CONCEPTS OF STRESS

• Latin word “strictus” – hardship, adversity or affliction (estress in Old French & Stresse in Middle English
• Is a dynamic & multidimensional construct
• Some considered stress as an engineering concept the amount of external pressure (ie weight, force) acting upon a structured material.
• In Euro-American psychology, stress = “external and/or internal demands that are appraised as taxing or exceeding the resources of the person” – Lazarus & Folkman (1984)
• Many factors lead to variations in stress definitions i.e. culture

Concepts of Stress

1. Response-Based concept of stress
   – Psychological & biological context
   – When organism is stressed it responds either by fighting or running away (flight or flight concept by Walter Cannon)
   – GAS Model by Hans Selye – stress as “a nonspecific response of the body to any demand made upon it (response-based; physiological orientation)
   – Eustress vs Distress

Causes and symptoms

• Stress is the cause of general adaptation syndrome and it can manifest as fatigue, irritability, difficulty concentrating, and difficulty sleeping.
• People may also experience other symptoms that are signs of stress.
• People experiencing unusual symptoms, such as hair loss, without another medical explanation might consider stress as the cause.
General Adaptation Syndrome (1936)

- Hans Selye was a young medical doctor who noticed that a lot of people were experiencing similar types of symptoms but did not have any physical cause for the problems.
- The problems were caused by stress. He later determined that the body has a natural, adaptive response to stress that is composed of three stages: alarm, resistance, exhaustion.
- When a person gets to the exhaustion stage, they may experience severe physical problems.

- Hans Selye found that a complex pattern of physiological responses followed a certain demands (on lab animals)
- The responses were similar regardless of the source of demand “the nonspecific response to demand”
- Stress = the nonspecific response of body to any demand

- Selye developed the General Adaptation Syndrome (GAS); 3 phases = alarm, resistance, exhaustion
- 3 sequential phases; if the source of stress sounds the alarm to initiate the GAS & the stress is not removed / coped with, the body progresses to resistance & exhaustion
- Recovery is an alternative outcome to exhaustion if stress is removed or coped with effectively
GENERAL ADAPTATION SYNDROME

• Definition
General adaptation syndrome describes the body’s short-term and long-term reaction to stress.
  • http://www.holistic-mind.com/general_adaptation_syndrome.htm

• According to Selye, all living organism are equipped with a vital force = adaptation energy (for coping with stressors)
• Fight or flight concept = the state of physiological readiness for action created by the body during the alarm phase (confront or avoid)
• If organism couldn’t fight or flee, the weak links [susceptible body parts or systems that breakdown under the wear & tear of chronic stressor)] become malfunction, broke down, exhausted, die)
Stage 1: Alarm reaction

- The first stage of the general adaptation stage, the alarm reaction, is the immediate reaction to a stressor.
- In the initial phase of stress, humans exhibit a "fight or flight" response, which causes one to be ready for physical activity.
- However, this initial response can also decrease the effectiveness of the immune system, making persons more susceptible to illness during this phase.

The fight or flight response

- Also called the "acute stress response", was first described by Walter Cannon in the 1920s as a theory that animals react to threats with a general discharge of the sympathetic nervous system.
- The response was later recognized as the first stage of a general adaptation syndrome that regulates stress responses among vertebrates and other organisms.

Alarm – Fight Or Flight

- The body reacts to acute stress by increasing the production of hormones by the medullar part of the adrenal gland in order to mobilise the physical energy needed to combat the stress.
- When the stress is extremely acute the body's alarm reaction takes the form of inflammation.
- If the reaction is strong enough to overcome and remove the stress, the organism regains its balance and returns to its normal homeostatic condition.
Stage 2: Stage of Resistance

- Stage 2 might also be named the stage of adaptation, instead of the stage of resistance.
- During this phase, if the stress continues, the body adapts to the stressors it is exposed to. Changes at many levels take place in order to reduce the effect of the stressor.
- i.e., if the stressor is starvation (possibly due to anorexia), the person might experience a reduced desire for physical activity to conserve energy, and the absorption of nutrients from food might be maximized.

Adaptation or resistance

- If the stress is not overcome, the second phase commences.
- The organism tries to deal with the stress by producing and activating corticosteroid hormones in the adrenal gland that work as anti-inflammatory agents.
- This mechanism creates hypertrophy of the glands.

- At this stage, an increase in the level of potassium takes place, recreating a normal ratio between potassium and sodium
- Nevertheless this process of adaptation results in a consumption of the organism’s energy reserves.
- The second phase can continue for a long period of time, gradually weakening the organism.
Stage 3: Stage of Exhaustion

- At this stage, the stress has continued for some time.
- The body's resistance to the stress may gradually be reduced, or may collapse quickly.
- Generally, this means the immune system, and the body's ability to resist disease, may be almost totally eliminated.

Patients who experience long-term stress may succumb to heart attacks or severe infection due to their reduced immunity.

- i.e. A person with a stressful job may experience long-term stress that might lead to high blood pressure and an eventual heart attack.

This is the G.A.S. phase where depletion is so high that the patient loses the ability to adapt to the stress.

- It is the phase when medical intervention is requested for a number of symptoms, which are sometimes difficult to define.
- The organism has exhausted its energy reserves trying to contain the stress and starts to self-destruct.
• At this stage, a significant decrease in the levels of sodium relative to potassium takes place.
• The typical symptom of the exhaustion phase is chronic fatigue which is probably the most widespread symptom.

WHAT HAPPEN IF GAS CONTINUES?
• If the response to stress is positive such as productive physical action, then the stress products i.e. the increased chemical in the body are used up – OK.
• If the stress is not resolved and the stress products are not used up for its intended purpose, then our body continues to be stimulated. Then over time, our body adapts by developing ‘diseases of adaptation’ or stress related diseases.

GAS: PERFORMANCE OVER TIME
• Physical damage comes more from prolonged stress than from sudden of fear
• Second stage of GAS is important for adaptation
• Chronic state of stress – physical or psychological has damaging effect
• Psychosomatic disorder resulting from prolonged stress.
• For many years, people have referred to the Flight or Fight response as the stress response but Flight/Fight is a one-off reaction to a perceived challenge or pressure and is not necessarily bad for the individual. It is good to be alerted to possible threats and to prepare to take avoiding action.

However, continually being in this state means that the body chemicals associated with Flight/Fight are then constantly being stimulated and the result is ill health of one type or another. **This is stress.**

2. Event-Based concept of stress
   - Thomas Holmes & Richard Rahe (1967) focused on stressful events & constructed Social Readjustment Rating Scale (SRRS).
   - Stress is assessed by applying weight life change units to events in a person’s life. The weights are based upon the estimated amount of change or readjustment required for each event on the part of the person experiencing it.
   - Stressor was defined as life events or changes that produce or have the potential to produce changes within the individuals, the family or the surroundings.

| Social Readjustment Rating Scale SRRS  (Holmes & Rahe) (selected events) |
|-----------------------------|---------------------------|---|
| Death of spouse             | Change in health of family member | 100 |
| Divorce                     | Pregnancy                 | 73  |
| Marital separation          | Change in financial state  | 65  |
| Jail term                   | Change in work condition   | 63  |
| Death of close family member| Mortgage more than RM 10K  | 63  |
| Marriage                    | Trouble with in-laws       | 50  |
| Fired at work               | Change in residence        | 47  |
| Retirement                  | Vacation                   | 45  |
• Many later work challenged the above view points (response/event based).
• According to Genest & Genest, (1987), Stress reactions differ as a function of:
  1. Neurophysiological level of response
  2. Qualities of the stressor
  3. Differences among individuals

3. Interactional Model of Stress
• Perception of the stressor by the person is the most important factor
• Lazarus introduced the stress appraisal stages (primary, secondary, reappraisal)
• Primary: based on previous experiences, knowledge about the stressor and the event determines the degree of stress. If the stressor is perceived to be threatening (or has been harmful before), then the secondary appraisal takes place
• Secondary appraisal – if the stressor is perceived as harmless, stress does not develop. Here the person ascertains how much control she/he has over the situation (identify means of control == coping), some books labelled this as coping

• During the reappraisal stage, the person evaluates whether the stressor has been effectively negated or not.
• Factors influencing the appraisals are varied
• Interactional model highlights the importance of cognitive function (perception)
STRESS as stimulus

- Daily demands @ life events (school, work, family, relationships etc) \( \rightarrow \) pressure; “under stress”
- Stressors that are not handled well can affect physical health
- Happy vs sad life events (changing experiences) demand the body to readjust \( \rightarrow \) homeostasis

STRESS as Transaction

- Albert T. W. Simeons suggested that modern people’s perceptions of stressors are similar to those of their ancestors
- Perceived the situation as threatening & mobilize the body to fight or flee
- Stressors = symbolic threats to the ego (not the physical well-being)
A part of the brain, **diencephalon** (consists of thalamus & hypothalamus) is responsible for interpreting incoming sensory stimuli as threatening or not.

Stress is defined as a transaction (perception of a stimulus as threatening & the subsequent triggering of an adaptive stress response ➔ (individual, environment, potential stressor).

Simeons idea differs from Selye who never considered the role of perceptions in his idea of nonspecific response.

Many stress researchers believed that there is no such thing as universal stressor for everyone, & people respond to the life events differently, depending upon their perceptions.