



SWB C2

Chapter 2: Mental preparedness and Psychological awareness

Q1) What is action bias, mental preparedness, psychological awareness and arousal?

Action bias is the psychological phenomenon where people tend to favor action over inaction, even when there is no indication that doing so would point towards a better result. It is an automatic response, similar to a reflex or an impulse and is not based on rational thinking

Mental readiness is knowing with as much confidence as possible that the mind is prepared to meet the challenges faced. Mental preparedness is a way of getting your mind ready to cope with stresses in a survival situation.

Psychological awareness: is the experience of own personality or individuality of an individual. It describes how an individual consciously understands their character, feelings, and desires.

Arousal - A psychophysiological state of being awake or reactive to stimuli (i.e., general alertness and readiness to respond) which is the underpinning of stress, anxiety, pressure, and even motivation.

Q3) Functions of different parts of brain

- 1) **Hippocampus:** Regulates memory and emotions
- 2) **Prefrontal Cortex:** Thinking, logic, what to do, evaluation
- 3) **Amygdala:** Turns on fight or flight, stores memories of events

Q4) What are the branches of autonomic nervous system?

Heart Rate Variability (HRV) is simply a measure of the variation in time between each heartbeat. This variation is controlled by a primitive part of the nervous system called the autonomic nervous system (ANS). The autonomic nervous system

controls specific body processes, such as circulation of blood, digestion, breathing, urination, heartbeat, etc. The autonomic nervous system is named so, because it works autonomously, i.e., without a person's conscious effort.

The branches of autonomic nervous system as measured by HRV are

1. Sympathetic Nervous System:

- a. Controls stimulation of “fight-or-flight” stress response. This system's activity increases when you're stressed, in danger or physically active. It does this by regulating the heart rate, rate of respiration, pupillary response and muscles tense up.
- b. Needed for short-term survival
- c. Located near the thoracic and lumbar regions in the spinal cord

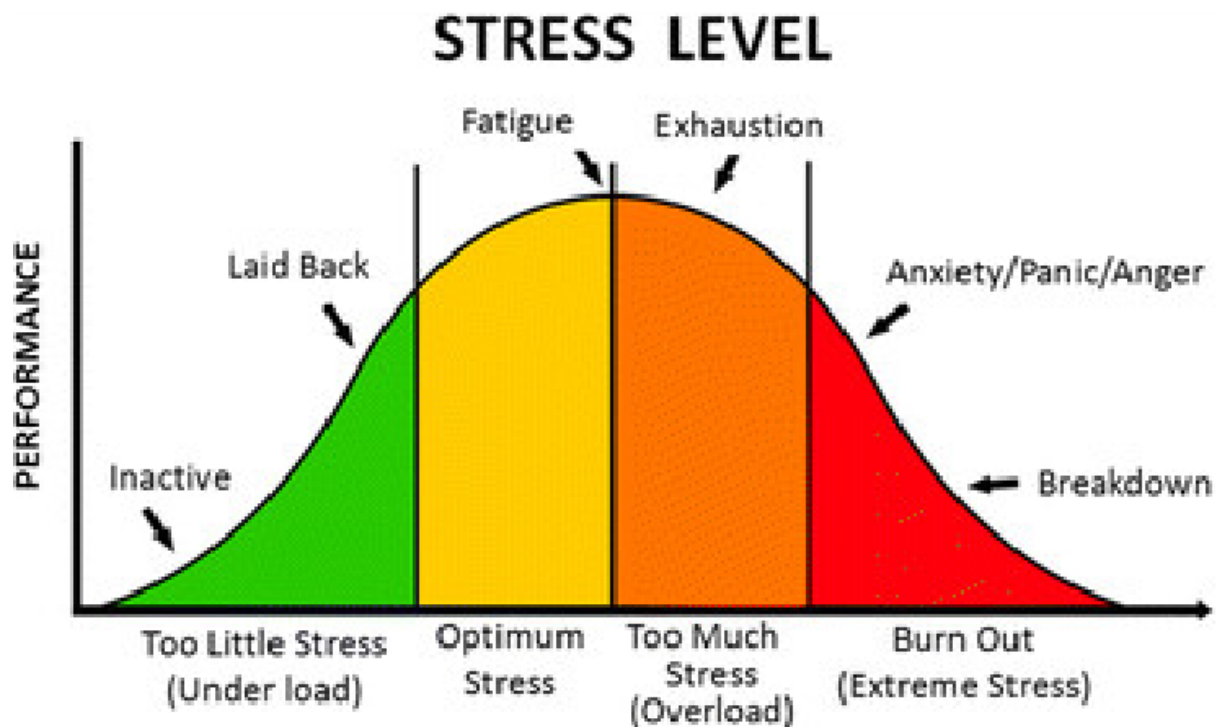
2. Parasympathetic Nervous System:

- a. Controls stimulation of “rest-and-digest” and “feed and breed” activities essential for recovery. The parasympathetic system aims to bring the body to a state of calm. It does so by reducing heartbeat, relaxing muscles, pupil contracts.
- b. Needed for long term survival
- c. Located in between the spinal cord and the medulla.

Q5) The Concept of Stress

As proposed by Walter Canon, the stress responses (fight or flight) was a fight or flight response marked by the outpouring of epinephrine and norepinephrine from inner adrenal glands (medulla) increasing heart and respiration rates and dulling pain.

Q6) Yerkes Dodson Law- Curvilinear Relationship btw stress and performance



STRESS AND PERFORMANCE - Stress is not necessarily something bad, it all depends on how you take it - Hans Selye

- A classic experiment conducted in 1908 by Robert M. Yerkes a pioneer of American psychology, and his colleague John D. Dodson, is highly relevant to the question of how stress influences performance
- They investigated **“the relation of strength of stimulus to rapidity of habit formation,”** (Journal of Comparative Neurology and Psychology)
- They discovered that mild electrical shocks could effectively be used to cause mice to acquire the habit of completing a maze. If the electrical shocks were too mild or too strong, however, the mice’s performance in the maze decreased. From this they developed what is now called the Yerkes- Dodson law which shows a curvilinear relationship between stress and performance

Q7) What are different types of stress?

There are broadly two types of stress

1. **Acute Stress:** An acute stress reaction occurs when a person experiences certain symptoms after a particularly stressful event. The word 'acute' means the

symptoms develop quickly but do not last long. The events are usually very severe and an acute stress reaction typically occurs after an unexpected life crisis. **Symptoms of extended over arousal:** Persistent tension headaches, Migraines, Hypertension, Chest pain, Digestion problems, Resistant to change

- a. **Episodic Stress:** When acute stress happens frequently, it's called episodic acute stress
It displays prolonged effects of acute stress, can have negative health effects.
 - b. Personality is an important factor for developing acute stress.
2. **Chronic Stress:** A consistent sense of feeling pressured and overwhelmed over a long period of time. Grinding stress that wears people away day after day year after year. The events include Warfare, Financial crisis, Traumatic experiences, Chronic illnesses, Dysfunctional families. **Symptoms** include aches and pains, insomnia or weakness, less socialization, unfocused thinking.
- a. Creates **LEARNED HELPLESSNESS:** Learned helplessness is the behavior exhibited by a subject after enduring repeated aversive/stressful stimuli beyond their control.
 - b. Dealing with chronic stress increases psychosomatic problems.

Q8) What are the common signs of stress?

1. **Physical signs**
 - a. Chronic headache
 - b. Dry mouth
 - c. Difficulty breathing
 - d. Pounding heart
 - e. Stomach-ache
2. **Psychological signs**
 - a. Sudden irritability
 - b. Problem in concentrating
 - c. Difficulty sleeping
 - d. Narrowed perception
 - e. Frequent feelings of fatigue

Q9) What are effects of stress on performance?

1. Stress affects appetite and digestion
2. Stress affects cognition

Q10) Stress and its physiology

The brain reacts to stress in a series of neural and chemical reactions that are meant for physical survival. Stress caused by

1. **biological agents** – viruses
2. **environment** – temperature
3. **psychological agents** – threat to self esteem, loss of loved one resulting in loneliness, social isolation etc

Q11) What are the Physiological Systems Involved in the Stress Response?

The 3 physiological systems involved in stress response are nervous, endocrine and immune system. Optimally, interaction of these systems maintains homeostasis and wellness.

1. In state of a stressful event, the sense organs sends the signal to **amygdala** which interprets the sound and image and then sends a distress signal to **hypothalamus**.
2. The hypothalamus releases a hormone called the **Cortico-trophin Hormone (CRH)**
3. CRH signals the **Pituitary Gland** to secrete the **Adreno Cortico Tropic Hormone (ACTH)** into the blood stream
4. ACTH travels down to the **Adrenal glands** where it prompts the release of **Gluco-corti-coids** from the **Adrenal Cortex**
5. One of these Gluco-corti-coids is **Cortisol** which plays an important role in stress response
6. With increased cortisol level → **Epinephrine and Norepinephrine** (hormones) secreted from Adrenal Medulla
7. As epinephrine circulates through the body, it brings on number of physiological changes:

- a. The heart beats faster than normal pushing blood to the muscles, heart, and other vital organs
 - b. Pulse rate and blood pressure go up.
 - c. The person undergoing these changes also starts to breathe more rapidly
 - d. Small airways in the lungs open wide - the lungs can take in as much oxygen as possible with each breath.
 - e. Extra oxygen is sent to the brain, increasing alertness
 - f. Thus, Sight, hearing, and other senses become sharper
8. The release of cortisol causes number of changes that helps the body deal with stress
Eg: Helps body mobilise energy like glucose so that body has enough energy to cope with prolonged stress
 9. When the threat passes, cortisol levels fall
 10. The parasympathetic nervous system — the "brake" — then dampens the stress response

Q13) What is the function of HPA Axis?

1. The **Hypothalamic Pituitary Adrenal Axis** is best known for its role in body's natural reaction to stress
2. HPA axis includes a group of hormone secreting glands from the NERVOUS and ENDOCRINE SYSTEM
3. This network consists of the Hypothalamus, the Pituitary gland and the Adrenal glands

Q13) Why do individuals behave differently during stress?

Stress depends on how an individual perceives a situation and perception of the oneself's ability to cope with the situation. The individual's judgment that a stressful situation exists, initiates a stress response. Without this appraisal there is no stress in the person's psychological schema

Individual differences

1. **Cognitive reaction to a situation** - Determined by appraisal of the nature, importance and implications of the event, and by your ability to effectively

manage or cope with the event

2. **Emotional responses to a situation** - Determined by appraisal of situation and coping abilities

Ex: "I can handle this," – planning ways to handle the situation

"This is terrible. I'm going crazy" - quitting, getting more anxious

Importance of knowing physiology of stress:

1. If one understands the physiology of stress, then one can begin to use this knowledge to augment one's own health and well-being through different stress management techniques
2. It is important to know what happens to our body during a stressful situation.

Q14) What are factors of personality related to stress?

There are 4 factors of personality related to stress

1. **Locus of control** describes the degree to which individuals perceive that outcomes result from their own behaviors, or from forces that are external to themselves. Internal locus of control refers to the belief that outcomes are within your control and determined by one's hard work, decisions. External Locus of control refers to the belief that outcomes are beyond one's control and are determined by fate or independent of one's hardwork and decision making.
2. **Self esteem** is confidence in one's own worth or abilities. Self-esteem encompasses beliefs about oneself as well as emotional states, such as triumph, despair, pride, and shame.
3. Personality Type
4. Hardiness

Q15) What are the different personality types?

There are 4 types of personalities

1. **Type A:** These people have a sense of time urgency and hostility - a feeling that there is not enough time to do all the things that we believe should be done or that we wish to do.
Symptoms include:
 - a. **Rapid movements:** The afflicted person usually walks, talks or eats fast
 - b. **Impatience:** There is a feeling that the rate at which most events take place is too slow

Anguish at waiting in line or waiting to be seated in a restaurant. Avoids repetitive tasks

- c. **Tension:** finds it difficult to sit and do nothing. Feels guilty when relaxing. He often has a characteristic facial tautness expressing tension and anxiety.
 - d. **Restlessness:** knee jiggling, rapid tapping of the fingers, head nodding, rapid eyebrow lifting while speaking, sucking in air while speaking, tongue-to-front-teeth clicking during conversation, or tuneless humming
 - e. **Preoccupation:** Inattentive to others. Unable to detect mental and physical fatigue while engaged in a task. Fails to observe seemingly unimportant unrelated things
 - f. **Hostility** – A predisposition to evaluate people or events negatively, often in a suspicious, distrustful, cynical, and paranoid fashion
 - g. There is a **generalized aggression** or **excessive competitive drive**
2. **Type B:** People with Type B personality tend to be more **tolerant** of others, are more **relaxed** than Type A individuals, more **reflective**, experience **lower levels of anxiety** and display higher level of **imagination** and **creativity**
3. **Type C:** Has difficulty expressing emotion and tends to suppress or inhibit emotions, particularly negative ones such as anger.
- a. Such individuals also display 'pathological niceness', conflict avoidance, high social desirability, over-compliance and over-patience. While there's no clear-cut evidence that these personality characteristics can actually cause cancer, they influence the progression of cancer and, hence, the survival time of cancer patients
4. **Type D:** People have the joint tendency to experience negative emotions and to inhibit these emotions while avoiding social contacts with others.
- a. Experience increased negative emotions across time and situations and tend not to share these emotions with others, because of fear of rejection or disapproval
 - b. Gloomy, anxious, and socially inept worrier
 - c. Have fewer personal ties with other people and tend to feel less comfortable with strangers
 - d. Has a high risk of cardiac disorders

Q17) What is Hardiness?

Hardiness moderates the stress–illness relationship by reducing cognitive appraisals of threat, and reducing the use of regressive coping

Hardiness comprises the three Cs:

1. **COMMITMENT** - Involve oneself in whatever one is doing to approach life with a sense of curiosity and meaningfulness. The Commitment attitude led them to strive to be involved in ongoing events, rather than feeling isolated
2. **CONTROL** - Related to Rotter's (1966) locus of control. Individual differences in people's beliefs regarding what controls events in their everyday lives. The Control attitude led them to struggle and try to influence outcomes, rather than lapse into passivity and powerlessness
3. **CHALLENGE** - A tendency to believe that change is normal in Life and anticipate change as an incentive to personal growth and development rather than a threat to security. The Challenge attitude led them to view stress changes, whether positive or negative, as for new learning

Q18) What are symptoms of stress?

1. Bodily symptoms
2. Feeling States
3. Cognitive States
4. Motor Symptoms (muscles involved)

Q19) How to deal with stress?

Stress Mapping includes:

1. Sensitize yourself to potential stressors in the environment
2. Keep a stress journal, a day-by-day account of when and where the signs of stress appear
3. Personal stress analysis - a method by which you systematically evaluate and interpret the information in the journal

4. Knowing your personal stressors and how you react to them provides a tremendous opportunity for you to alter your behavior, coping more efficiently or perhaps avoiding stressful situations altogether