

## **Stress and life style diseases –Adaptive coping strategies**

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### **ABSTRACT**

Stress is an all-pervading phenomenon in life. It is the product of dynamic interaction of the individuals with the environment and is triggered by their perception of threat or challenge. It is necessary and useful for personality growth when in optimum quantity. When this level, which varies from person to person is exceeded, the costs are experienced in the form of health problems and illnesses. It can lead to unhealthy lifestyle and health damaging behaviour. The modern lifestyle of excesses in eating, drinking and the so called fast paced good life has led to the violation of basic principles of health. The response to stress is determined by one's personality, motivation, problem-solving capacity and the ability for self-introspection. Various environmental factors interact with individual make-up like disease, diet, drugs, occupation, family and social situation, physical and mental fitness, emotional stability and the ability to relax. We are developing unhealthy eating habits in conjunction with a diet high in saturated fats, sugar, and refined foods but low in fibre and towards lifestyle characterized by lower levels of activity, high stress levels and poor coping techniques. Stress has been shown to affect almost all body systems, resulting in cardiovascular disease, neuromuscular disorders, respiratory and allergic problems, gastro-intestinal disturbances, diabetes and cancer. The present paper has been designed to evaluate the effectiveness of targeting individual lifestyle diseases and adaptive coping strategies to reduce stress and improve health. Balanced diet, exercise, positive attitude and social support can go a long way in dealing with lifestyle diseases.

**Key Words :** Stress, Lifestyle diseases, Behaviour patterns, Coping strategies, Management

### **INTRODUCTION**

Stress is the state in which the dynamic equilibrium or homeostasis of the organism is threatened by external or internal forces called 'stressors'. It is a state of imbalance between demands made on us from outside and our resources and capabilities to meet those demands, which are significantly different. The nature of the stress can be understood best in terms of the way people perceive and ascribe meaning to stress producing situations, the values they attribute to actions and the way they interact with events. Hans Selye, a Canadian Physiologist first introduced the concept of stress and stressor to the medical field, about sixty years ago, which is used to describe the physical, mental or emotional strain or tension (Selye, 1976). Stress is an all-pervading phenomenon in life. It is the product of dynamic interaction of the individuals with the environment and is triggered by their perception of threat or challenge. It is necessary and useful for personality growth when in optimum quantity. In the modern society, stress is an important component of present day competitive life.

Stress and strain are inescapable and inevitable facets of life of professional women of today. Stress has been defined as an event which puts demands upon the organism and sets in motion a non-specific bodily response which leads to a variety of temporary or permanent physiological, psychological and structural changes (Onder *et al.*, 2000). However, too much stress affects our health and wellbeing, job performance and behaviour adversely. When this level, which varies from person to person is exceeded, the costs are experienced in the form of health problems and illnesses. It can lead to unhealthy lifestyle and health damaging behaviour.

People who are stressed have poor nutritional habits, insomnia and are likely to engage in other health risking behaviours like smoking and alcohol abuse. The modern lifestyle of excesses in eating, drinking and the so called fast paced good life has led to the violation of basic principles of health. The present study is an attempt to provide a practical and a positive approach for supporting to evaluate the effectiveness of targeting individual lifestyle and adaptive coping strategies to reduce work stress and decrease the prevalence of lifestyle diseases. Stress has been shown to affect almost all body systems, resulting in cardiovascular disease, neuromuscular disorders, respiratory and allergic disorders, immunologic problems, gastrointestinal disturbances, cancer etc. Various studies have demonstrated a strong link between distress and the onset of disease.

Basically, there are three types of stress: physical, psychological, and psychosocial.

**Physical stress** involves stressors in the environment - factors such as extremes in temperature, environmental pollution, constant noise, or electric shock. Researchers also categorize physiological factors as physical stress consisting of injury, surgery, hypoglycemia, prolonged exercise, or an inadequate supply of oxygen.

**Psychological stress** stems from the way we feel, the attitudes we have, and the way we react toward anything that is threatening us, whether the threat is real or imagined.

**Psychosocial stress** involves stressors from interpersonal relationships, arguments or conflicts with family members, neighbours, employers, friends, or other people around us. Psychosocial stress may result from intense social interactions, but it can also occur when there is isolation as a result of inadequate social interactions.

Research shows that almost every system in the body can be influenced by chronic stress. When chronic stress goes unreleased, it suppresses the body's immune system and ultimately manifests as illness. One can only wonder what would happen to the body if it remained in the fight-or-flight response. Fortunately, under normal circumstances, three minutes after a threatening situation is over and the real or imagined danger is removed, the fight-or-flight response subsides and the body relaxes and returns to its normal status. During this time heart rate, blood pressure, breathing, muscle tension, digestion, metabolism and the immune system all return to normal. If stress persists after the initial fight-or-flight reaction, the body's reaction enters a second stage. During this stage, the activity of the sympathetic nervous system declines and adrenaline secretion is lessened, but corticosteroid secretion continues at above normal levels. Finally, if stress continues and the body is unable to cope, there is likely to be breakdown of bodily resources.

The adrenal glands start pumping out a group of hormones called the glucocorticoids, which are essential to the metabolism of glucose in the body; they are, in the right amounts, critical to life. But secreted in excessive amounts, they can impair the immune system and render the body susceptible to illness and disease. The hormones pumped out by the adrenal glands include cortisol, cortisone, and catecholamines (the body's chemical messengers of stress). Too much cortisone and catecholamines destroy the body's resistance to cancer, infections, illness, and the complications of surgery; the immune response weakens. It becomes difficult to fight off even a minor cold. Too

much cortisone over a prolonged time causes lymph glands to shrivel, bones to become brittle, blood pressure to soar, and the stomach to lose its resistance to gastric acid. The thyroid pumps out thyroid hormones, which accelerate metabolism resulting in insomnia, shaky nerves, heat intolerance, and exhaustion. It's the reason why some people lose weight under stress. The hypothalamus releases endorphins, which during chronic, relentless stress are depleted and can in turn aggravate migraine headaches, backaches, and even arthritis pain. Sex hormones (progesterone in females and testosterone in males) are reduced resulting in infertility and sexual dysfunction.

The major Lifestyle diseases and other related problems caused due to stress are the following:

#### **Heart diseases:**

Researchers have long suspected that the stressed-out, Type A personality has a higher risk of high blood pressure and heart problems. Stress can directly increase heart rate and blood flow, and causes the release of cholesterol and triglycerides into the blood stream. Doctors do know that sudden emotional stress can be a trigger for serious cardiac problems, including heart attacks. People who have chronic heart problems need to avoid acute stress.

#### **Asthma:**

Many studies have shown that stress can worsen asthma. Some evidence suggests that a parent's chronic stress might even increase the risk of developing asthma in their children. One study looked at how parental stress affected the asthma rates of young children who were also exposed to air pollution or whose mothers smoked during pregnancy. The kids with stressed out parents had a substantially higher risk of developing asthma.

#### **Obesity:**

Excess fat in the belly seems to pose greater health risks than fat on the legs or hips and unfortunately, that's just where people with high stress seem to store it. Stress causes higher levels of the hormone cortisol and that seems to increase the amount of fat that gets deposited in the abdomen.

#### **Diabetes:**

Stress can worsen diabetes in two ways. First, it increases the likelihood of bad behaviors, such as unhealthy eating and excessive drinking. Second, stress seems to raise the glucose levels of people with Type 2 diabetes directly.

#### **Headaches:**

Stress is considered one of the most common triggers for headaches — not just tension headaches, but migraines as well.

#### **Depression and anxiety:**

It's probably no surprise that chronic stress is connected with higher rates of depression and anxiety. One survey of recent studies found that people who had stress related to their jobs — like demanding work with few rewards — had an 80% higher risk of developing depression within a few years than people with lower stress.

#### **Gastrointestinal problems:**

Here's one thing that stress doesn't do — it doesn't cause ulcers. However, it can make them

worse. Stress is also a common factor in many other GI conditions, such as chronic heartburn (or gastro-oesophageal reflux disease, GERD) and irritable bowel syndrome (IBS).

**Alzheimer’s disease:**

One animal study found that stress might worsen Alzheimer’s disease, causing its brain lesions to form more quickly. Some researchers speculate that reducing stress has the potential to slow down the progression of the disease.

**Accelerated aging:**

There’s actually evidence that stress can affect how one ages. One study compared the DNA of mothers who were under high stress — they were caring for a chronically ill child — with women who were not. Researchers found that a particular region of the chromosomes showed the effects of accelerated aging. Stress seemed to accelerate aging about 9 to 17 additional years.

**Premature death:**

A study looked at the health effects of stress by studying elderly caregivers looking after their spouses — people who were naturally under a great deal of stress. It found that caregivers had a 63 per cent higher rate of death than people their age who were not caregivers.

All the five senses are constantly on red alert, and sensory burnout can result. As a result, our sight, hearing, taste, smell, and sense of touch actually become less efficient over time. The combination of all the things that happen during the phases of the stress response adds up to a real assault on the body. That assault may be even greater if stress is prolonged. Poor lifestyle choices, such as smoking, overuse of alcohol, poor diet, lack of physical activity and inadequate relief of chronic stress are key contributors in the development and progression of preventable chronic diseases, including obesity, Type 2 Diabetes mellitus, hypertension, cardiovascular disease and several types of cancer. Coping comprising of lifestyle modifications are possible with appropriate interventions, which include nutritional counseling, exercise training, and stress management techniques to improve outcomes for patients at risk and those who already have common chronic diseases.

**Coping Strategies to deal with stress :**

Coping is defined as an attempt to respond to a feeling of discomfort with the aim of removing it. It includes both an attempt to master the perceived causes of stress as well as reduce the effects of stress. Medical studies show that adults with common chronic conditions who participate in comprehensive lifestyle modification programs experience rapid, significant, clinically meaningful and sustainable improvements in biometric, laboratory and psychosocial outcomes. Long term stress could lower the body’s resistance to disease and make them vulnerable to illness. Anxiety and tension are essential functions of living, just as hunger and thirst. They are our self-protective reactions when we are confronted by threats to our safety, wellbeing, happiness or self-esteem. So, while an occasional bout of anxiety and tension may be unpleasant, it is quite normal. The time to become watchful is when emotional upsets come frequently, shake us severely and fail to wear off after a while.

Here are certain simple practical, positive actions, which can help one cope with stress in an effective manner:

**Talk it out:**

One can confide one's worry to some level-headed person she can trust. Talking things out helps to relieve strain and to see the worry in a clearer light and see what one can do about it.

**Escape for a while:**

Sometimes, it helps to escape from a painful problem for a while like to lose oneself in a movie or a book or a game. Making oneself 'stand and suffer' is a form of punishment, not a way to solve a problem. But one has to be prepared to come back and deal with one's difficulty when the person is more composed, in a better condition emotionally and intellectually.

**Work off anger:**

If a person finds himself using anger as a general pattern of behaviour, he must remember that anger will generally make him feeling foolish and sorry in the end. Throwing the anger out of his system will leave him feeling much better and making him mentally prepared to handle his problem intelligently.

**Give in occasionally:**

One must stand on his ground on what he believes is right, but do it calmly and make allowance for the fact that he could turn out to be wrong. Do give in once in a while. If he does this, he will usually find that others will yield, too. The result will be relief from tension, the achievement of a practical solution, together with a feeling of satisfaction.

**Do something for others:**

If we worry about ourselves all the time, we should try doing something for others. This will take the steam out of our worries and give us a warm feeling of having done well.

**Shun the Superman urge:**

Some people get into a state of anxiety because they think they are not achieving as much as they should. They try for perfection in everything. This ideal is an invitation to failure. We must decide which things we do well, and then put our major effort into them. They are likely to be things that will give us most satisfaction.

**Go easy with criticism:**

Some of us expect too much of others, then feel let down, disappointed, frustrated when another person does not measure up. Instead of being critical of another person's behaviour, search out his/her good points and help in their development.

**Schedule recreation:**

Many of us find it hard to take time out. It is desirable for almost everyone to have a hobby that absorbs them in off hours, into which we could throw ourselves completely and with pleasure forgetting all about our work. We must take holidays once in a while.

**See our doctor:**

If the stress in our life has become intolerable or is causing physical symptoms or depression, counseling by a doctor may help by making life less stressful.

There are a number of Relaxation techniques, which help to a great extent in dealing with stress in an effective manner.

**Transcendental meditation (T.M):**

This technique has been effective in oxygen consumption, respiratory rate, heart rate and blood pressure.

**Yoga:**

It is a potent tool not only to tackle today's stress and strain but is also helpful in making and keeping already fit and healthy individuals more fit and healthy. *Yoga* training for thirty minutes enhances the endomorphin level of the brain, leading to an increase in endurance and general vigour of the person, thereby causing an improvement in skill execution. Practice of *asanas* improves physical and motor fitness.

**Physical exercise:**

It has been found to be the best anti-dote for stress. It not only helps in keeping the body physically and mentally fit but also provides recreation and mental relaxation. It eases out the nervous tension by providing an outlet for pent up feelings of aggression and hostility. The main exercises recommended are:

- a) **Aerobic exercises:** They increase cardio-vascular activity, tone up the muscles.
- b) **Walking and jogging:** Perhaps the most effective exercise in countering stress, walking has been found to be an anti-dote to heart diseases, diabetes etc.

**Practicing good management :**

At the work place, poor self management, misplaced priorities and poor vision of thin objectives bog down many people. So one should understand and utilize time-management techniques to help to cope with demanding and stressful situations. Some of the basic principles of time management are:

- To prepare the daily list of activities/tasks to be performed.
- To prioritize activities/tasks as per relative importance and time frame.
- To have the knowledge of one's daily tasks and scheduling the most demanding tasks during that part of the day, when one is most productive and alert.
- To keep some time for visualizing plans for implementation of the present system and to lessen the impact of such irritants which create work impediments.

**Increased socialising :**

It is a well-known fact that sharing with near and dear ones in whom we can confide and share helps in reducing stress. Expanding one's social support network, such as friends, family members and colleagues and a conscious effort to increase sharing with them helps in reducing excess stress.

**Dietary recommendations :**

A balanced diet consisting of all the required nutrients in right proportionate amounts can go a long way in dealing with stress in one's life.

**Energy:**

Current trends among young adults include decreased energy intakes, decrease physical activity and increased body fat defined by body Mass Index (B.M.I). The relevance of B.M.I and associated risks should be given importance. A diet providing about 1900 Kcal. will be sufficient to carry on with day today activities. But this will vary depending on the activity of a person.

**Fats:**

Diets high in saturated fats and cholesterol are associated with increased incidence of atherosclerosis and coronary heart disease. High fat diets contribute to the development of obesity and increase the risk of cancer. One has to limit their fats by using lean meat, poultry without skin, fish, low fat or non-fat dairy products. Polyunsaturated vegetable oils and margarine, fewer fried foods could be used. We can broil, bake or boil foods rather than frying them.

**Complex carbohydrates:**

We should consume complex carbohydrates as they boost up energy and calm the mind. They are found in vegetables, fruits, grains and legumes. Plant foods rich in complex carbohydrates and fibre reduce chronic disease risk. We should consume fruits and vegetables in plenty as they are good sources of potassium, which seems to play a role in moderating blood pressure levels and thereby may reduce the risk of stroke. Carotenoids present in dark green and deep yellow vegetables and fruits offer some protection against particular forms of cancer. The insoluble fibre component of plant foods assists in maintaining proper functioning of the large intestine and decreases the risk of colon cancer.

**Proteins:**

A mixed diet solely based on plant proteins could meet protein requirement of the working women provided they consumed enough of the food to meet our energy needs. Excessive levels of dietary protein could contribute to degenerative changes in renal function.

**Minerals:**

The subjects were told about the beneficial effects of minerals. Less salt should be consumed which will prevent the development of high blood pressure. Calcium, iron, zinc should also to be taken in right proportionate amounts. Zinc helps in enhancing the immunity of the individuals, fights stress and aids in the healing of wounds. It is found in liver, eggs, dairy products, whole grain cereals and seafood.

**Vitamins:**

Vitamin B-complex group helps deal with stress as they help release energy and maintain a healthy nervous system, They are found in green vegetables, potatoes, fresh fruits, whole grain cereals, eggs, dairy products, seafood, lean meat, liver, kidney, poultry, pulses (peas, beans, lentils), nuts, seeds and dried fruits. Vitamin C helps the body to resist infection and helps in healing of the wounds. It is found in fresh fruits especially in citrus fruits, and black currants, fruit juices, fresh vegetables. The need for Vitamin C under stress can go up to 500 mg. (Beckett, 2001).

**Foods to be taken in plenty:**

- Green vegetables, fresh fruits with skin

- Salads without rich dressings
- At least 10-12 glasses of water
- Skimmed milk and its products
- Sprouts
- Whole grain cereals, beans, lentils.

**Foods to be avoided:**

- Nuts, processed cheese, biscuits
- Whole milk, butter, ghee, rich puddings, fried snacks
- Excess fat, salt, sugar
- Carbonated drinks, caffeine rich beverages like too much consumption of coffee and food additives

To help reduce stress in one's life, it is important to stick to a fresh, whole foods diet that is high in complex carbohydrates, moderate in proteins and low in fats. Less than 2 per cent of the diet should consist of simple sugars and those should come from fruit and not from fruit juice. One can sprout grains and pulses it increases the amount of B-complex vitamins, Vitamin C manifold times, iron is made available in the free form. All these nutrients help fight stress. We should try to make our family's meals more interesting and nutritious and break the monotony of serving the same kind of dishes every passing day.

**How to stand up under stress :**

All our disturbed feelings like anger, hostility, fear, anxiety, insecurity are caused by our own responses, not by any external stimuli. If we learn to control these responses, we will be building our own 'psychic screen'. But sometimes, that is not possible and one starts to cry. In fact, it is good to have a cry once in a while. Crying depressurizes us emotionally and thus relieves stresses that may affect even our bodies. Civilized living requires that on many occasions we exercise strong control on ourselves. We are expected to deal with our children, neighbours and business associates with a show of calm assurance, meet crisis. Social support has been the most frequently studied psychosocial resource. Managing stress is about making a plan to be able to cope effectively with daily pressures. The ultimate goal is to strike a balance between life, work, relationships, relaxation and fun. By doing this we are able to deal with daily stress triggers and meet these challenges head on.

Social support and self-esteem have a positive effect on the wellbeing of every individual. Recent studies have shown that among the chemical changes triggered by relaxation, there is an increase in the body's manufacture of certain mood altering chemicals known as neurotransmitters, which provide calmness to the body. There is a lot of anxiety and uncertainty in passivity. We have to think for ourselves and be ourselves. Power comes from within.

**Role of meditation in coping with stress :**

Meditation works by emptying the conscious mind. One directs one's thoughts away from oneself and problems, far from one's work, family, environment and relationships. Meditation relies on the close links between body and mind. When one meditates successfully, the alpha brain waves that are produced show that one has reached the most balanced, relaxed and harmonious state, which the body is able to attain. This freedom from physical tension and mental strain allows the body to switch to the 'relaxation' response'. Regular meditation has helped people overcome addiction



to tranquillizers and has reduced hypertension, insomnia, migraine, depression, anxiety and other psychosomatic diseases. It also improves creativity, concentration, mental alertness and memory.

### Conclusion :

Hard work over long periods leads to tension and tiredness which in turn limits the ability to relax and enjoy leisure. This results in various lifestyle diseases. Exercising, meditating, listening to music, reading, cooking, socializing are some activities which can create a balance with a demanding work schedule. A happy home and family environment should offer the most harmonious contrast to working life and to the stresses of travelling to and from work. But the family can be demanding which may prove stressful. Time to oneself gives space and quietness to relax, to sort out thoughts and to gain perspective on issues both at work and at home. Variable work hours allow greatest freedom to divide up working and leisure time. Learning skills of active coping and relaxation, developing a life style that creates a buffer against stress and its related diseases can help one maximize chances of early success and boost their self-confidence and a motivation to continue. Working out a compromise between idealistic desires and practical duties of life can lead to effective stress management.

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