

PHYSIOLOGICAL AND SOCIO- PSYCHOLOGICAL BASES OF STRESS

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Abstract

This article examines stress and its effects on human physiology. It also provides information about the diseases that occur as a result of stress and the changes in human physiology as a result of stress. It also provides information about the social foundations of stress and the psychological foundations of stress. It explains how stress affects a person and the changes that result from stress.

Keywords: Stress, physiology, physiological effects of stress, social foundations, psychological foundations, diseases, psyche, reaction, hormones, organism, nervous system, theory.

Introduction

We know that many people are currently experiencing stress and its effects. We can also include stress in the list of today's problems. Stress has a negative impact not only on human psychology, but also on its physiology, body movement, function, and nervous system. We can observe the state of stress in each person and analyze whether stress, which arises as a result of various factors, is a problem for them.

Many scientists have studied the effect of stress on human physiology. Modern research shows that the specific nature of emotional reactions during stress is that hormonal and many other physiological reactions of the body, in particular the nervous system, are interconnected. It is known that when a person is angry, some parasympathetic reactions are activated. In particular, as a result of the activation of feelings of fear and disgust, the nervous system is tense and various problems arise in human health.

Main Part

According to Z.G. Turoskaya, individuals with a predominance of sympathetic responses are more likely to exhibit actions under emotional stress, sthenic, that is, feelings such as joy and pleasure, and aggressive behavior, and individuals with a predominance of internal reactions are more likely to exhibit depressive behavior.¹

A number of studies have established the dependence of stress reactions on the typological characteristics of the central nervous system. People with a strong nervous system are

¹ Мельникова М. Л. Психология стресса: теория и практика: учебно-методическое пособие. — Екатеринбург :Урал. гос. пед. ун-т, Ин-т психологии, 2018. — 112 с.

considered resistant to stress. Swiss researchers have identified various biochemical correlates of emotional stress. As a result of extensive research conducted in the laboratory of M. Frankenhauser, it was concluded that the objective and physiological manifestations of stress depend on its subjective assessment. Neuroendocrine reactions to the socio-psychological environment reflect the degree of influence of this environment on the individual. As a result, various external conditions, in turn, cause reactions. As a result, the stress level increases as a result of situations arising in external conditions.

Physiological manifestations of stress Activation of the hypothalamus also performs a number of important functions directly related to stress in the human body. In this case, emotional reactions in a person are activated, the intensity of nutrition, sleep, energy metabolism is regulated, the nervous systems of the body are coordinated, and the adrenal glands are controlled. When a person is exposed to stress, the severity and nature of the reactions during the initial emotional arousal are assigned to the hypothalamus. During stress, on the one hand, the activity of the sympathetic nervous system increases, and on the other hand, the adrenal glands cause stress-related hormone secretion.

The nervous regulation of metabolism in the human body leads to a loss of dynamic balance between the two subsystems of the autonomic nervous system: its sympathetic (involuntary) and parasympathetic (voluntary) divisions. The function of the sympathetic division is to prepare the body for survival, fight, flight, and supply the necessary resources during times of stress. When the sympathetic division is activated, the heart beats faster, and the hormone adrenaline appears in the blood. We can see that the indicators of stress changes in physiological functions are also associated with other psychological changes. According to researchers, psychological and physiological indicators are the most sensitive indicators of a person's physical and mental state.

Hans Selye won the Nobel Prize for his discovery that the stress response involves the activation of the adrenal cortex, which helps the human body cope with various challenges with the help of special anti-stress hormones. This response is also triggered by the hypothalamus, but is significantly different from the other.²

The body can overcome stress or adapt to stress. If stress continues to affect the body for a long time, the body begins to adapt to stress. The state of stress is not eternal and does not last forever. According to Selye, adaptive energy reserves are limited. Therefore, if stress continues to affect the body, physiological stress is replaced by pathological stress, that is, a person experiences clinical illness. For this reason, psychosomatic diseases occur in humans, and long-term stress also begins to affect the cardiovascular system. In many clinical observations, stress primarily affects the cardiovascular system. In a stressed person, blood flows through the vessels faster or slower, and disturbances in the functioning of the cardiovascular system occur. The physiological direction of studying the problem of stress began with the work of V. Cannon, the creator of the theory of homeostasis. According to him, the central and autonomic nervous systems play a special role in stress. In this case, hereditary diseases mainly occur in stressful situations. When a person is stressed, hereditary diseases in sleep wake up and become

2 Щербатых Ю. В. Психология стресса и методы коррекции. —СПб.: Питер. 2006. — 256 с.

active. Examples of these diseases include blood pressure diseases, stomach diseases, diabetes, cancer, Alzheimer's disease.

Physiologist L.A. Orbeli discovered the connection between stress and endocrine diseases. In this case, stress causes endocrine diseases. These diseases control the human condition to a certain extent. One of the main functions in humans, the respiratory function, is disrupted as a result of stress, and clinical diseases occur in humans.

Selye developed the theory of the general adaptation syndrome. According to his theory, the sympathetic nervous system is activated in the fear response. The scientist measures the stress response by increasing the amount of norepinephrine, corticosteroids or ACTH, that is, pituitary hormones, in the blood. In the resistance reaction, the body uses all its resources to overcome the stress situation. As a result, the body gets tired, diseases and stress occur.

In physiological stress, the sympathetic nervous system is activated, preparing the body for fight or flight. Everyone experiences these situations. Prolonged stress leads to exhaustion and death. When Selye studied the diseases that occur during stress, he paid attention to changes in the body. During stress, severe headaches, weakness of the body, lack of effort to improve the situation, confusion, memory loss, fatigue, and sudden changes in mood occur. Selye proved in his research that the stronger the stress reactions, the more cardiovascular diseases, gastrointestinal diseases, and mental illnesses are exacerbated.³

Stress has a significant and significant impact on human physiology. That is why stress was initially classified as a clinical disease. When scientists studied the effects of stress on human physiology, they also monitored the physical and mental changes that occur in humans. They also developed physiological competencies to combat stress. For example, we can mention meditation, physical exercise, and calming effects.

The situations that occur in adolescents when stressed, the changes in them, physical and psychological changes, and stress response mechanisms are different from those of people at other ages. During this period, hormonal changes in adolescents, changes in the brain and nervous system have a strong impact on stress reactions. In adolescents, the hypothalamus, pituitary, adrenal glands, and sex hormones change under the influence of stress. Since cortisol levels are high in adolescents, this increases their sensitivity to stress. Long-term stress causes a decrease in immunity in adolescents, which, in turn, leads to frequent illnesses. As a result of stress, growth and development slow down in adolescents. Obesity or changes in appetite are observed as a result of metabolic disorders. At the same time, stress also significantly affects changes in sex hormones in adolescents. As a result, adolescents begin to experience aggression and depression. Stress slows down the development of the prefrontal cortex of the brain, i.e. logical thinking and impulse control. The limbic system, emotions, and stress responses slow down. Sometimes stress causes fear. As a result, the amygdala, i.e. the area that processes stress through fear, reacts more quickly in adolescents. This can lead to excessive sensitivity, anger, and anxiety. As a result, it becomes difficult for adolescents to manage the situation and make decisions. As a result, adolescents may act impulsively or choose ways to escape stress in the wrong ways. Teenagers who experience stressful situations mistakenly think that they can

3 Хван. А. Т. Психологический стресс. — Казань: Бук, 2021. — 130 с.



escape from stress by escaping. As a result, many teenagers become addicted to drugs and addictions, and they face even more problems and illnesses.

The effects of stress on adolescents are varied, and it is precisely in stressed adolescents that physiological diseases such as sleep disorders, sweating, increased heart rate, gastrointestinal problems, gastritis occur.

There are also psychological effects of stress on adolescents. Stressed adolescents are at increased risk of depression and anxiety. They lose social roles, self-esteem decreases, and problems arise with attention and memory.

To prevent and reduce stress, it is necessary to exercise, eat right, choose the right sleep time, do breathing exercises, engage in creative activities, have family conversations, and communicate.⁴

Every person experiences stress at some point in their life. During this period, they should not lose themselves or fall into depression. They should look for ways to reduce stress. As we can see, stress affects all human organs. It leads to a weakening of their reactions, body structure, and memory. As a result of physiological stress in humans, various diseases appear in the human body, which have a profound impact on the future of a person. Human physiology is complex and can cause a response to any stress. It is possible to prevent diseases caused by stress and form a response to these diseases.

Stress also has a great impact on a person in social life. A person cannot properly fulfill their roles in society, and a person may withdraw from social life and lose their desire to communicate.

The transactional model of stress and coping, developed by Lazarus and Folkman in 1984, is a psychological framework that examines how people perceive and respond to stressors in their environment. This model argues that stress is not only caused by external events, but also by interactions between people and their environment. At the heart of this model is an appraisal process, in which individuals evaluate a situation based on their available resources. In primary appraisal, the event is assessed as dangerous or safe. In secondary appraisal, the person's ability to cope with the perceived threat, i.e., the stress, is assessed. In the third step, a strategy is developed to cope with stress. Coping with stress is divided into two main types. The first type is problem-oriented coping, which seeks to directly resolve the stress. The second type is emotion-oriented coping, which involves a reaction aimed at relieving the stress. In this, people recognize that stress can be overcome by developing stress management skills. Therefore, the transactional model influences cognitive characteristics and provides information about the complexity of stress and its ability to be overcome.⁵

The famous sociologist Emile Durkheim, in his "Theory of Anomie", emphasized that the breakdown of social norms, values, and order in society causes anomie, that is, individual and collective stress. Durkheim developed this theory precisely during times of social unrest and economic crisis. It was at those times that economic crisis or social changes hindered people's

4 Щербатых Ю. В. Психология стресса и методы коррекции. — СПб: Питер. 2006. — 256 с.

5 Lazarus. R. & Folkman. S. Stress, Appraisal, and Coping. — New York: Springer. 1984.

goals. As a result, people became limited, hopeless, and stressed. It was precisely as a result of social unrest that an increase in stress levels was observed in people.⁶

In the sociologist Merton's "Strength Theory", when opportunities to achieve goals in society are limited, people respond to it with stress and social disruption. He also put forward the theory of anomie. According to Merton's theory, most people strive to achieve culturally recognized goals. A state of anomie prevents people or entire groups of people from pursuing these goals. The result is rebellion, withdrawal, and deviant behavior. Based on the theory, Merton develops five behavioral patterns to cope with this pressure. The first is conformity, which emphasizes that accepting cultural goals and adapting to social changes serves to reduce pressure. The second type is innovation, i.e., when adopting goals, legitimate means are not recognized. The goal is achieved by the wrong means. In the next path, a person rejects the goal, relying only on methods, i.e., ritualism. There are individuals who reject both the goal and the method. This path is what Merton calls retreatism. The final path is rebellion, which replaces the goal and the method. For example, young people who do not have a paid job experience stress, as a result of which they try to earn money in other ways and crime increases.⁷

In addition, it is appropriate to analyze Merton's "Role Theory". The main idea of this theory is that people experience stress due to conflict between social roles or the fulfillment of too many roles. According to this theory, stress also occurs in a person as a result of the different demands of roles on each other. For example, if work and family responsibilities are different, stress occurs in a person if these roles are not distributed correctly.⁸

Social comparison theory was developed by Leon Festinger. According to this theory, stress occurs when people compare themselves with others. Low self-esteem increases stress levels. This comparison is made based on financial and social status. For example, when a person compares his low income with that of wealthy friends or relatives, he experiences undue stress. As a result, he has problems in socialization, society, and communication.⁹

Conclusion

In conclusion, sociological theories of stress explain the role of a person in the social environment, institutions and relationships, and the impact of stress on mental health. Through the theories, it is possible to find ways to overcome structural problems in society, such as poverty, racism, and gender inequality. At the same time, the analysis and study of stress that arises as a result of people's inability to find their place in the social environment, society, and the correct distribution of roles can be improved based on sociological theories.

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8 Merton. R. K. The Role-Set: Problems in Sociological Theory. The British Journal of Sociology. 1957. —С. 106.

9 Festinger. L. A theory of social comparison processes. Human Relations. 1954. —С.117.



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