

Stress and anxiety: The process of regulating internal environments in response to external environments

Biological and cognitive perspectives are considered in order to investigate how different psychological perspectives and theories can enhance the healthcare professional's understanding of stress and anxiety. In order to ensure optimum bodily functioning, various theories are investigated and analyzed.

The biological perspective will help to explain the physiological, genetic and neurological aspects of stress and anxiety. Whereas, the cognitive perspective will help to explain how the mind perceives and processes information with regard to schemas, the locus of control, self-efficacy and learned helplessness.

Stress and anxiety are two very similar emotions. Usually you are stressed because you are anxious or anxious because you are stressed. A brief definition of stress would be "the non-specific response of the body to any demand made on it" (Selye 1978). Stress is usually defined by three different models; stress as a stimulus, stress as a response and stress as a transaction (or the stimulus-response concept) (Cassidy 1999). According to the stimulus model, stress is a force within the environment which makes a demand upon the individual. An example of this would be the stresses of work and daily life. The response model describes the individuals' physical and psychological experiences of stress; we say that they "suffer from stress". The physical and psychological symptoms of stress as a response would be irritability, sleeplessness, headaches, fatigue, digestive problems, anger and aggression and so on (Cassidy 1999). The transactional model incorporates both the stimulus and the response models and is described as the transaction between the individual and their environment.

Stress and anxiety can be a big issue within the healthcare setting, especially when dealing with children. Everybody can suffer from stress; staff, patients, parents and relatives and it can be triggered by a huge variety of reasons. Some of these reasons may be; the extra workload on staff, the patient and parents' stress about an upcoming appointment or operation, or the parents and relatives distress about their child being in hospital to name but a few. This stress and anxiety, caused by whatever reason, can have a big impact on the people it affects. Many aspects of a hospital environment can be stressful, for example, the ward environment could cause stress and anxiety due to the noise, smells and elaborate instruments (Porter et al 1999). Also, the professionals who work in

healthcare settings, such as the doctors and nurses, can be intimidating when wearing their uniforms as this can act as a barrier between the professionals and the patients and parents (Porter et al 1999).

The biological perspective can be used to explain some of these responses to stress and anxiety with regard to the physiological response of the body. The process of regulating internal environments in response to external environments in order to ensure optimum bodily functioning was termed "homeostasis" by Walter Cannon (1929). Cannon realized the importance of the central nervous system and the brain in restoring homeostasis. This restorative process can be in terms of autonomic or endocrine mechanisms to alter physiological processes within the body, or in terms of behavioral responses to alter the external environment (Cannon 1929). With regard to stress, Cannon also suggested that events which provoked emotions could instigate the fight or flight response, thereby identifying the influence of psychology on biology. During the fight or flight response the sympathetic division of the autonomic nervous system is aroused and adrenaline is released. The physiological responses to fight or flight include symptoms such as sweating, dilation of the pupils, increased heart rate, high blood pressure and inhibition of saliva flow meaning the mouth will become dry (Dolan 2007). From the healthcare perspective, patients who are awaiting an appointment or operation or anything which may be potentially stressful for them may exhibit symptoms of the fight or flight response, which means their blood pressure and heart rate may become raised, their shoulder and neck muscles may feel tense and they may breathe more rapidly.

It was Hans Selye (1956), however, who fully developed the ideas of Cannon and Bernard into a systematic model of physiological stress. Selye investigated the physiological responses to threats to the homeostasis of the organism such as that imposed by severe cold, heat, infection or toxic substances (Cassidy 1999). What he found was that regardless of the stressor he used, the physiological response was common to all. The common effects include enlargement of the adrenal cortex, reduction in size of the thymus and lymph glands and the development of stomach ulcers (Cassidy 1999). In particular this knowledge could be useful in diagnosing the source of a peptic ulcer in a patient where the cause of the ulcer is not clear. As mentioned before, adrenaline is released during the fight or flight response which explains the increased size of the adrenal cortex. From observing these responses, Selye proposed a three-stage model which he called the General Adaptation Syndrome (GAS). The first of these three stages is the alarm stage where the body prepares itself for fight or flight by increasing the heart rate, dilating the pupils etc. If the fight or flight response is successful, homeostasis is restored. However, if it is unsuccessful and repeated exposure to the stressor occurs, the body

continues to be aroused above the normal homeostatic level. In order to maintain this, extra resources are drawn from those which are needed for normal bodily functions such as digestion and immune system maintenance. Selye called this response the resistance stage. The third and final stage is the exhaustion stage, which occurs if the threat is not removed. At this stage organs collapse, ulcers develop and ultimately death occurs (Cassidy 1999).

Selye's GAS model can be transferred to situations in everyday life. For example, individuals working in a job where they are continually being asked to do more work, to deal with more complex situations and not being given any extra support or payment for it (Cassidy 1999). A good example of this is nurses within a healthcare setting who are constantly being asked to work more shifts and deal with more complex patients and illnesses. Initially the extra demands made may make the person angry which is the fight response or perhaps may make them want to leave which is the flight response.

Following Selye's work, the biological study of stress and anxiety began to focus on a more detailed analysis of the physiological processes and responses and developed into what is now known as the field of psychoneuroimmunology. Psychoneuroimmunology is the 'study of the interrelations between the central nervous system and the immune system' (Cohen and Herbert 1996). When the immune system is weakened we are prone to many different illnesses and diseases, and a central idea of psychoneuroimmunology is that stress and anxiety affects the immune system and weakens its functioning. When the immune system becomes suppressed we are susceptible to infectious diseases such as the common cold and our susceptibility to cancer and autoimmune disorders also increases (Dolan 2007). After periods of stressful or demanding work, the tendency to develop colds, for example, is often seen. In healthcare especially, work can be very demanding and stressful and usually long hours are worked at once, increasing healthcare professionals' susceptibility to illness and a suppressed immune system.

Another aspect of the biological approach is the role of heredity and inherited characteristics in behavior and the response to stress. Darwin suggested that variations among individuals of a species could be passed on to future generations, as it is known that inheritance occurs through a chemical code carried in the genes (Malim et al 1992). However, while the transmission of physical characteristics is well understood, the role of heredity in behavioral characteristics such as intelligence, personality and temperament is not entirely clear. Very young babies differ from each other in temperament. In a study by Chess and Thomas (1977), a group of babies were divided into three categories: (1) easy children who are typically positive in mood, adaptable and predictable; (2) difficult children

who are typically negative in mood, active, irritable and unpredictable; and (3) slow-to-warm-up children who are quite inactive and moody, slow to adapt and resistant to change (Scott and Spencer 1998). The study involved dipping the babies' toes in cold water to see their reaction. What they found was that while all children show the same behaviors at some time, some children were more likely to show certain behaviors than others. They found that 60% of children fall into one of the three groups. Although the biological perspective does offer lots of information, it does not tell the whole story, other perspectives will have to be explored as well. The cognitive perspective can be used to explain schemas, the locus of control, self-efficacy and learned helplessness. The locus of control is explained as; 'Locating the cause for events in our life within ourselves allows us to feel in control whereas locating causes for events in the hands of others, luck or circumstance means that we do not feel in control' (Cassidy 1999). Rothbaum, Wolfer and Visintainer (1979) report a relationship between coping behavior and the locus of control in children. Their findings suggest that inward behavior, for example helplessness, is related to an external locus of control, and outward behavior, for example aggression, is related to an internal locus of control. However their study is limited by its measure of coping and seems to be more a list of stress responses than coping behaviors. For example, inward behaviors include; not being responsive to others, being curled up or hunched over and stomach or headaches. Outward behaviors include; yelling or screaming, disobedience, over activity and hitting or breaking things (Lazarus and Folkman 1984). Anderson (1977) examined the relationship between the locus of control and coping behaviors among 102 owner-managers of small businesses during the 3 and a half-year period following a flood. He discovered that people with an internal locus of control used more task-related coping behaviors than those with an external locus of control. The latter of these also responded with more defensiveness than those with an internal locus of control. In the healthcare setting, healthcare professionals with an internal locus of control may be more able to cope with stressful events, such as a death, because they than those with an external locus of control, who would be more likely to feel stressed due to them feeling that their life is controlled by others.

Linked to the theory of the locus of control is learned helplessness, which results if denied success and control in a situation leads to a person behaving in a helpless manner and becoming dependent on others. The laboratory research design from which the concept of learned helplessness arose used a shuttlebox, which has two compartments separated by a barrier. The floor is an electrified grid through which shock can be administered on either side. The dogs were subjected to one of three conditions; controllable shock, uncontrollable shock or a no-shock control

condition. If the dog jumps over the barrier into the other compartment it avoids the shock or escapes it if the jump is made after the shock has begun. On each subsequent trial the dogs must jump over the barrier in order to avoid the shock (Lazarus and Folkman 1984). Seligman (1975, 1967) found that where dogs were given inescapable electric shocks they stopped trying to escape, even when put in situations where escape was again possible. They had learned to feel helpless (Cassidy 1999). This behavior appeared similar to the withdrawal and apathy observed in people with depression. The explanation was that depression in humans occurs as a result of learning that the consequences of one's behavior are not under one's own control. Patients who are in hospital for long periods of time may become depressed and learn to feel helpless as they do not feel in control of their lives and their illness.

Linked to learned helplessness is the theory of self-efficacy, which is defined as the belief that we are capable of accomplishing what we set out to do. People with high self-efficacy or beliefs in their personal effectiveness are generally more likely to undertake challenges, such as academic or social challenges, and persevere to see those challenges through. Bandura (1977a) found that "People fear and tend to avoid threatening situations they believe exceed their coping skills, whereas they get involved in activities and behave assuredly when they judge themselves capable of handling situations that would otherwise be intimidating". High levels of self-efficacy are linked to an increased ability to withstand stress as these types of people tend to view stressful situations more as challenges to be met rather than as obstacles which need to be overcome. Self-confidence in their abilities leads them to tackle stressors and persevere, even when they come across barriers.