitations, visual disturbances, numbness, severe headache, insomnia and even collapse.

Self-help

- Concentrate on breathing slowly, deeply and quietly to prevent hyperventilation.
- When you feel panic rising say, ‘Stop it!’ quietly to yourself and breathe in and out slowly.
- If panic continues to rise, cup your hands over your nose and mouth so you breathe back some of the excess carbon dioxide gas you have blown off.
- If you are somewhere private, breathe in and out of paper bag.
- Don’t escalate the panic by worrying about what is going to happen.
- Try to distract your thoughts by studying your surroundings as you wait for the attack to pass- symptoms usually subside quickly.
- Stay in the situation if practical and you are in no physical danger. If you run away rather than facing your fear, it will be more difficult to cope and to avoid another panic attack when you experience the same situation again.
- Talk to someone about your worries, either a valued friend or a professional counselor, to help off-load your feelings so they don’t build up inside.
- Take regular exercise such as swimming, walking or cycling to help burn off stress hormones.
- Avoid excessive caffeine.
- Eat little and often to keep your blood sugar levels up – never skip meal, especially breakfast.

- Cut back on sugar, salt, saturated fats and convenience foods.
- Watch your alcohol intake and try to limit yourself to a maximum of one or two alcoholic drinks per day.
- Look into alternative therapies such as acupuncture, herbalism, hypnotherapy, auto-suggestion, yoga, meditation and visualization.
- Depression
- Mood swings are a normal part of everyday life, but sometimes they can get out of hand and if your mood swings too low, mild depression can occur.
- One in eight men and one in five women will suffer from severe depression at some time during their life.
- Depression is caused by an imbalance of the chemical messengers in the brain that are responsible for passing signals from one brain cell to another. If levels of one or more of these fall too low, the brain does not function properly and a variety of psychological and physical symptoms can occur.

2.24.3 Depression

Symptoms of depression are:

- A general slowing down.
- Nervousness, anxiety and agitation.
- Constant feelings of tiredness or exhaustion.
- Headache.
- Difficulty concentrating
- Loss of self-esteem and lack of confidence.
- Preoccupation with your health.
- Low sex drive.
- Loss of interest of life
- Low mood with crying and sadness.
- Loss of interest in everyday life.

Self-help

- Make a 'To Do' list of a few simple tasks to achieve each day, even when you don't feel like doing much at all.
- Take care of your personal appearance – even though there may seem little point, try to take pride in having clean hair, clean ironed clothes, polished shoes and clean fingernails.
- Combat loneliness by talking to as many people as possible during the day; writing letters and making phone calls will help too.
- Consider getting a pet to bring some extra interest and companionship into your life – but only if you have the commitment to look after it properly.
- Self-help
- Take regular exercise as this triggers the secretion of natural antidepressant substances in the brain and will help to lift a low mood.
- If you find yourself thinking negative thoughts, turn them instantly into positive ones.
- Keep a diary and at the end of each day write down what you have achieved, what you have enjoyed, and what you would like to do tomorrow to bring more happiness into your life.
- Eat plenty of fruit, vegetables, wholegrain cereals, nuts and seeds.
- Get at least half your daily calories from complex, unrefined carbohydrates such as brown rice, wholegrain cereals, whole-wheat bread etc.
- Limit your intake of fats, alcohol, salt and caffeine.
- Increase your intake of foods rich in the B group vitamins such as yeast extract, whole grains, soya, oily fish and green leafy vegetables.
- Ayurveda/yoga/Herbal therapy can lift low mood and improve alertness and concentration, providing relief from feeling of anxiety, agitation, disinterest, insomnia, headache and despair.

2.24.4 Insomnia

Stress is the most common cause of lack of sleep and, in turn, lack of sleep is a common cause of stress. Once you develop insomnia, stress and lack of sleep can keep feeding on each other to make each condition worse.

We are designed to spend around a third of our life asleep, yet four out of ten people do not get a regular good night's rest. As a result, they wake up feeling tired, make more mistakes during the day and may repeatedly fall asleep for several seconds at a time. These so-called micro-sleeps are a common cause of accidents, both on the roads and in the home. Stress related insomnia may be transient (lasting only a few days) short-term (lasting 1-3 months) or long term (lasting over 3 months).

Self-help

- Avoid napping during the day as this will make it more difficult to sleep at night.
- Take regular exercise, as active people tend to sleep more easily.
- Eat a healthy, low-fat, wholefood diet with plenty of complex carbohydrates and fruit and vegetables.
- Try to eat your evening meals before 7 pm and resist late-night snacks, especially of rich food.
- A warm, milky drink just before going to bed will help to relax-hot milk with cinnamon or nutmeg is better than chocolate drinks, which contains some caffeine. Don't drink too much fluid in the evening, however – a full bladder is guaranteed to disturb your rest.
- If you can't sleep, don't lie there tossing and turning. Get up and read (or watch the television for a while). If you are worried about something, write down all the things on your mind and promise yourself you will deal with them in the morning, when you are feeling fresher. When you feel sleepy, go back to bed and try again.
- Try alternative therapies such as acupuncture, reflexology yoga and meditation.
- Herbal supplements containing natural extracts can induce a refreshing night's sleep without the side effects associated with drugs.
- Soothing herbal teas can also help you sleep. It is also worth investing in a herbal pillow filled with dried lavender flowers to place at the head of your bed.
- Consult a homeopath for a remedy that matches your symptoms.
- A hypnotherapist will help to uncover subconscious fears and anxieties that are causing stress, then uses suggestions to help you relax, lose your fears and sleep more easily.

- There are many different types of massage that use a variety of rubbing, drumming, kneading, friction and pressure strokes. All are very relaxing, therapeutic massage/Rekhi is particularly useful in helping sleep problems due to stress and muscle tension.

2.24.5 Indigestion and heartburn

People under stress have increased activity in the nerve endings supplying the stomach. This can lead to increased secretion of acidic juices and churning sensations (butterflies) due to increased muscular contraction of the stomach. This is linked with symptoms of heartburn (acid reflux from the stomach up into the esophagus) and peptic ulcers in the stomach or duodenum.

Self-help

- Eat little and often throughout the day, rather than having three large meals.
- Drink fluids little and often, rather than larger quantities at a time.
- Avoid hot, acid, spicy, fatty foods.
- Avoid tea, coffee and acidic fruit juices.
- Cut back on alcohol intake.
- Avoid aspirin and related drugs (for example, ibuprofen) if you are prone to indigestion – if necessary, take Paracetamol instead.
- Avoid stooping, bending or lying down after eating.
- Avoid late-night eating.
- Elevate the head of the bed about 15-20 cm (for example, put books under the legs at that end).
- Wear loose clothing, especially around the waist.
- Drink milk or take an antacid to help ease burning sensations.
- Longer-term measures to help control your symptoms include losing any excess weight and not smoking cigarettes.

2.24.6 High blood pressure

High blood pressure is common and affects as many as one in five adults. High blood pressure is now thought to be linked with excessive levels of stress in some people. If your blood pressure stays high all the time and remains untreated, however, it will damage your circulation and contribute to hardening and furring up of the arteries. This turn increase your blood pressure even more so your risk of a heart attack or stroke increases.

Even if your blood pressure is dangerously high, you may feel relatively well. Because of this, it's worth having your blood pressure checked on a regular basis.

Self-help

- Lose any excess weight – shedding as little as 3-4 kg in weight can be enough to bring a moderately raised blood pressure down to normal levels again.
- If you smoke, make a concerted effort to stop – chemicals in cigarettes damage artery linings, cause spasm and constriction of vessels, and raise your blood pressure.
- Reduce your overall consumption of fat so that it makes up no more than 30 per cent of your daily energy intake – with saturated fat ideally making up no more than 15 per cent of daily calories. Eat more of the healthy fats such as olive, walnut, rapeseed and fish oils instead, which helps to keep the circulation healthy.
- Eat plenty of fresh fruit and vegetables for protective vitamins minerals and fiber.
- Keep alcohol intake within recommended limits.
- Increase the amount of exercise you take.
- If you are diabetic, make sure your blood sugar levels are well controlled.
- Consider taking an antioxidant supplement which may protect against hardening and furring up of the arteries. The most important dietary antioxidant are vitamins A/beta-carotene, C, E and selenium.
- Yoga is excellent for improving joint flexibility, relieving stress and reducing high blood pressure.

- Garlic-powder tables can lower high blood pressure, high cholesterol levels and blood stickiness enough to reduce the risk of a stroke by almost a half, and the risk of a coronary heart disease by a quarter.

2.24.7 Irritability

Everyone becomes irritable from time to time when they are tired, especially if they haven't eaten properly or skipped a meal and their blood-sugar levels is low.

Self-help

- Say 'Calm' quietly to yourself and practice a breathing exercise.
- Keep a pack of dried fruit or rice cakes at hand and have a healthy snack if irritability is likely to be linked with low blood sugar levels.
- Take a brief break from what you are doing, even if it is just to visit the bathroom – exercise will help to boost your circulation so your brain receives more oxygen, energy and vital nutrients.
- Visualize the person or situation that makes your irritable passing right through you and leaving you unaffected.
- Try to identify people or situations that regularly tend to irritate you and work out why.
- Eat regular meals – never skip breakfast or lunch.
- Avoid excess caffeine or nicotine.
- When all else fails, count silently to ten.

2.25 STRESS MANAGEMENT IN INDIAN ETHOS

From Bhagvat Gita:

'arjuna uvāca
dr̥ṣṭvemaṁ svajanaṁ kṛṣṇa
yuyutsuṁ samupasthitam
sīdanti mama gātrāṇi
mukhaṁ ca pariśuśyati' (BG 1.28)

*‘vepathuś ca śarīre me
roma-harṣaś ca jāyate
gāṇḍīvaṁ sraṁsate hastāt
tvak caiva paridahyate’ (BG 1.29)*

*na ca śaknomy avasthātum
bhramatīva ca me manaḥ
nimittāni ca paśyāmi
viparītāni keśava (BG 1.30)’*

Meaning: "Arjuna said: My dear Kṛiṣṇa, seeing my friends and relatives present before me in such a fighting spirit, I feel the limbs of my body quivering and my mouth drying up. My whole body is trembling, and my hair is standing on end. My bow Gāṇḍīva is slipping from my hand and my skin is burning."

"I am now unable to stand here any longer. I am forgetting myself, my mind is reeling. I foresee only evil, O killer of the Keśi demon."

The above description is exactly about a person who is highly stressed. The Bhagavat Gita is considered as the most ancient literature available on stress management.

2.25.1 Mind-Body Connection

“Mind influences body much more than body influences mind.” This is not simply a popular belief, but an established theory in the field of psychology. A recent medical research suggests that negative emotions can be fatal. Over 300 men and women with heart disease were classed in to negative thinkers and non-negative thinkers. They were followed for 10 years and it was found that the risk of premature death was nearly 4 times higher in those who had negative thoughts (27% compared to 7%).

2.25.2 Indian View of Man

A person may be explained in 5 different ways in Indian philosophy.

According to Taittiriya Upanishad (II, 105) there are 5 koshas (sheaths) enfolding the soul:

- Annamaya (the sheath of food)
- Pranamaya (the sheath of Vital Breath)
- Manomaya (the sheath of the Mind)
- Vijnanamaya (the sheath of Intellect)
- Anandamaya (the sheath of Bliss)
- Annamaya: Grabbing tendency; materialistic person who is only satisfied with physical acquisition of things for satisfaction of bodily hunger of all types.
- Pranamaya: Person with conscious acts of breath. These types of person are energy centered. They unleash lots of vital energy for activities.
- Manomaya: The person consisting of mind. A thinking man who gives more importance to the psychology of action than action itself.
- Vijnanamaya: The person consisting of intellect and understanding. He takes action based on the advices of conscience and wisdom.
- Anandmaya: Person consisting of bliss. This person has attained the summit of realization and has attained all divinely qualities.

2.25.3 Mind-Soul

“Atmano rathinam viddhi, shariram ratham eva tu
Buddhi tu sarathi viddhi, manah pragraham eva cha.”

-Kathopanishad

“Know the soul (Atman) as the lord seated on the chariot, body as the chariot, intellect (buddhi) as the driver of the chariot and mind (manas) as connecting cords.”

Upanishad used a beautiful metaphor of a monkey to explain the character of human mind: “The human mind is like a monkey bitten by a scorpion: which has been made to drink an intoxicating liquor and finally a demon entering it.”

“Chanchalam hi manah Krishna Pramathi balabadhridam
Tasyaham nigraham manya vairov suduskaram.” (BG- VI- 34)

(The mind, O Krishna is restless, turbulent, strong, and unyielding;
I regret it of quite as hard to achieve its control, as that of the wind.)

The wrong thought waves can be controlled through repeated practice and non-attachment, according to Pathanjali: ‘Abhyasavairagyabhyam tanniradha’ (YS-1-12)

It further states that 5 elements are essential for this: “Shraddha-virya-smriti-samadhi-prajna-purbak itaresham” (YS-1-20)

The concentration of the true spiritual aspirant is attained through faith, energy, re-collectedness, absorption and illumination.

2.25.4 Role of Will Power

Bhagvat Gita (V-27-28): “shutting out external objects; steadying the eyes between the eye brows; restricting the even currents of prana and apana inside the nostrils; the sense, the mind and the intellect controlled, with moksha as the supreme goal; freed from desire, fear and anger: such a man of meditation is verily free forever.”

The success depends on the will power of the person. The causes of failure are (YS-1-30):

- Sickness
- Mental laziness
- Doubtful mind

- Lack of enthusiasm
- Idleness
- Craving for sense pleasure
- False perception
- Despair in life
- Other distractions

Four different social emotions towards attaining mental calmness are:

- Maitri- friendliness towards the happy
- Karuna- compassion for the unhappy
- Mudita- delight in the righteous
- Upeksha- indifference towards the wicked

Yogasutra of Pathanjali: “Avidyasmita-raga-dvesabhinivesah Klesah” (YS 2-3)

These obstacles- the causes of man’s sufferings – are ignorance, egoism, attachment, aversion, and the desire to cling the life.

“Samadhi-bhavanardh: Klesah-thanukarnardharv” (YS 2-2)

Thus we may cultivate the power of concentraion and remove the obstacles to enlightenment which causes all our sufferings.

Yogasutra of Pathanjali: 5 different stages of development of mind are

- Mudha (inert or dull): ILL THINKING of others; no action.
- Kshipta (turbulent): wild, angry and destructive mind with negative motions.
- Vikshipta (scattered): undisciplined mind without peace and happiness.
- Ekagra (concentrated): noble thought with positive values; noble destiny through noble act, noble habit, and noble character.

- Niruddha (cessation of mind): mind ceases to exist in its present form and divine grace start flowing.

“Sow a thought, reap an act. Sow an act, reap a habit. Sow a habit, reap a character. Sow a character, reap a destiny.”

Bhagvat Gita:

‘Dyayayato visayanpumsah sangastesupajayate,
Sangastsanjayate kamah kamatkrodho bhijayate.
Krodhadbhavati samohah sammohatsmritivibhramah
Smrtibhramsadhuddhinaso buddhinasatpranasyati” (Ch:2/62-63)

Repeated thinking about sense objects leads to attachment towards them, attachment to desire, desires (strong likes and dislikes) to anger/frustration (greed, lust, fear, possessiveness etc.) which in turn leads infatuation/delusion. When you are deluded, you lose your memory/awareness, with this the power of discrimination is destroyed, with the destruction of discrimination, yourself itself gets lost.

Bhagvat Gita:

‘Krodhat vawati sammoham
Sammohat smritinasham
Smritinashat buddhibhramsham
Buddhibhramsyt pranasyati”

Anger leads to delusion
Delusion to loss of memory
Loss of memory to loss of intelligence
Loss of intelligence leads to destruction.

Bhagvat Gita:

‘Bhahyaspasesvasaktatma

Vindatyatmani yatsukham
Sa brahmayogayuktatma
sukhamaksayamasnute” (Ch:5/21)

Unconcerned about sense pleasure, one who finds joy in the self, united with God in yoga, attains boundless happiness.

Bhagvat Gita:
‘Saknotihaiva yah sodhum
praksariravimoksanat
Kamacrodhodbhavam vegam
Sa yuktah sa sukhi narah” (Ch:5/23)

A person in this world who can tolerate the agitation that arises from desire and frustration until he is liberated from the body is fixed in yoga. He is happy, he is human being.

2.26 MEDITATION, AN EFFECTIVE TOOL TO HANDLE STRESS

Meditation radically improves mental and physical health. Amongst other things, regular meditation has been found to:

- Promote deep relaxation
- Relieve stress and anxiety
- Lower blood pressure and heart rate
- Help treat migraine, insomnia and addictions
- Lift depression and improve self-esteem
- Boost the immune system
- Have a significant effect on ageing
- Increase IQ

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2.26.1 Meditation

Seers and sages throughout history have told us to turn our attention inwards through the practice of meditation to achieve lasting fulfillment and inner peace. The techniques they have taught are tools for stilling the mind, for drawing our attention away from the outer world and immersing it in our own inner self.

There are three key aspects to the practice of meditation.

- The first is that we meditate not to become something, but to realize what and who we really are.
- The second is the paradox that although most people meditate for a reason, seeking and striving are counterproductive in actual practice.
- The third is the importance of having a still mind, in which thoughts are neither suppressed nor encouraged but simply witnessed.

2.26.2 Meditation and Pure Awareness

Meditation is a state of pure awareness in which the mind is completely free of thoughts. Meditators report increased efficiency, creativity and self-confidence, greater self-love and love for others.

2.26.3 Stress Overload

Stress expert Dr. Malcolm Carruthers likens stress to an electric current in a circuit.

- The circuit is designed to have a certain amount of electricity flowing through it, without which it cannot function.
- But if the current is too strong and the circuit is overloaded, it will overheat or blow a fuse.
- Similarly a person whose stress tolerance is exceeded, or who handles it inappropriately, will get hot and bothered or 'blow a fuse'. As in a machine, the weakest link will go first, whether it's a cardiac or an ulcer. Some people blow a mental fuse and have a nervous breakdown.
- People vary tremendously in their tolerance to stress and while some people, such

as politicians, may thrive on and enjoy high levels of stress, others ‘blow a fuse’ at the slightest irritation.

2.26.4 Meditation and Relaxation Response

Serious health problems can arise as a consequence of prolonged sympathetic arousal. Meditation counteracts this state of arousal by activating the parasympathetic response, which has also been termed ‘the relaxation response’. There has been considerable research into the effects of meditation, most of which has been conducted with Zen masters, Indian yogis, and more recently with Western practitioners.

These studies have demonstrated that meditation is accompanied by :

- A significant decrease in heart rate and a lowering or stabilization of blood pressure.
- Slower, shallower breathing, and reduced oxygen consumption.
- A decrease on skin conductivity associated with reduction in anxiety.
- Changes in brain-wave activity indicating a relaxed but alert state.

Meditation can, therefore, be used to ‘switch off’ the fight or flight response.

2.26.5 Meditation and the Brain

General patterns of brain activity can be measured, albeit somewhat crudely, by an instrument called an electroencephalograph (EEG). An electroencephalograph measures electric currents in the brain, which are correlated with different mental states, by means of electrodes placed on the scalp.

Brain wave activity is classified into alpha, beta, delta or theta activity according to the frequency of the electrical patterns recorded. Delta activity is the slowest, at 0.5 to 4 cycles per second, and is associated with deep sleep. Theta activity consists of patterns of between 4 and 8 cycles per second and corresponds to drowsiness, daydreaming or the dream state. Alpha activity, on which most interest has been centered, ranges from 8 to 13 cycles per second and

predominates when an individual is in a relaxed but alert state. Beta activity, at 13 cycles per second and above, up to around 30 or 40 cycles per second, predominates during normal waking consciousness.

3.26.6 Brain Activity during Meditation

- In all studies on meditators alpha activity appears, with or without other patterns of brain-wave activity.
- The general picture that seems to emerge is that initially, on beginning a period of meditation, there is a shift towards more alpha activity.
- Later in meditation there may also be some theta activity, especially in the case of experienced meditators.
- During deep meditation, however, there are bursts of very high frequency beta activity between 20 and 40 cycles per second, even as high as 50 cycles per second.
- At the end of meditation alpha activity reappears and may persist even with the eyes open.

Another interesting feature is that alpha brain wave activity during meditation appears to spread from the back of the brain, whereas alpha readings are usually found to cover the entire scalp, building up first in the left hemisphere of the brain and then in the right to present a symmetrical pattern. It is now known that each hemisphere of the brain has a different function to perform, the left side being concerned with language, analytical thinking and so on, while the right side has to do with images and patterns, creative thinking etc. Western society has tended to place more importance on rational thinking with the result that, in most people, brain-wave activity predominate right-hemisphere activity. Although the findings of research into the brain-wave patterns of meditators are not yet fully understood, it appears that meditation acts to restore the balance between right – and left-hemisphere activity, and also to widen the range of activity into areas of the brain previously lying dormant.

3.26.6 Chakra Meditation

The practice in tantric and Kundalini yoga involves meditating in turn on each of the six main *chakras* (energy centres) spaced along the *sushumna* (central canal) in the subtle body.

The *sahasrara*, or 1000 petalled lotus, is situated at the top of the head. This centre has no seed mantra. It is the centre where all vibrations have their source and finally merge.

The *ajna* chakra is situated in the subtle body between the eyebrows. The seed mantra of this chakra is om (the most important bija, the primal cosmic vibration),

The *vishuddha* chakra is situated in the subtle body at the throat. The seed mantra of this chakra is ham (bija of ether).

The *anahata* chakra is situated in the subtle body at the heart, the seed mantra of the chakra is yam (bija of air).

The *manipura* chakra is situated in the subtle body at the navel. The seed mantra of this chakra is ram (bija of fire).

The *svadhishtana* chakra is situated in the subtle body below the navel. The seed mantra of this chakra is vam (bija of water).

The *muladhara* chakra is situated in the subtle body at the base of the spine. The seed mantra of this chakra is lam (bija of earth).