LECTURE 18
PSYC 200
March 21

HEALTH AND STRESS

The Mind-Body Connection

- Behavioural medicine combines info from fields of medicine, psychology, sociology
  - uses all of this info not only in the diagnosis/treatment but also to increase life expectancy and the quality of life
- Health psychology is the psychological (behavioural) aspect of behavioural medicine
  - emphasizes that physical health is tied to mental health
  - heart disease, cancer, stroke, chronic lung disease --> 4 effects of prolonged exposure to stress

Stress and its Impact on Health

- Stress: response to an event
  - psychological and physiological response to a challenging or threatening event
- Stressors: event that causes the response
  - the event that a person **perceives** as challenging or threatening, stress is all about perception
  - examples: pollution, deadlines, heat, overload, family relationships, finances, death, illness
- **Stress types**
  - Acute stress
    - a temporary state of stress that varies in intensity
    - linked to a specific event like the stress you feel before a test
  - Chronic stress
    - long-lasting state of arousal
    - not associated with a particular event
    - person feels that they don't have the capacity/resources to deal with stressful events
      - environmental psychology
  - Eustress
    - it is a positive type of stress that helps a person perform a task or achieve a goal
    - this is an example of acute stress
    - example: stress before a test can be good because it can help you focus
  - Distress
    - a negative type of stress where we perceive challenges as obstacles we cannot overcome
    - associated with chronic stress, occurs when stress is prolonged
- **The stress response system**
  - Fight-or-flight response (Cannon, 1915)
    - physiological response to a stressor, what triggers this response is the **amygdala**
    - **amygdala** prepares the body for action, either you deal with the stressor or you run away (fight or flight)
    - **amygdala** activates the **hypothalamus** which makes more energy available to the body
    - no problem with this when stress is short-term, when this system is active over a period of long time, it will disrupt the body, the culprit is cortisol levels
    - Stress raises cortisol level, prolonged exposure to stress and elevated levels of cortisol kills brain cells
    - Cortisol will make it harder for neurons to use oxygen, it reduces a neuron's ability to efficiently take in oxygen and use it, ultimately killing them (in the area of the **hippocampus**), seen in older individuals
  - General adaptation syndrome (GAS)
    - proposed by Hans Selye
    - 3 phases of our response to a stressful event
      - phase 1: alarm reaction (mobilize resources), activates sympathetic nervous system
      - phase 2: resistance, cortisol is released, we are ready to deal with the stressor
      - phase 3: exhaustion (reserves depleted), occurs when stressor is active for a long time, become more vulnerable to illnesses, phase will lead to rapid aging
      - the body's resistance to stress can only last so long before exhaustion sets in
  - Alternative stress responses
    - Withdrawal: come across a stressor and just withdraw from the situation
      - example: your friend passes away, instead of seeking comfort, you shut yourself out from the world
      - not a good way of dealing with problems, it is maladaptive because after a few weeks of withdrawal, you still haven't found a solution to dealing with the stressor, haven't reached closure

        - Tend and befriend theory: female response to stress, related to fight-or-flight response in men
- **Stressful life events**
    - Catastrophes
        - these are unpredictable, large-scale events that can lead to significant levels of problematic stress
        - PTSD: chronic stress, persistent stress response, you keep producing this stress response by thinking about the stress in your mind
    - Burnout
        - this is a state of physical, emotional and mental exhaustion created by long-term involvement in an emotionally demanding situation
    - Significant life changes
    - Daily hassles
        - Minor nuisances that, when combined with other small problems, can create a stressful environment
- **Stress and the heart**
    - Coronary heart disease: cholesterol accumulation in blood because of longterm exposure to stress
    - Heart disease and personality
        - Type A
            - Competitive, impatient, verbally aggressive, easily angered
        - Type B
            - Easygoing, relaxed
- **Stress and the immune system**
    - Lymphocytes: white blood cell in immune cells
        - B cells: these are formed in the marrow of bones, responsible for fighting bacterial infections
        - T cells: these are formed in your lymphatic tissue and in the thymus organ located in your chest, responsible for fighting cancer cells/viruses
            - viral cell is recognized by body as foreign, body sends out signal to T cells to come and destroy the viral cell, however cortisol (stress) inhibits the release of T cells, allowing the virus to grow
    - Stress and HIV/AIDS
    - Stress and cancer: it doesn't cause cancer because during WW2, thousands of Jews were held in concentration camps and they experienced crazy amounts of stress, they did not contract cancer however
- **Stress and somatoform disorders:** <u>umbrella term for a group of disorders</u>
    - Psychophysical ("mind-body") illnesses: not a somatoform disorder
        - have physical explanations and are made worse by the presence of psychological stress
        - example: suffering from high blood pressure, when stressed the blood pressure increases, having high blood pressure has a physical cause but can be made worse by psychological stress
    - Hypochondriasis
        - you stress about developing a serious illness
        - example: you see a pimple on your neck and you freak out because you think it is skin cancer
    - Somatisation disorder
        - the presence of multiple physical complaints all occurring simultaneously, each with no identifiable physical explanation
        - example: you wake up and you have a pimple on your neck and your vision is blurry and your hands are sweatier than normal, all of a sudden you say to yourself that you have a brain tumour, main difference between this and hypochondriasis is that hypochondriasis exaggerates a pimple whereas somatisation disorder doesn't exaggerate a pimple but deals with numerous anomalies
    - Conversion disorder
        - a sudden, temporary loss of a sensory or motor function
        - example: you wake up one day and you are blind, without any clear or visible distresses, brought on by stressful events
- Seeking treatment: there is one benefit for people who suffer from this stuff, you get to see your doctor a lot faster than other people, chances of curing the illness increases

Improving Health

- **Coping strategies**: helps you reduce or minimize the effects of a stress
    - Cognitive approach
    - Behavioural approach
    - Emotional approach
    - Cognitive appraisal: we have time to think and evaluate the stressful event, it is a 2-step process
        - Primary appraisal: initial evaluation of the seriousness of the stressor, how serious is it?
        - Secondary appraisal: need to determine if we have the resources to deal with the stressor

    - Rational coping: facing a stressor directly and working to overcome it, best/adaptive way to deal with a stressor
    - Repressive coping: ignore the stressor, ignore the "elephant in the room" in hopes that it will go away on its own
    - Reframing: find a way to make the stressor seem insignificant
        - example: "i only need 20% on my final exam to pass the course"
    - Anticipatory coping: forsee stressors before they occur or before they get too serious
    - Problem-focused coping: attempting to reduce stress directly, example of rational coping
        - can be done in two ways: eliminate the source of stress or change the way you behave in stressful situations
        - example: tough/stressful project in school, can be dealt with by: asking professor for help (trying to eliminate the source of stress) or by working more on the project in order to get it done faster (changing behaviour), students will choose situation in which they have the most control
    - Emotion-focused coping: alleviate stress in 2 ways: try to avoid the stressor or try to calm your stress-related emotions, similar to withdrawal, repressive coping
        - example: you have a problem with your neighbour, you can avoid them completely and you can spend more time with friends or time away from the house and the neighbour in question
    - Stress inoculation: this is what is done in therapy, involve the three processes above
        - step 1 (conceptualization): evaluate a stressor
        - step 2 (skills acquisition and rehearsal): given the tools to cope with the stressor
        - step 3 (application and follow-through): you are gradually exposed to more and more stressful events so that you can practice your new coping skills
- **Factors that reduce stress**, stress is a loss of perceived control over a situation
    - Perceived control: the more control you have, the lower your stress response
        - example: socioeconomic status and longevity of life, the richer you are the more perceived control you have, greater perceived control will lower your risk of stress, lower stress levels lead to lower risk of illnesses
    - Explanatory style: refers to how a person explains events to themselves
        - example: if you are optimistic you will see everything in a positive light, therefore you have more perceived control, leading to lower stress levels and lower risk of illnesses
    - Social support: sharing stress with others in order to reduce stress as well as promote health and happiness, isn't limited to human beings, animals are important in improving an individual's mental health as well
- **Stress management**
    - Exercise: best way of dealing with stress
        - exercise reduces stress, anxious symptoms, depression symptoms
        - brain releases mood-enhancing chemicals like **serotonin**, **adrenaline**, **endorphins**
        - project idea: the rate of childhood depression is increasing, maybe correlated to their physical activity levels??
    - Biofeedback
        - System for measuring and reporting physiological states
    - Relaxation and meditation
        - Relaxation therapy: a therapeutic technique that involves alternately tensing and relaxing muscles in the body and practicing breathing exercises in order to relieve tension
            - you want to turn off the sympathetic nervous system and turn on the parasympathetic nervous system in order to find yourself in a relaxed state
    - Relaxation response