



Stress and Holistic Health

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Abstract:

Stress is the process of appraising and responding to a threatening or challenging situation or event. Stress arises less from situations themselves it arises from how we take them. One person, alone in the house, ignores the creaking sounds and experiences no stress, someone else suspects an intruder and becomes alarmed. One person regards a new job as a challenge; someone else looks at it as a risking failure. Stress often strikes without warning. Researchers dropped a cold virus into the noses of stressed and relatively unstressed people. Among those living stress- filled lives, 47 percent developed colds. Among those living relatively free of stress, only 27 percent did. Other studies reveal that major life stress increases the risk of a respiratory infection.

Key words: biochemical effects, failure, humiliation, infection

Introduction

Hans Selye was one of the founding fathers of stress research. His view in 1956 was that "stress is not necessarily something bad – it all depends on how you take it. The stress of exhilarating, creative successful work is beneficial, while that of failure, humiliation or infection is detrimental." Selye believed that the biochemical effects of stress would be experienced irrespective of whether the situation was positive or negative. Since then, a great deal of further research has been conducted, and ideas have moved on. Stress is now viewed as a "bad thing", with a range of harmful biochemical and long-term effects. These effects have rarely been observed in positive situations.

When short-lived, or when perceived as challenge stress can have positive effects. This is termed as ***Eustress***. A momentary stress can mobilize the immune system for fending off infections and healing wounds (Segerstrom, 2007). Stress also arouses and motivates us to conquer

problems. Athletes, successful entertainers, and great teachers and leaders all thrive and excel when aroused by a challenge. Indeed some stress early in life is conducive to later emotional resilience.(Landauner&Whiting,1979).

Chronic or prolonged stress can harm us. It has a wearing effect on people that can become a very serious health risk if it continues over a long period of time. Chronic stress can lead to memory loss, damage spatial recognition and produce a decreased drive of eating. The severity varies from person to person and also gender difference can be an underlying factor. Children who suffer severe or prolonged abuse are at risk of chronic disease(Repetti et al,2002). People who lose their jobs, especially later in their working life, are at increased risk of heart problem and death(Gallo et al,2006)

So there is interplay between our heads and our health.

Stressors: Stressors are the things that push our buttons. They fall in to three



main types: catastrophes, significant life changes, and daily hassles. All can be toxic.

Catastrophes: Catastrophes are unpredictable large-scale events, such as wars, earthquakes, and famines. Nearly everyone appraises catastrophes as threatening. We often give aid and comfort to one another after such events, but damage to emotional and physical health can be significant. In surveys taken in three weeks after the 9/11 terrorists attack, for example, two-thirds of Americans said they were having some trouble concentrating and sleeping (Wahlberg, 2001).

For those who respond to catastrophes by relocating to another country, the stress is twofold.

The trauma of uprooting and family separation combine with the challenges of adjusting to the new culture's language, ethnicity, climate, and social norms (Piper, 2002; Williams & Berry, 1991). In the first half year, before their morale begins to rebound, Marovizky & Samid, (2008) newcomers often experience culture shock and deteriorating well being.

Significant Life Changes:

Life transitions are often keenly felt. Even happy events, such as getting married, can be stressful. Other changes- leaving home, becoming divorced, losing job, having a loved one die- often happen during young adulthood. Many studies indicated highest stress levels among young adults. These studies indicate that people recently widowed, fired, or divorced are more vulnerable to disease (Dohrenwend et al., 1982; Strully, 2009). In one Finnish study of 96,000 widowed people, their

risk of death doubled in the week following their partners death (Kaprio et al., 1987). Experiencing a cluster of crises- losing a job, home, and partner, - puts one even more at risk.

Daily Hassles:

Stress also comes from daily hassles- too many things to do, rush-hour traffic, aggravating housemates, long lines at stores, family frustrations, inadequate income, unemployment, solo parenting, overcrowding and friends who won't pick up their phones (Kohn & Macdonald, 1992; Repetti et al., 2009). The other stressors are inadequate income, unemployment, solo parenting and overcrowding. Prolonged stress takes a toll on our cardio vascular system. Thinking that some of the people you encounter each day will dislike you, distrust you, or doubt your abilities makes daily life stressful.

The stress response system:

Medical interest in stress dates back to Hippocrates (460-377 B.C.E). In the 1920s, Walter Cannon (1929) confirmed that the stress response is part of a unified mind-body system. He observed that extreme cold, lack of oxygen, emotion arousing events all trigger outpouring of stress hormones epinephrine and nor epinephrine from the adrenal gland. These hormones alert brain through number of brain pathways the sympathetic nervous system increases heart rate and respiratory rate, diverts blood from digestive system to skeletal muscles, dulls feelings of pain and pours sugar and fat from body stores into the blood. All this prepares the body for the response which Cannon called Fight or Flight response.



Physiologists also identifies another stress response system. On orders from cerebral cortex via the hypothalamus and pituitary gland the outer part of adrenal gland secretes glucocorticoid stress hormones like cortisol. The two systems work at different speed.

Canadian scientist Hans Selye's(1936,1976) 40 years of research on stress extended Canon's findings. Selye proposed that the body's adaptive response to stress is so general that, like a singular burglar alarm it sounds who ever the intruder is. He named this response the general adaptive syndrome (GAS) ,and he saw it as a three phase process.

Let us say you suffer a physical and emotional trauma. In the first phase you have an alarm reaction as your sympathetic nervous system is suddenly activated. Your heart rate zooms. Blood is diverted to your skeletal muscle. You feel the faintness of shock.

In phase II Resistance with your resources mobilized you are ready to fight back. Your temperature, respiration ,heart rate remains high. Adrenal gland continues to pump the hormones in to your blood stream. You are fully engaged summoning all your resources to meet your challenge.

In phase III exhaustion as time passes, with no relief from stress, your body's reserves begin to run out. With exhaustion you become more vulnerable to illness or even in extreme cases collapse and death.

Selye's basic point: Although human body copes well with temporary stress, prolonged stress can damage it. The brain's production of new neurons slows and neural circuits degenerate.(Dias

Ferreira et al.,2009).One study found shortening of telomeres, pieces of DNA at the ends of chromosomes, in women who suffered enduring stress as caregivers for children with severe disorders.(Epel et al 2004).

Facing stress, men more often than women tend to socially withdraw, turn to alcohol, or become aggressive. Women more often respond to stress by nurturing and banding together. This may in part be due to oxytocin, a stress-moderating hormone associated with pairing-bonding in animals and released by cuddling, massage, and breast-feeding in humans(Campbell,2010; Taylor,2006). Gender differences in stress responses are reflected in brain scans: Women's brains become more active in areas important for face processing and empathy; men's become less active (Mather et al.,2010).

Stress and illness

A relatively new field psychoneuroimmunology. This awkward name makes sense when said slowly: your thoughts and feelings (psycho) influence your brain(neuro), Which influences the endocrine hormones that effect your disease -fighting immune system.

Hundreds of new experiments reveal the nervous and endocrine systems' influence on the immune system(Sternberg,2009).You can think of the immune system as a complex surveillance system .When it functions properly it keeps you healthy by isolating and destroying bacteria, viruses and other invaders. Four types of cells are active in these search and destroy missions. Two are types of white blood cells called Lymphocytes. B lymphocytes form in the bone marrow and release antibodies that fight bacterial infections.



T lymphocytes formed in the thymus and other lymphatic tissue and attack cancer cells, viruses, and foreign substances—even 'good' ones such as transplanted organs. The third agent is the microphage ('big eater'), which identifies pursues and ingests harmful invaders and worn out cells. And finally the natural killer cells pursue diseased cells (such as those infected by viruses or cancer). One's age, nutrition, genetics, body temperature and stress all influence your immune system's activity.

When the immune system doesn't function properly, it can err in two directions. Responding too strongly, it may attack the body's own tissues, causing some forms of arthritis or an allergic reaction. Under standing, it may allow dormant herpes virus to erupt or cancer cells to multiply. Women are immunologically stronger than men, making them less susceptible to infections. but this very strength also makes them more susceptible to self – attaching diseases, such as lupus and multiple sclerosis (Morel, 1995; Pido-Lopez et al., 2001).

Surgical wounds heal more slowly in stressed people. In one experiment, dental students received punch wounds (precise small holes punched in the skin). Compared with wounds placed during summer vacation, those placed three days before a major exam healed 40 percent more slowly (Kiecolt-Glaser et al., 1998). Marriage conflict also slows punch wound healing. (Kiecolt-Glaser et al., 2005).

Stressed people are more vulnerable to colds. Researchers dropped a cold virus into the noses of stressed and relatively unstressed people. Among those living stress- filled lives, 47 percent developed

colds. Among those living relatively free of stress, only 27 percent did. Other studies reveal that major life stress increases the risk of a respiratory infection (Pedersen et al., 2010).

Stress and AIDS

Stress cannot give people AIDS. But stress and negative emotions speed the transition from HIV infection to AIDS. HIV –infected men who experience stressful events, such as the loss of a partner, exhibit somewhat greater immune suppression and travel a faster course in this disease.

Stress and Heart Disease: Stress is much more closely linked to coronary heart disease. In a classic study Meyer Friedman, Ray Rosenman, and their colleagues tested the idea that stress increases vulnerability to heart disease by measuring the blood cholesterol level and clotting speed of 40 U.S. male tax accountants at different times of the year. From January through March, the test results were completely normal. Before April 15 filing deadlines, their cholesterol and clotting measures rose to dangerous levels. In May and June, with the deadlines past, the measures returned to normal. Stress predicted heart risk for these men.

Depression too can be lethal. Happy people tend to be healthier and to outlive their unhappy peers (Diener & Chan, 2011; Siahpush et al., 2008).

Promoting health:

Promoting health begins with implementing strategies that prevent illness and enhance wellness. Stressors are unavoidable. This fact coupled with the fact that persistent stress correlates with heart disease, depression, and



lowered immunity, gives us a clear message that we need to learn to cope with the stress in our lives, alleviating it with emotional, cognitive, or behavioural methods. Research has found that Optimism, Social Support, Aerobic Exercises, Relaxation and Meditation help to lower stress and stress related health problems.

Reference

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