

STRESS AND CHANGES IN BEHAVIOR

CC-10 (Health Psychology) Unit 2; SEM III

By

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STRESS AND CHANGES IN BEHAVIOUR

Links between stress and CHD highlight the impact of stress on the classic risk factors for CHD, blood cholesterol, raised blood pressure and smoking. These risk factors are strongly influenced by behavior and reflect the behavioral pathway between stress and illness.

Smoking

Smoking has been consistently linked to a range of illnesses including lung cancer and coronary heart disease. Research suggests a link between stress and smoking behavior in terms of smoking initiation, relapse and the amount smoked.

Wills (1985) - Smoking initiation in adolescents is related to the amount of stress in their lives.

Santi et al. 1991- Children who experience the stressor of changing schools may be more likely to start smoking than those who stay at the same school throughout their secondary education.



Experimental study

Perkins et al. (1992) exposed smokers to either a stressful or a non-stressful computer task and asked the subjects to smoke a cigarette or sham smoke an unlit cigarette.

RESULT- The results showed that regardless of whether the smokers smoked or not, all subjects reported an increased desire to smoke in the stressful condition. However, this desire was less in those smokers who were actually allowed to smoke. This suggests that stress causes an increased urge for a cigarette, which can be modified by smoking.

Gilbert and Spielberger (1987)- In a naturalistic study, smokers were asked to attend a stressful social situation and were instructed either to smoke or not to smoke. Those who could not smoke reported the occasion as more socially stressful than those who could smoke.

Metcalf et al. (2003) used the Reeder Stress Inventory to relate stress to health behaviors and concluded that higher levels of stress was associated with smoking more cigarettes.

Eating

Diet can influence health either through changes in body weight or via the over or under consumption of specific dietary components.

Greeno and Wing (1994) proposed two hypotheses concerning the link between stress and eating:

- (1) the general effect model, which predicts that stress changes food intake generally; and
- (2) the individual difference model, which predicts that stress only causes changes in eating invulnerable groups of individuals.

Most research has focused on the individual difference model and has examined whether either naturally occurring stress or laboratory-induced stress causes changes in eating in specific individuals.

Michaud et al. (1990) reported that exam stress was related to an increase in eating in girls but not in boys.



Baucom and Aiken (1981) reported that stress increased eating in both the overweight and dieters.

Cools et al. (1992) reported that stress was related to eating in dieters only.

Conner et al. (1999) examined the link between daily hassles and snacking in 60 students who completed diaries of their snacking and hassles for seven consecutive days. Their results showed a direct association between increased daily hassles and increased snacking but showed no differences according to either gender or dieting.

Inconsistencies in the literature have been described by Stone and Brownell (1994) as the 'stress eating paradox' to describe how at times stress causes overeating and in others it causes under eating without any clear pattern emerging.



Exercise

Exercise has been linked to health in terms of its impact on body weight and via its beneficial effects on coronary heart disease. Research indicates that stress may reduce exercise whereas stress management which focuses on increasing exercise has been shown to result in some improvements on coronary health.

Accidents

Research examined the effects of stress on accidents and correlational research suggests that individuals who experience high levels of stress show a greater tendency to perform behaviors that increase their chances of becoming injured (Wiebe and McCallum 1986).

Johnson (1986) has also suggested that stress increases accidents at home, at work and in the car.

Illness as a stressor

Stress may influence individuals' behavior in terms of their likelihood to seek help, their compliance with interventions and medical recommendations, and also adopting healthy lifestyles. Therefore, stress may cause behavior changes, which are related to the health status of the individual.

Stress and illness onset and progression

Stress causes changes in both sympathetic activation (e.g. heart rate, sweating, blood pressure) via the production of catecholamines and the hypothalamus pituitary adrenocortical activation via the production of cortisol. These changes can directly impact upon health and illness onset.

1. Sympathetic activation: The prolonged production of adrenalin and noradrenalin can result in:
 - blood clot formation;
 - increased blood pressure;
 - increased heart rate;
 - irregular heart beats;
 - fat deposits; plaque formation; and
 - immuno suppression.

These changes may increase the chances of heart disease, kidney disease and leave the body open to infection.



Stress and illness onset and progression

2. HPA activation: The prolonged production of cortisol can result in: decreased immune function; and damage to neurons in the hippocampus. These changes may increase the chances of infection, psychiatric problems and losses in memory and concentration.

Physiological changes can be further understood in terms of Johnston's chronic and acute model of the stress illness link (Johnston 2002). Chronic stress is more likely to involve HPA activation and the release of cortisol. This results in ongoing wear and tear and the slower process of atherosclerosis and damage to the cardiovascular system.

Acute stress operates primarily through changes in sympathetic activation with changes in heart rate and blood pressure. This can contribute to atherosclerosis and kidney disease but is also related to sudden changes such as heart attacks.