

Impact of Psychological Stress on Health and Well-being

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Abstract: Stress is the non-specific response of the body to any demand placed upon it to adopt, whether that demand produces pleasure or pain. The Diathesis - Stress Model suggests that some individuals are vulnerable to stress – related disease because either genetic weakness or biochemical imbalance inherently predisposed them to those diseases. This model assumes that two factors are necessary to produce disease. First, the person must have a relatively permanent predisposition to the disease, and second, that person must experience sort of stress. Stress could produce disease with direct influence on the nervous endocrine and immune systems and indirectly as headaches, common cold, cardiovascular disease, diabetes mellitus, premature delivery, asthma, rheumatoid arthritis, memory loss as well as psychological issues like depression, anxiety disorders, etc. in essence, psychological stress is directly or indirectly harmful for human health.

Key Words: Stress, headaches, common cold, cardiovascular disease, diabetes mellitus, premature delivery, asthma, rheumatoid arthritis, memory loss, depression, anxiety.

1. INTRODUCTION:

If we were browse through any newspaper or magazine article prior to 1960, we would be hard-pressed to find the word stress in either the text or the headlines. But now, the word stress is as common as the words like food and exercise. The word stress is now associated with the development of diseases and illness which claim the lives of millions of people. Research now indicates that between 70 to 80 per cent of all disease and illness is stress related, most notably headaches, infectious diseases, cardiovascular disease, diabetes mellitus, premature delivery, asthma, rheumatoid arthritis, depression, anxiety and the list goes on and on.

2. REVIEW OF LITERATURE:

According to Hans Selye (1982), stress is the non-specific response of the body to any demand placed upon it to adopt, whether that demand produces pleasure or pain. Lazarus and Folkman (1984) defined psychological stress as a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being.

According to above definition,

- i) Stress refers to a relationship between person and environment
- ii) Person's appraisal of the psychological situations
- iii) The situation must seen as threatening, challenging or harmful.

Specialist in the field of holistic medicine have expanded Lazarus's and Selye's definitions as "stress is the inability to cope with a perceived (real or imagined) threat to one's mental, physical, emotional and spiritual well-being, which results in a series of physiological responses and adaptations."

Does Stress Cause Diseases?

The Diathesis - Stress Model: This model suggests that some individuals are vulnerable to stress – related disease because either genetic weakness or biochemical imbalance inherently predisposed them to those diseases. According to this model, some people predisposed to react abnormally to environmental stressors. This predisposition (diathesis) is usually thought to be inherited through bio-chemical or organ system weakness, but some theorists (Zubin & Spring, 1977) have also included acquiring propensities have also include acquiring propensities o–n a component of vulnerability.

Thus, the diathesis-stress model assumes that two factors are necessary to produce disease. First, the person must have a relatively permanent predisposition to the disease, and second, that person must experience sort of stress. For people with a strong predisposition to a disease even a mild environmental stressor may be sufficient to produce an illness episode. The disease does flow from an interaction between personal physiology and stress.

Stress and Disease:

Several possibilities exist for pathways through which stress could produce disease (Segerstorm & Miller, 2004). Direct influence could occur through the effect of stress on the nervous endocrine and immune systems. In addition, indirect effects could occur through changes in health practices that increase risks; that is, stress tends to be related to increase in drinking, smoking, drug use and sleep problems, all of which can increase the risk for disease.

1) Headaches: Headaches are a common problem; more than 99% of people experienced headaches at some time in their lives (Smetana, 2000). There are more than 100 types of headaches exist. The most frequent type is tension headache, usually associated with increased muscle tension in the head and neck region. Tension is also a factor in migraine headaches, which were believed to originate in the blood vessels in the head. Stress is recognized as a factor in headaches; people with either tension or vascular headache named stress as one of the leading precipitating factors.

2) Common Cold: Stone, Reed & Neale (1987) have found that people who are under stress more likely than non-stressed individuals develop infectious diseases such as common cold. In a study, intentionally exposed healthy volunteers to various common cold viruses to determine the role of stress in development of cold. The results indicated that the higher the person's stress, the more likely it was that the person would become ill.

A naturalistic study of stress and colds (Takkouche, Regueira & Gestal-otero, 2001) showed that high levels of stress were related to increases in infection. Those people in the upper 25% of perceived stress were about twice as likely to those in the lowest 25% to get a cold.

3) Cardiovascular Disease: People who had heart attacks named stress as the cause of their disorder (Cameron, Petrie, Eillis & Weinman, 2005). Evidence for the role of stress as on precipitating factor for heart attack or stroke in people with CVD is clear; stress increase the risks. Stress can serve as a trigger for heart attacks for people with coronary heart disease. Feelings of depression, anger or tension increase the risk for heart attack. Stress also increase the chances of chest pain as well as heart attacks in people with existing CVD. For woman with CVD, the stress of marital conflict more than tripled their chances of unstable chest pain or heart attack.

4) Diabetes Mellitus: It is a chronic disease that may be related to stress. Two kinds of diabetes mellitus are Type 1, or insulin- dependent diabetes mellitus, and Type 2, or non- insulin-dependent diabetes mellitus. Stress may contribute to the development of both types of diabetes.

First, stress may contribute directly to the development of insulin-dependent diabetes through the disruption of the immune system, possibly during infancy. Immune system measured at age 1 year indicated that those infants who had experienced higher family stress showed more indications of antibodies consistent with diabetes.

Second, stress may contribute to the development of type 2 through its effect on cytokines that initiate an inflammatory process that affects insulin metabolism and produces insulin resistance (Black, 2003).

Third, stress may contribute to type 2 through its possible effect on obesity. Research on stress and type2 diabetics has shown that stress can be a triggering factor and thus play a role in the age at which people develop type 2 diabetes.

5) Premature Delivery: Stress during pregnancy has been the topic of research for both human and non-human subjects (Kofman, 2002). Research with nonhuman subjects has conclusively demonstrated that stressful environment relate to lower birth weight and developmental delays, and that infant of stressed mothers show higher reactivity to stress. Research with human participants on stress during pregnancy revealed a tendency for stress to make preterm deliveries more likely and to result in babies with lower birth weights.

6) Asthma: Asthma is a respiratory disorder characterized by difficulty in breathing due to reversible airway obstruction, airway inflammation and inverse in airway responsiveness to variety of stimuli (Cohn, Elias & Chupp, 2004).

A physical stimuli such as smoke can trigger an attack but stressors, such as emotional events and pain can also stimulate an asthma attack. Both acute and chronic stress increase the risk of asthma attacks in children with asthma; a population based study in south Korea found that people who reported more stress were likely to experience more severe problems with their asthma. Children living in inner-city neighborhood with parents who have mental problems are at sharply at high risk. In addition exposure to violence appeared as a strong risk for asthma attack. Thus, stress is a significant factor in triggering asthma attacks.

7) Rheumatoid arthritis: A chronic inflammatory disease of the joints may also be related to stress. Rheumatoid arthritis is believed to be an autoimmune disorder in which a person's own immune system attacks itself. The attack produces inflammation and damage to the tissue living on the joints, resulting in pain and loss of flexibility and mobility.

A growing body of evidence indicates that stress can make arthritis worse by increasing sensitivity to pain, reducing coping efforts and possibly affecting the process of inflammation itself. Direct effect of stress on inflammation could occur through neuroendocrine responses to stress (Ligier & Strenberg, 2001).

8) Memory Loss: Prolonged stress can be harmful in another way. High cortisol level impair memory temporarily, and prolonged high cortisol levels increase the vulnerability of neurons in the hippocampus so that toxins or over stimulation can kill them. High cortisol levels may be responsible for the deterioration of the hippocampus, and therefore the decline of memory, that occurs in many aged people. Furthermore, hippocampal damage leads to increase cortisol levels, so a vicious cycle can develop. It suggests that prolonged stress may have led to brain damage.

Stress and Psychological Disorders:

The relationship between stress and mood seems obvious – stress can put people in a bad mood. However, all people experience bad moods, yet most people do not show reactions to severe that they qualify as psychological disorders.

A developing body of research that indicates a relationship between mood and changes in immune function. Such changes may underlie several psychological disorders. Thus, the relationship between stress and psychological disorder may be mediated through process similar to those involved with other disease – through the immune system.

1) Depression: Research suggests some relationship between stress and depressive symptoms. According to “kindling” hypothesis (Monroe & Harkness, 2005) the major life stress provides a “kindling” experience that may prompt the development of depression. A negative or the tendency to dwell on problems may exacerbate stress, making people more likely to think in ways that increase depression.

2) Anxiety Disorders: Anxiety Disorders include a variety of fears and phobias, often leading to avoidance behaviors. One anxiety disorder that, by definition, is related to stress is Post Traumatic Stress Disorder (PTSD). The diagnostic and statistical manual of mental disorders (4th ed., text revision, APA, 2000) defines PTSD is “the development of characteristic symptoms following exposure to an extreme traumatic stressor involving direct personal experience of an event that involves actual threatened death or serious injury.”

A study conducted in China (Shen et al., 2003) found that people with generalized anxiety disorder reported more stressful life events than did people with no psychological disorder. Furthermore, those with anxiety disorder showed lower levels of some immune system functioning. Thus, stress may play a role in anxiety disorders and again, the route may be through an effect on the immune system.

3. CONCLUSION:

Psychological stress is directly or indirectly harmful for human health. But, the fact is, we cannot avoid stressful situations rather we have to face them. Stress could produce disease with direct influence on the nervous endocrine and immune systems and indirectly as headaches, common cold, cardiovascular disease, diabetes mellitus, premature delivery, asthma, rheumatoid arthritis, memory loss as well as psychological issues like depression, anxiety disorders, etc. in essence, psychological stress is directly or indirectly harmful for human health.

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