

A Study of the Relationship Between Stress and Psychosomatic Disorders

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Abstract. These days the subject of stress among the people, the specialists, hygienic specialists and other people responsible for the welfare of people has turned out to be a very important subject. Man lives in a place where he is exposed to many harmful diseases in his environment, and it has endangered his health. In reaction to these threats, an extensive number of adaptabilities are formed in body in order to defend it against these maladies. In this article an attempt is made to establish a relationship between stress and psychosomatic disorders, and trace the diseases associated with stress.

Key words: Psychosomatic disorders, Stress, Physiological, Biological, Psychological, Vulnerability

1. Introduction

For many years the specialists have realized that special behavioral patterns can threaten man's life. Stress is considered one of such patterns which was first considered as a means of explaining the way body might react against diseases, harms and other problems, but later was turned into a threatening agent for body. Besides physiological reactions, stress is accompanied by such agitations like anger and sadness. It should be remembered that there are some weak symptoms of stress to the extent that they are not felt, but on the other hand, there are some apparent symptoms like the sweating of hands, lack of appetite, breathing problems or fast heart beating. The important thing about stress is that it has harmful effects on the lives of individuals. Stress has turned into a focus of attention by many specialists, in that, they consider stress quite effective in the formation of diseases and disorders.

2. Discussion

During the last few years, Stress has been associated with such symptoms like high blood pressure, increase in cholesterol, anger and finally loss of hair. These are the physical symptoms and indicate that body is under pressure. As time passes, these bodily symptoms turn into further unpleasant consequences, the most critical of which is heart disease. However, there are other diseases like gastric ulcer and diabetes caused by stress. It is also believed that almost all of the human diseases are connected with stress. These diseases are not only mental but also physical, such as cancer and Tuberculosis. It is estimated that 50 to 80% of diseases are caused by stress. This result has been obtained from the tests done by scientists on animals; they introduced stress on animals and in this way the latter were inflicted with different kinds of bodily diseases. It should also be remembered that the progress and increase in the rate of heart diseases has had a direct proportion to the increase in stress.

The broadest definitions of stress include the entire complex sequence of events: (1) the event that requires some change (external or mental; real or imaginary), (2) internal processes (perception, interpretation of the event, learning, adaptation, or coping mechanisms), (3) emotional reactions (our feelings) and (4) other behavioral-bodily reactions (nervousness, sweating, stumbling over words, high blood pressure, and all the medical conditions mentioned below). In a more limited usage, *stress* is the upsetting situation and *strain* is the mental and physical reactions. However, most of us use the term stress loosely for both the threatening situation and the anxious reaction. (Schaffer, 85)

Psychosomatic disorders refers to bodily ailment or symptom, caused by mental or emotional disturbance, in which psychological stresses adversely affect physiological (somatic) functioning to the point of distress. Psychosomatic disorders may include hypertension, respiratory ailments, gastrointestinal disturbances, migraine and tension headaches, sexual dysfunctions, and dermatitis. Many patients with psychosomatic conditions respond to a combination of drug therapy and psychotherapy. They are characterized by physiological changes that originate, at least in part, from emotional factors. The classical psychosomatic symptoms and their theorized causes are shown in the table. Psychological states influence body organs through a combination of three interrelated mechanisms: neural, hormonal, and immunologic.

Voluntary movements (for example, clenching the teeth) are mediated through the motor neurons by the conscious command of the brain. In stress, clenching of the teeth, mediated by the same motor neurons, may also occur, but the act may not be voluntary and conscious. Stress usually causes an activation of the sympathetic nervous system and the hypothalamo-pituitary-adrenal axis followed by a decrease in immune competence. Immune mechanisms may be suppressed in part through corticosteroid activation, but a decrease in T-lymphocyte activity in stress may not be mediated by hormones. Individual specific, but inadvertent, conditioning of specific conflict or stress to specific bodily malfunction may be an important psychosomatic mechanism. The studies show that the stressors can be excitatory, biological, physical, chemical, social, evolutionary, educational, cultural and psychic. It should also be added that the more individuals are exposed to stress, the more is the probability that they are exposed to psychological and physical diseases. The exposure of individual to different intensive situations at a particular time, will impose heavy pressure on the defensive system of the individual, which depends upon the intensity of stimulation, period of stimulation and the control reception. Although the immunity system protects the body from the pathogenic microscopic creature, it is confirmed that stress and excitation can reduce the resistance of immunity system against disease. It seems that the exposure to stressful situations in life, like loneliness, will decrease the immunity system of body.

Hans Selye believed that body reacts against stress through a series of uncertain processes, which he called general adaptation syndrome, or, GAS. These processes, consists of four stages: the first reaction takes place against a stressful factor in the form of a short time shock which leads to a decrease in the defensive process of body. This stage takes place quickly, followed by anti shock where the defensive mechanisms of body turns active through such changes in body, including an increase in heart beat, dilation of eye ball, a decrease in body temperature, sweating And the flow of glucose in blood. In case stress persists again due to the presence of stressful factors, the next stage of "General Adaptation Syndrome", i.e. resistance, appears. Under this condition, the defensive mechanisms replace the previous stage. If the stressful factors are psychological, the lonely individual might turn sad. If the stressful is not removed in the resistance stage, or, if it returns, the ability of body for resistance against it decreases. It consequently leads to the beginning of the fourth stage, i.e. the Exhaustion stage. This stage begins when the individual surrenders.

Individuals trying to fit in a certain position/job that doesn't fit their personality or capabilities have a higher chance to develop cardiovascular diseases. Chronic coronary disease is more typical for proactive goal-oriented, ambitious and less tolerant individuals. Individuals suffering from stomach ulcers are typically very anxious and irritable. They are very conscientious, but usually have a low self-esteem, are vulnerable, shy, sensitive and hypochondriac. These individuals always try to do more than they are capable of. They tend to overcome difficulties having very high level of anxiety. The level of stress-related pathological changes in the body is usually linked with personal assessment of the situation, which in turn depends on feelings of personal responsibility. The signs of emotional tension appearing in stressful situations tend to intensify when there is a lack of physical activity. (Goldberg, *Anxiety* p. 95)

Stress leads to different kinds of disorders. The same type of disease could have a stress origin or could be caused by something else. Many different factors may be combined with the stress in a person's life that has a negative influence on the body function. The combination of negative factors is particularly dangerous because it creates more chances to develop certain diseases. Among the many stress-related disorders the main ones are neuroses - mental imbalance caused by prolonged psycho-emotional experience, mental and physical strain, lack of rest or sleep, long-lasting internal struggling, inhibited feelings of grief, anger or suffering. Some somatic diseases may also cause neurosis as well.

Neurosis may appear due to having a lack of options to resolve a serious problem. It could happen when a person tries to resolve a problem, but is unable to do it. This leads to increased sensitivity or irritability to the problem making an individual more emotional. This then causes the person to experience various pains in response to the effect of stressors.

Opele and Trambal (1967) have done experiments on the vulnerability level and have concluded that mature individuals, who can adopt themselves, when under stress, can do better than those who cannot adopt themselves. The reaction to stress, usually, takes place in three forms: emotional, behavioral and physiological. Most of these forms appear together. The emotional reaction: can appear in the form of annoyance, anger, melancholy, sadness, anxiety, fear and horror.

Behavioral reaction: it depends upon the personality of people and the nature of stressful factors. Some people show reaction to stress by aggression. There are also people who turn to alcohol in order to reduce stress; in this way they are able to get rid of their problems.

Physiological reaction: The elements participating in this process are central nervous system, hypothalamus, sympathetic nervous system, front and rearm, medulla and upper renal cortex. The physiological parts and their excretions (Hormones) are responsible for the response of neuroendocrine to stressors. It should also be remembered that not all the parts take part in the reaction to stress. Stressors, those which are received in the central nervous system, or, those which are received in baroreceptors and chemoreceptors are transferred to brain and play the role of afferents. Finally, this information moves to hypothalamus in order to create suitable response. Hypothalamus makes the nervous system and front and rearm grand active. When sympathetic is stimulated, Adrenal medulla, which is a part of the nervous system, becomes active. Hypothalamus stimulates front grand by releasing hormones such as CRH emancipator, CHRH and, finally, PRH. Some of these hormones in front grand are released, so that hypothalamus reduces the excretion of its controlling hormones.

Adreno Cortico Theropin (ACTH) which is released from front grand causes the release of cortisol from adrenal cortex. Adrenal cortex exudes Aldosterone in response to the excretion of (ACTH). Rearm hypophysis gland is the last Endocrine gland. When the rearm hypophysis gland is stimulated, it exudes antidiuretic hormone (ADH), or, vasopressin. The stimulating effects of sympathetic front and rearm hypophysis glands, adrenal medulla and adrenal cortex are caused by catecholamines (the neurotransmitters and special chemical materials) and the hormones released from the nervous systems. Catecholamines, epinephrine and norepinephrine are stimulated by a special receptor. These receptors are available in different body cells.

According to the researches done by Hans Selye on the impact of different kinds of stresses on body physiology, some specialists consider psychic-bodily disorders as adjustment disorders, that is, producing disorder in an individual due to the lack of ability in adaptability caused by stress. There are two fast growing fields concerning the role of the psychological factors in the health of individuals: Behavioral Medicine and Health psychology.

Some psychologists have different opinions regarding the nature of the causes of disorders. Some believe that each psychic-physical reaction is an indicative of a kind of special psychic disease in individuals. This disease is caused under special conditions and occurs with reference to the past and personality of the individual. For example, they believe that hypertension is related to an anger an individual has been unable to overcome in the past, due to the strong authority of his or her parents. This individual has been unable to project his anger, and instead has introjected it; this has created a problem for blood circulation. Gastric ulcer is also seen among those individuals who are ambitious. (Cooper, 208)

On the other hand, some of the psychologists approve of the general theory pertaining to the cause of suffering of psychic-physical diseases. The research done by Buck and Hobs indicates that there are more than one psychic-physical reactions in individuals. Therefore the cause of these kinds of diseases can be general not particular.

There is another reason for the persistence of general cause for the psychic-physical reaction, that is, there might be a particular psychic state in a particular disease, but it does not necessarily mean that this state is limited to that particular disease. For example, repression, anger, melancholy, ambition, and anxiety are found in all of the psychic-physical diseases like gastric ulcer, asthma, hypertension, migraines, and so on.

Another important theory pertaining to reaction to psychic-physical diseases is the theory of somatic vulnerability. According to this theory, a person who has an unbalanced nervous system is prone to vulnerability against stress. This vulnerability and weak resistance, occurs in the weakest parts of body. For example, a person who suffers gastric ulcer is not different from a person who suffers asthma concerning the personal characteristics and motivations; the only difference is that the stomach of the former is weaker than the latter's respiratory system.

A major problem is telling the difference between realistic, helpful tensions, fears, or worries and unrealistic, unhealthy nervousness. This is because we all *could* start fretting about some possibly stressful event at almost any time. Risks are all around us. Thus, unrealistic worries are over-reactions to a tolerable situation or a prolonged over-reaction to a threatening situation that cannot be avoided. But how can you be sure a situation won't cause trouble? You can't. How can you be sure you won't handle the problem any better if you worried about it a lot more? You can't be. However, we can learn to recognize *extreme* over-reactions, e.g. being terrified while flying or obsessing for hours about an insoluble problem. But a little worry about crashing while flying is realistic and some thought is necessary to know that you can't do much about a problem. So, how much time should you devote to a particular problem? There isn't an exact answer; that's why some of us let anxiety overwhelm us. Today, most of the specialists who study psychological processes, reject the simplistic theories regarding body and pay attention to bodily symptoms. The weakness in the body might lead to the emergence of psychological problems, and vice versa. When the psychological

factors participate in a disease, they play an indirect role. For example, the personal characteristics cannot be the only factors in the emergence of Asthma. (Greenberg, 143)

A satisfactory level of emotional gain makes a person perform better. However prolonged emotional strain eventually leads to a drop in performance. The more complex the activity is, the quicker the person becomes distressed, causing feelings of fatigue, apathy, loss of concentration, distraction and memory difficulties. Some people may react to stress in a very active manner while the others would give up quickly. The emotional climate at work and home plays a major role in maintaining mental and physical health. Everybody's mood depends a lot on the mood of the people who surround him/her, and it shows up in their words, mimics and behavior. When communicating with other people, one tends to take on their optimism or depression. Thus mutual sympathies become typical signs of good atmosphere in the group of co-workers or family members.

In the recent years, there has been an emphasis on interaction between the psychological states and biological and social variants. According to the biological, psychological and social pattern, a person can be considered as a system united with the secondary biological, psychological and social systems. The biological, psychological and social problems are produced when the lives of individuals are affected by changes in the environmental problems. A reference to the history of those people affected by psychological – physical diseases, shows that the early periods of life have been disturbing and full of turbulences.

In the early lives of these patients, there are such factors like anxiety, worry, love of father and mother, excessive protection, intensive limitations, lack of love and affection and other conventions effective in childhood. There is another theory in this regard, and that is, most of the individuals affected by psychological – physical diseases have not enjoyed emotional and social relationship with other children and people of their own age.

3. Conclusion

Stress has played important and critical roles in the emergence of certain physical diseases. It is not limited to mental problem, but it has its own physical malady. Ever since man has entered the industrial era in the modern societies, there has been an increase in relationship between stress and its effect.

In general, the history of the growth of the individual affected by psycho-physiologic reactions shows this fact that these people have been hard working in their education, and it has been important for them to compete with others in education; quick progress in society has been important and strong motivations for them. The longer the period of the aforementioned state, the higher the probability of an increase in weakness and physical disorders. Therefore the study of personality characteristics, and other aspects of life accompanied by intensive and continuous stress, might turn out to be meaningful. It may destroy the individual psychologically and physically. Each one of the psychological, social and biological factors is important and there are many reasons that the importance of their common effects seems equal with the effects of each one of them.

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