

STRESS AND HEALTH: PSYCHOLOGICAL AND BIOLOGICAL DETERMINANTS; IMPLICATIONS FOR EDUCATION

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Abstract

Stress, when left unchecked, can cause traumas and psychological depression which can deter academic excellence as well as career destiny. Stress represents the effects of anything that seriously threaten or discomforts emotional health (homeostasis). Psychological stressors and many diseases that threaten public health have common relationship. The thrust of this paper is to unveil the psychological, behavioral and biological determines of stress and emotional health in order to unravel the best intervention strategies that can prove useful for treating stress-related disorders. The paper also proposes that certain psychological interventions can be help to forestall the diseases sickness that may result from acute stress responses in young and healthy individuals.

Keywords: Stress, Health, Psychological, Biological, Determinants, Implications and School Administrator.

Sustenance of a vibrant life is ultimately dependent on keeping our emotions and internal dispositions stable in the face of an ever dynamic environment. They way and manner human beings respond to environmental factors are what determine the level of stress they suffer in life. This is because stressors are part of the environment, which we live in and stress is also an element of everyday life. In as much as stress responses by humans and animals evolved as part of existential processes, Santrock (2000) observe that severe, prolonged stress responses might lead to tissue damage and diseases in human beings. In the same vein, if the threat of stressors is unremitting, most

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especially in order or unhealthy individuals, the long-term effects of it can damage health.

According to Amadi (2007), the human central nervous system (CNS) tends to produce integrated coping responses rather than single, isolated response changes. This shows that mammals are liable to exhibit high level of automated and hormonal reactions that maximize the possibilities for muscular as well as mental exertion when faced with environmental stressors. On the contrary, when mammals are face-to-face with adverse situations in which an active coping response is not forthcoming, they many engage in an automated vigilance reaction that involves the sympathetic nervous system (SNS) ignition followed by an active manifestation of movement and shunting of blood away from the skin region (Bennett and Robinson, 2000).

In other words, it is important to note that the level at which various conditions provoke different shades of biological responses is known as “situational stereotyping” (Lahey, 2004).

Genetic Aspect of Stress

Genetic make-up of an individual also plays a major role in determining how he/she responds to situational stimuli individuals who were raised by less nurturing mothers or parents tend to exhibits a “riotous” disposition to situations compared with those raised by nurturing mothers. Research report shows that there is increased serotonin (hormone) activity is found in individuals raised by nurturing parents and it leads to increased expression of a central glucocorticoid receptor gene (Meaney et al, 1993). The effect of the forgoing is that there is higher numbers of glucocorticoid receptors in the limbic system and improved glucocorticoid feedback into the central nervous system (CNS) throughout the individual’s life. It interests to realize from the above truth, that individuals who receive a high level of nurturing and parental care, in turn become highly nurturing mothers and parents whose offsprings also have high level of glucocorticoid receptors.

Psychosocial Aspects of Stress

This aspect of stress is widely related to individuals especially children and adolescents who are vulnerable to abuse-sexual, physical, emotional or neglect, divorce/marital crises. The mind is the first point of call for stressors in the environment. A stressor is a demand, circumstance or situation that destabilizes a persons’ haemostatic balance and sets the stage for response of increased autonomic arousal while stress is defined as the reaction or response of emotion and body of the individual to situations that are discomforting. Prolonged stress can be a predisposing factor to chronic anxiety, psychosomatic illness and a variety of other emotional problems (Caughey, 1996).

Sequel to the foregoing, victims or survivors of childhood sexual abuse are susceptible to high dimensions of both general distress and severe psychological aberrations including personality disorder. In a similar vein, such abuse during

childhood also connected to lopsided views towards learning and poor performance in school. For instance children and adolescents who are internally displaced during periods of war and political crises are vulnerable to Post-Traumatic Stress Disorder (PTSD) as well as dismissive symptoms. The Internally Displaced Persons (IDPS) in North-East Nigeria are liable to suffer learning difficulties and negative views learning severally. Nader et al. (1993), found in his study 70% of Kuwaiti children reported mled to severe Post-Traumatic Stress Disorder (PTSD) symptoms after the Gulf war. He stressed that some effects are long lasting. Macksound and Abner (1996) similarly found that 43% of Lebanese children continued to manifest post-traumatic stress symptoms 10 years after exposure to war-related trauma.

Anxiety and Depression

Anxiety is a nervous feeling or state of worry that something bad is going to happen. Anxiety is a negative emotional anticipation. In other words, it can be perceived as a pre-traumatic stress symptom. Anxiety has the ability to expose an individual to unhealthy psychometric 'magnetic field'. It can surround the victim with a negative aura, which can plunge the individual into his/his anticipated danger. According to Ngoka (2000), most stressful life events often precede anxiety disorders.

Depression is a psycho-medical condition in which an individual feels very sad hopeless and cases have physical symptoms like being unable to sleep (insomnia). The diagnosis of a major medical illness often has been considered a severe life stressor and often come with high rates of depression (Cassem,995) cases of divorce, unemployment and suicides are offshoots of depressive moods and psychiatric conditions. Studies have shown that consistent renewal of mind with positive thoughts and to seek counselling on emotional intelligence can effectively cushion the effects of anxiety and depression.

Biological Responses of Stress

Body hormones responsible for the production of stress conditions emanate from the Central Nervous System (CNS) and hypothalamic- pituitary adrenocortical region. The CNS stimulates the adrenal medulla to produce the hormone (epinephrine) which causes stress in a person (Bennett and Robinson 2003). The hormones called catecholamine and cortical contribute to the increase the sources of body energy by promoting another stress hormones and the conversion of glycogen into glucose. (ie blood sugar).

When energy is released it is distributed to the body organs that need it most by increasing blood pressure levels and contracting certain blood vessels while expanding others. The expanded blood vessels give rise to enhanced Cardiac output; that is increases in heart rate and the amount of blood pumped with each heart beat (troke volume). This situation causes specific stressors to elicit heavy heart responses there by providing evidence of situational stereotypy (Saab et al; 1992). On the country the increased availability and redistribution of energy in the body also contributed to the

activation of the immune system. The immune cells move into body tissues that are most likely to suffer damage during unfavourable conditions (e.g the skin)

Effects of Stress at Workplace

Undesirable workplace behaviours have become a notable concern in contemporary organizations and have received much attention among researchers (Bennett and Robinson, 2000). Stressors are liable to cause deviant workplace behaviours which violate obvious organizational norms and threaten the well being of the organization and its members. According to Applebaum, Deguire and Lay (2005), stress-induced deviant behaviours at workplace has accounted for a great amount of profit loss and has ability to damage workplace atmosphere.

Much of the researches on the negative consequences of stress at workplace have revealed that workload, job stress, autocratic leadership and the like are the causes of unhealthy relations in the organization as well as deviant behaviours (Lee and Allen, 2002). Theft, fraud, vandalism, sabotage, absenteeism, spreading rumors, aggression, illicit sexual relationship and harassment are examples of stress-induced deviant workplace behaviours. For instance, Bamfield (2002) in his study revealed that more than one-third of all retail losses was attributed to employee theft in 32 countries across Europe, Asia, Pacific, and North America. Similarly, Chappell and Martino (2006) calculated in their study that bullying (a form of deviant workplace behaviour) costs Australian employers between 6 to 13 billion Australian dollars each year. Harris and Ogbonna (2006) also found that the presence of deviant workplace behaviour in the United States of America produces organizational losses estimated to reach up to 200 billion dollars annually.

The effects of job stress imparts upon productivity and effectiveness of employees' performance just as psychological as well as biological impact could stretch beyond the workplace and nosedive into undesirable lifestyle habits like substance abuse which could lead to adverse health conditions. Unchecked stress and stressors at workplace can also cause psychological derangements and affect the quality of family life. Siu (2003) reports that in developed or industrialized countries, workplace stress has assumed an ever increasing problem for company workers and public executives, and it has led to greater health costs, a higher percentage of absenteeism and turnover, more accidents, and inefficient task performance.

Household/Family Stress

Parents, guardians and their children are also prone to a great deal of stress at home. The level of family peace and harmony is determined by the rate of stress management in the home. Unmanaged stressors have proved to be the cause of most family crisis. According to Amadi (2007), the sources of family stress can range from children up-bringing, finance, home location, death of a family member, lack/presence of house-help as well as presence of relatives who live with the household.

The training of children at home and in school is a major source of family stress to parents. Responsible parents realize that they owe their children the basic needs. These needs are feeding, clothing, education and exposure. The outside society looks up to parents for adequate training of their children and their success in their future endeavours. The optimal provision of all these depends on the tireless work of parents which in most situations result in stress. Similarly, as submitted by Amadi (2007), marriage comes with several commitments and aspirations from both persons involved. To sustain a viable marital destiny requires onerous obligations, duties, aspirations, meeting needs and facing challenges. In a bid to fulfill these responsibilities, conflicts, disagreements, hatred and suspicious arise between the couple and invariable place much stress on them. If such challenges are not properly handled, such marriage would break down.

Financial obligations of the family is also a major source of stress. All things being equal, parents, are expected to pay various bills to keep the family going. They are expected to pay electricity bills, water rate, gas bill and house rent. They would need to maintain and fuel their family car(s), pay children's school fees, contribute to community and religious programmes. In a situation of inadequacy of finance, problems can ensue and will lead to severe stress. The place of abode for the family also has significant connection with the level of burden family members pass through. Some homes are in exquisite and serene areas where basic social amenities are provided and activities are officially well regulated. On the other hand, households living in slums and ghettos and rural areas where they can't access electricity portable water, roads, hospitals, and good schools, are susceptible to unusual stress as they struggle to make ends meet. The death of a family breadwinner can also plunge a family to untold stress, which could also lead to trauma. When such deaths occur, the remaining members of the family face double tragedy of loss of a member and the threat of survival.

Stress Coping and Management Strategies

In as much as stress is common to humans and it is an inevitable fact of existence, if it is left unchecked, it can be disastrous to the health of the family as well as individual. In order to overcome stress conditions, employees adopt different coping strategies as reported by Santrock in Amadi (2007). People attend to or manage with their stress in two different ways namely problem focused coping and emotion focused coping. For instance, in problem-focused coping, effort is directed towards solving the problem that causes stress. A young school leaver whose source of stress is joblessness, who goes ahead to seek for employment or how he can be self-employed is simply applying the problem-focused coping.

The emotion-focused coping has to do with attending to the feelings or emotions of stress rather than the source (stressor) itself. For instance, a person engages in some forms of thoughtful processes with his/her cognitive faculty to console himself and to regain emotional balance in his/her stressful situation. On the other hand, if another person that is unemployed decides to stay at home and continues to console

himself that there is no job and economy is not favourable, believing that one day things will improve and he will get a job, he/she is simply practicing the emotion focused coping.

Other stress management strategies are controlling adrenalin arousal, meditation, relaxation, sleeping, counselling are also discussed hereunder:

➤ Controlling Adrenalin Arousal

Adrenalin is a hormone usually produced by the adrenal gland in the human body. The primary function of it is for the alertness and energizing of the body during the period of shock or trauma. Though the adrenalin plays this important function in the body, its production has a serious weakening impact on the body chemistry and brain by reducing their optimal functioning (Hart, 1995). It has been reported that this negative effect of the adrenalin gives way for several stress related illnesses, which in turn becomes another set of dangerous stressors.

➤ Meditation

Meditation connotes deep, quiet and solitary though activity with the use of the cognitive faculty. The body has an inbuilt defence mechanism and during the act of meditation the capacity of the human body to fight the stressful condition is released. Proverbs (4:23) reveals that when humans guard their heart and thoughts through meditation, they can overcome stress and riotous conditions.

➤ Relaxation

Santrock (2000) confirms that when the body is in a relaxed mood, the natural pain inhibition system within the body becomes empowered and effective and kills body pains. The brain nerves, muscles and various organs of the body need certain amount of relaxation every day. Amadi (2007) reveals that whereas there are drugs that could be used to treat psychosomatic illnesses, relaxation is considered as a better and more effective strategy.

Sleeping technique is also a form of relaxation process. Sleep is an antidote for the stress of everyday living. Good sleeping habit can prevent some diseases and help build up strong immune system as well as prevent some heart diseases. However, lack of it can contribute to the development of severe stress, distorts thinking and cause inefficiency at workplace.

➤ Seeking Counsellor's Help

One major responsibility of trained counselors and psychotherapists is management of stress. Counselling psychologists are professionally trained personnel equipped with knowledge of effective behavioural, cognitive, social and humanistic therapeutic procedures. They coach, guide and direct people who are undergoing personal, social, academic, vocational and behavioural problems on how to cope, manage or come out of such problems. Counsellors, in order words, through a systematic process of interaction, help you to help yourself in stressful conditions.

Educational Implications of Stress

So many academic problems and difficulties student encounter in school are mostly as a result of emotional instability which may arise from socio- economic status of parents, course overload broken homes social pathological patterns in family, personality disorders as well as certain socio-cultural underpinnings. Therefore, it becomes expedient to consider what could be done and by who, concerning the reduction or management of stress among students at all levels of education. School administrators must come to terms with the fact that the learners emotional and health dispositions and compositions have to be stable and balance before excellence can be achieved in academics. The learner also should be aware of the psychological, biological as well as the sociological dimensions of stress and the intrinsic and extrinsic stimuli or events that cause him severe stress. This awareness will not only help him in managing stress, but will also helps him to block the loop holes through which stressors manifest.

School administrators must also be acquainted with the dynamics of stress and emotional intelligence to be able to help the students adjust to their academic tasks without encountering severe stress. The services of a psychotherapist as well as Guidance Councillor should be provides in schools in order to forestall escalation of stressful conditions in the life of students.

Recommendation

In order to help cushion the effect of academic –induced stressors, students could:

- Manage time effectively and ensure early and timely preparation for examinations
- Associate with disciplined and intelligent friends who will serve as motivators and emotional stabilizers.
- Endeavour to seek for social support from the School Guidance Councillor and psychotherapist always.
- Develop effective study/reading culture that suits his/her individual capacity and biological make-up.

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