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MANAGEMENT OF STRESS: A REVIEW

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ABSTRACT

This review aimed to assess the stress. Stress is a fact in our daily life. when a person needs help, it means it means that persons feel that personally and emotionally disabled. Most people believe that their capacity and capabilities are so little to encounter the stress. If you experience stress over a prolonged period of time, it could become chronic, till you take some action. About 500 million people worldwide are believed to be suffering from, stress related and psychological problems. While everyone understands the symptoms of the stress response. Stress is mainly dependence on the neuroendocrine system. However, the stress effects on the immune system is disputed, and caused various "immunodeficiency linked" diseases. Using self help techniques like yoga, adult painting , dairy writhing to reduce the stress. Mainly this paper will present a discussion of stress: how stress is defined, biology, physiology and some examples are given how manage the stress.

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INTRODUCTION

Stress is a very common problem worldwide being faced today. Every individual will experience stress in one or the other time. stress is a natural human response to pressure when faced to challenging and sometimes dangerous situations. Experiencing the stress is part of being alive and some stress helps increase our alertness and to meet the challenging situations. if stress lasts a long time our ability to face some problems, it can have a negative effect on our health. stress is an inevitable aspect of our life everyone.



Figure -1 stressor.

Stress may be understood as a state of tension experienced by individuals facing extraordinary demands, constraints or opportunities. The pressures of modern life, coupled with the demands of a job, education, workplace and home can lead to emotional imbalances that are leads 'Stress'. However, stress is not always unpleasant. Stress is the spice of life and the absence of stress makes life dull, monotonous and spiritless [1].

Definition:

While no definition of stress has been universally accepted, three common classes of definition are as follows: one is a stimulus, an environmental event, usually a threat, that affects the body in complex ways; in this interpretation, stress is referred to as a "stressor", one that evokes complex reactions of the various systems of the body.

A second definition is that stress is a bodily reaction to stressors; consequently, complex interaction of systems of the body can result in deleterious consequences to those systems and organs to the point of a person becoming "stressed out"; and serious illness can follow. This class fits Hans Selye's definition of stress as the nonspecific response of the body to any demand. The demands, Hans Selye (1978/1956) held, can be positive ones (Eustress) or negative ones (Distress) [2,3]

Examples of Distress & Eustress:

Family:

- Illness or death of a close family member;
- Divorce or marital separation;
- Alcoholism or drug addiction in the family;
- Increased arguments with spouse.

Social life:

- Jail term;
- Legal trouble;
- Change in residence;
- Change in sleep patterns;
- Change in social activities;
- Worsening of political situation.

Environment:

- Climate: humidity, temperature;
- Noise;
- Vibration;
- Lighting;
- Hygiene.

Work:

- Loss of a job or job insecurity;
- Trouble with supervisors or with colleagues;
- Under/over promotion;
- Night work; shift work or overtime work;
- New technology; different works.

Eustress:

- Marriage;
- Pregnancy, childbirth;
- Outstanding achievement;
- Child leaving home or child starting school;
- Winning the lottery.

A third type is an interactive one between environmental events (stressors) and bodily reactions such that stressors affect systems of the body and the resulting behavior feeds back to affect the environmental stressors. However, they can also lead in complex ways to a variety of mental or physical problems.

Stress may be unconscious like the noise of a city or the daily chore of driving a car. Perhaps the one incontestable statement that can be made about stress is that it belongs to everyone to businessmen and professors, to mother and their children, to factory workers. Stress is a part of the fabric of life. Nothing can isolate stress from human beings as is evident from various researches and studies. Stress can be managed but not simply done away with. Today, widely accepted ideas about stress are challenged by new research, and conclusions once firmly established may be turned completely around. The latest evidence suggested (Ogden Tanner, 1979) reveals, some stress is necessary to the wellbeing and a lack can be harmful. Stress definitely causes some serious ailments. Severe stress makes people accident-prone [4].

Objectives:

- Everyone should understand about the stress, how to cause and effect
- Mapping the causes and effect of stress
- Evaluate the stress levels and dealing with stress positively
- To learn about the stress response and symptoms of stress
- Learn about the stress management techniques that will have to overcome the stress

Pathophysiology:

The mechanism for stress is still ill understand it has been reported that glucocorticoid secretion is important for maintaining stressful situations. people who have experience greater levels of physical and/or psychological stress are seen to have elevated levels of cortisol, a steroid hormone. the rise in production of corticosteroids is possibly due to failure of feedback regulation of the hypothalamic pituitary adrenal axis.in addition, the elevated levels of corticosteroids lead to suppression of immune system and may precipitate the different disorders called SID (stress induced disorders) [5].

Biology of stress:

Stress can have many profound effects on the human biological systems [6]. The central nervous system (brain and spinal cord) plays a crucial role in the body's stress-related mechanisms Them sympathetic nervous system becomes primarily active during a stress response, regulating many of the body's physiological functions in ways that ought to make an organism more adaptive to its environment. Stress, either severe, acute stress or chronic low-grade stress may induce abnormalities in three principal regulatory systems in the body: serotonin systems, catecholamine systems, and the hypothalamic-pituitary-adrenocortical axis. Aggressive behavior has also been associated with abnormalities in these systems[7].

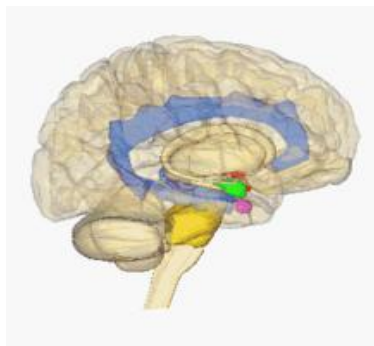


Figure -2 normal Brain.

Human brain: Hypothalamus = ■, amygdala = ■, hippocampus/fornix = ■, pons = ■, pituitary gland = ■
 The autonomic nervous system (ANS), as mentioned above, plays an important role in translating stress into a response. The ANS responds reflexively to both physical stressors (for example baroreceptor), and to higher level inputs from the brain [8]. ANS related mechanisms are thought to contribute to increased risk of cardiovascular disease after major stressful events [9].

The HPA axis is a neuroendocrine system that mediates a stress response. Neurons in the hypothalamus, particularly the Paraventricular, release vasopressin and corticotrophin releasing hormone, which travels through the hypophyseal portal vessel where it travels to and binds to corticotrophin-releasing hormone receptor on the anterior pituitary gland. Multiple CRH peptides have been identified, and receptors have been identified on multiple areas of the brain, including the amygdala. However, CRH is the main regulatory molecule of the release of ACTH. The secretion of ACTH into systemic circulation allows it to bind to and activate Melanocortin receptor, where it stimulates the release of steroid hormones. Steroid hormones bind to glucocorticoid receptors in the brain, providing negative feedback by reducing ACTH release. Some evidence supports a second long term feedback that is non-sensitive to cortisol secretion. The PVN of the hypothalamus receives inputs from the nucleus of the solitary tract, and lamina terminalis. Through these inputs, it receives and can respond to changes in blood.

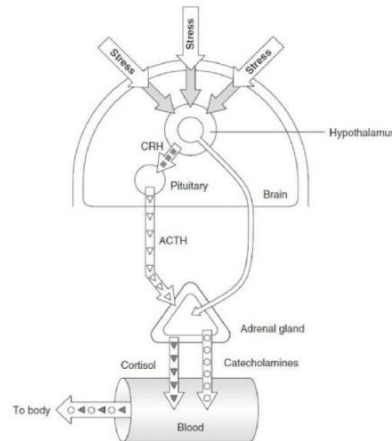


Figure -3 how the cortisol release in the blood.

The PVN innervation from the brain stem nuclei, particularly the noradrenergic nuclei stimulate CRH release. Other regions of the hypothalamus both directly and indirectly inhibit HPA axis activity. Hypothalamic neurons involved in regulating energy balance also influence HPA axis activity through the release of the neurotransmitters such as neuropeptide Y, which stimulates HPA axis activity. Generally, the amygdala stimulates, and the prefrontal cortex and hippocampus attenuate HPA axis activity, however complex relationships do exist between the regions [10].

The immune system may be heavily influenced by stress. The HPA axis ultimately results in the release of cortisol, which generally has immunosuppressive effects. However, the effect of stress on the immune system is disputed, and caused various "immunodeficiency linked diseases.

How it affects us:

Prolonged stress undoubtedly makes people ill. It is now known to contribute to heart disease, hypertension and high blood pressure, it affects the immune system, is linked to strokes, IBS (Irritable Bowel Syndrome), ulcers, diabetes, muscle and joint pain, miscarriage, allergies, alopecia and even premature tooth loss.

Cognitive:



Figure – 4 person in cognitive state due to stress.

- Memory Problems
- Poor Judgement
- Inability to Concentrate
- ‘Brain Fog’
- Indecision
- Starting many tasks but achieving little
- Self doubt

Emotional :



Figure – 5 person in emotional state due to stress.

- Depression
- Moodiness
- Irritability
- Fatalistic Thinking
- Panic
- Cynicism
- Anxiety
- Feeling Overwhelmed
- Frustration

Physical:



Figure -6 person in physical state due to stress..

- Chest Pain
- Rapid Heartbeat
- Aches and Pains
- Frequent Colds
- Skin Complaints
- Indigestion
- High Blood Pressure

Behavioural:



Figure -7 behavioural state.

- Increase Intake in Alcohol, Cigarettes and Caffeine to Relax
- Isolating Yourself from Others
- Sleeping too Little or too Much
- Demotivated
- Loss of sense of humor

Treatment:

Stress has profound effect on metabolic functions of the body. during stress, release of various adrenal hormones such as catecholamine and glucocorticoids manifest in hyperglycemia. exposure to stress results in hypertrophy and gastric ulceration, indicating the active involvement of the hypothalamic-pituitary –adrenal(HPA)axis[11,12]

In the stress conditions mainly synthetic drugs are used include:

- Serotonin reuptake inhibitors (citalopram)
- Serotonin-norepinephrine reuptake inhibitors(venlafaxine)
- Alpha-adreno receptor antagonists,
- Antiadrenergic agents
- Peripherally acting(prazosin),
- Tricyclic antidepressants(amitriptyline) [13]

But by associated with these drugs side effects are more like nausea, diarrhea, agitation, headaches, erectile dysfunction, dry mouth and skin rash[14].

In the treatment, instead of drugs we can use self help techniques to manage the stress.

Management of stress:

Many practical stress management techniques are available, some for use by health professionals and others, for self-help, for example yoga, adult coloring writhing dairies, social activities, meditation etc.., which may help an individual reduce their levels of stress, provide positive feelings of control over one's life and promote general well-being Stress management refers to the wide spectrum of techniques and psychotherapies aimed at controlling a person's levels of stress, especially chronic stress, usually for the purpose of improving everyday functioning.

So many techniques are helpful to relief the stress some examples are:



Figure-8 use self help techniques to reduce the stress.

Yoga:

The practice of Yoga is well demonstrated to reduce the physical effects of stress on the body and has been found to reduce the cortisol levels. people find that they feel more relaxed after yoga practice [15]. Yoga is most Recognized form of Exercise, Stretching, Aerobic exercise and Meditation. The definition of yoga is “to yoke or joint together” [16] it integrates the mind and body focusing on balance posture, deep breathing, stretching and relaxation. Yoga evolved from of the Hindu, Jains, and Buddhist religious traditions in India. Yoga alters stress response and person’s attitude, towards stress along with improving self confidence, increasing one’s sense of well being, and creating a feeling of relaxation and calmness [17]. Yoga is an ancient art that is defined as the union of the soul with God [18].



Figure -9 yogasanas.

Dimensions of yoga are:

- Pranayama (breathing)
- Asana (postures)
- Yama (restraint)
- Niyama (healthy observances)
- Pratyahara (sensory withdrawal)
- Dharana (concentration)
- Dhyana (meditation)

• Samadhi (higher consciousness)

Adult coloring for stress relief:

Adult coloring books are one of the new trends in stress management and creativity, but there is a really beneficial point to taking part in this trend. According to clinical psychologist, coloring is the stress free activity that relaxes the amygdala the fear center of the brain and allows your mind to get the rest it needs. But coloring has other indirect health benefits as well [19].

Writing dairies:

Diary writing can be used as a tool for reflection, self improvement, emotional-release, preserving family history, and recording. milestones or events. Many women write dairies. This is one of the oldest forms of personal writing [20]. writing processes involved in diary writing can be very therapeutic. Processes involved in diary writing include self-reflection, self-analysis, and narcissistic enhancement [21]. Writing can help people organize their thoughts, and this helps them to find a reasonable solution to their problem and reducing the stress or anxiety caused by these thoughts.

Other strategies to relieve the stress: [22]**Relaxation:**

It is a way to help us reducing and removing tension and anxiety through decreasing unnecessary muscular contractions. This is a self-control method that helps us experiencing less stress in stressful situations.

Time management:

Most people believe that time limitation is one of the most important source of stress. A busy day, lack of enough time for doing different tasks, being loaded with works that are behind, late for meetings etc. are the problems which people mention. Therefore, in such cases, stress management should include time management which is an important skill needed for success. Sometimes, we misunderstand the term "time management" and we think we must control and manage our time. Whereas, time is not controllable and we have to control ourselves and our time. Indeed, time management is a kind of self-management.

CONCLUSION

I would likely to take this time to summarize everything I have said in this blog regarding stress. Stress has a major impact on our life. Although we cannot see the stress as permanent negative phenomenon and there is some positive stress too. It has many causes, and these involve complex combinations of physical, social, psychological elements. stress effects our body in many ways and we can reduce the stress by using self help techniques. Reducing your stress levels can not only make you feel better right now, but may also protect your health long-term. managing stress can help reduce the stress and make you feel healthier.

Always try to practice out for different relaxation techniques. Always think positively and keep a positive attitude. This article recommended further reaserch

List of Abbreviations:

SID	Stress induced disease
ACTH	Adrenocorticotrophic hormone
HPA	Hypothalamic- pituitary – adrenal axis
ANS	Autonomic nervous system
IBS	Irritable bowel syndrome
CRH	Corticotrophin releasing hormone
PVN	Para ventricular nucleus

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