

*HSS1101D: Determinants of Health*

**Biological and Psychological  
Determinants of Health:  
Overview of biological systems, the  
mind-body connection, and the role  
of genetics and heredity**

**February 1, 2012**

**\*NOTE:** Lecture developed by Elina Farmanova-Haynes. Information has also been taken/modified from lectures of Prof Thy Dinh and the text *Health The Basics* by Donatelle & Thompson (2011). References for information taken from other sources is indicated at the bottom of or within the slides.

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# **Lecture Outline**

- **Biological determinants of health**
- **Genetic factors**
- **Psychosocial health**
- **Factors influencing psychosocial health**
- **Mind-body connection**
- **Mental illness**
- **Sex issues in psychosocial health**
- **Suicide: giving up on life...**
- **Seeking professional help**



## Review

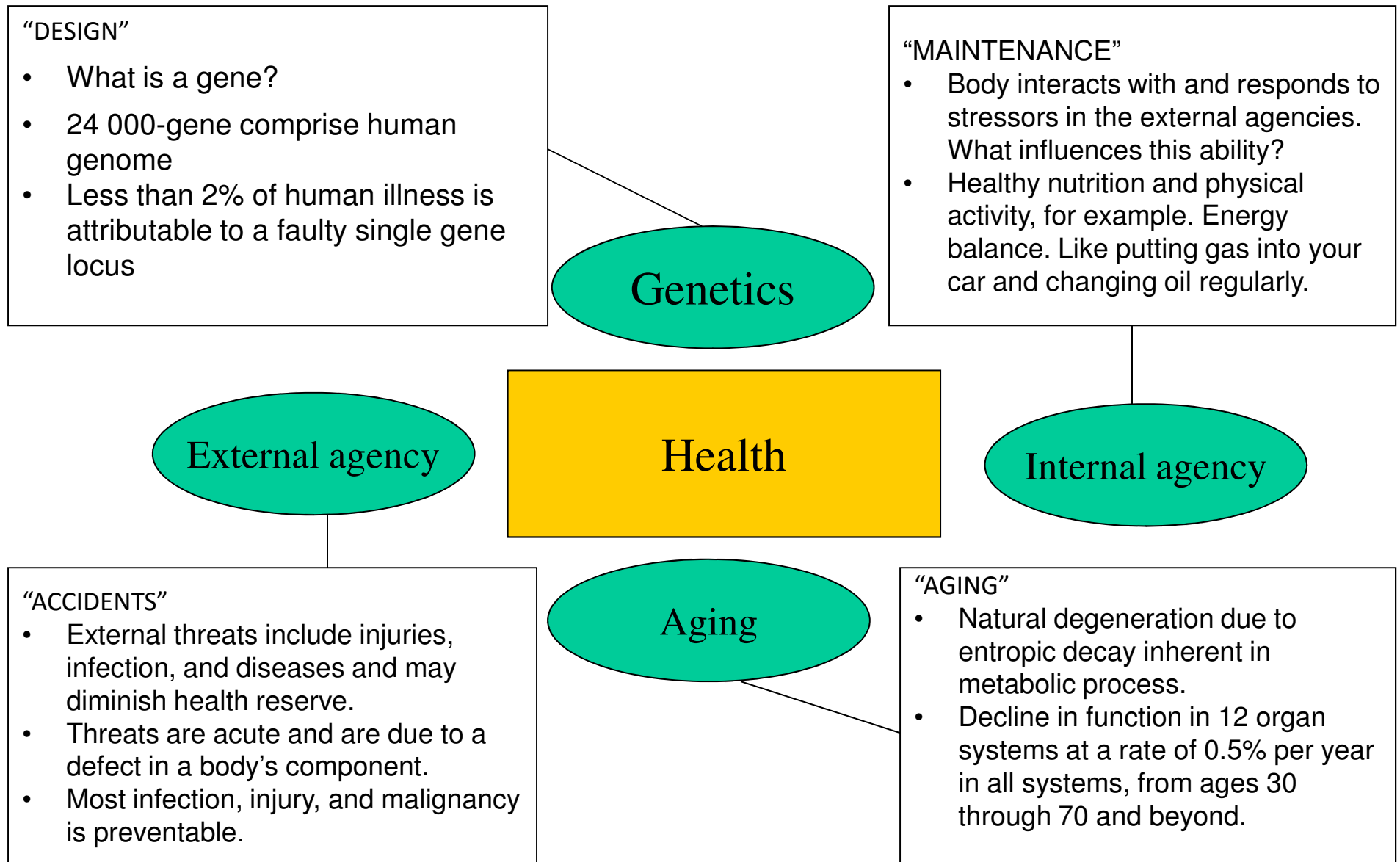


- Defining health and its determinants
  - *resource vs. state*
- All determinants have biologic mediator variables in order to affect the organism to produce health outcomes
- Biological determinants of health are proximal.

# Biological determinants of health

- Factors relating to the composition and processes of the human body that affect health outcomes:
  - *Endogenous biological determinants*
    - Genetic heritage
    - DNA composition
  - *Exogenous biological determinants*
    - Microorganisms
- Factors that affect the human health:
  - Genetics (design)
  - External agency (accidents)
  - Internal agency (maintenance)
  - Aging (natural degeneration)





# Summary: Genetics as a determinant of health

- We are genetically unique by small differences in about 0.1% of genetic material
- Variations in genetic material can occur by chance
- Some variations may create an advantage others may be detrimental
- Mutations (gene alterations) can be passed on to future generations if they occur in sex cells
- Many mutations are repaired through cell molecular repair mechanisms

# Psychosocial Health

... is a complex interaction of **mental**, **emotional**, **social**, and **spiritual** health.

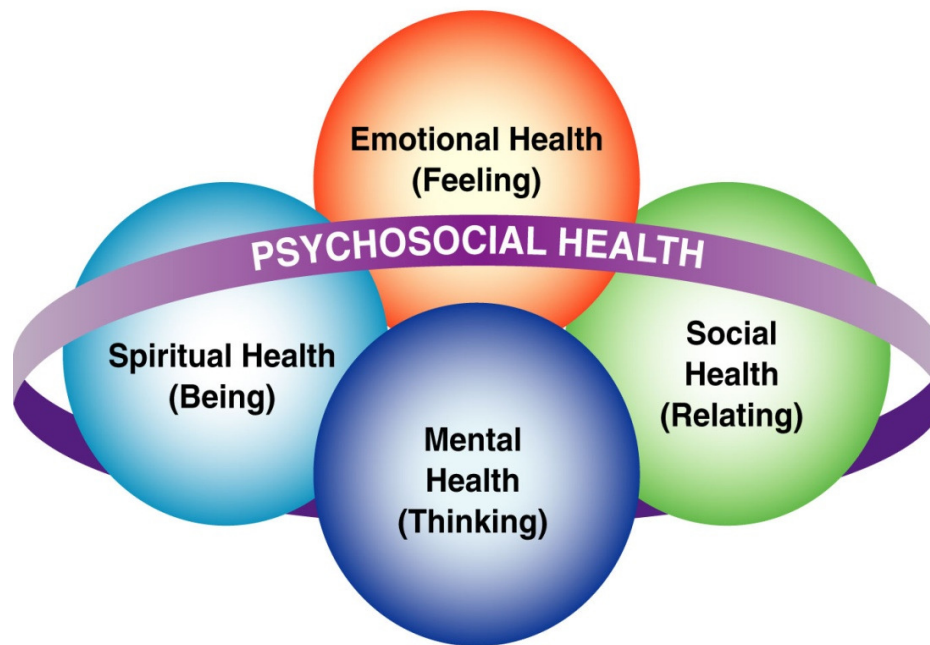


Figure 2.1: Psychosocial Health. Psychosocial health is a complex interaction of mental, emotional, social, and spiritual health.

# Psychosocial Health

**Mental health:** rational (*the thinking you*)

- The ability to:
  - Perceive realistically
  - Use reasoning in problem solving
  - Interpret accurately
  - React appropriately
  
- Irrational thinking may indicate poor mental health



# Psychosocial Health



**Emotional Health:** subjective (*the feeling you*)

- Based on **emotions** described as the interplay of physiological arousal, feelings, cognitive processes, and behavioural reactions.
- Can you think of examples of emotions?
- Richard Lazarus notes 4 basic types of emotions:
  - Emotions from harm, loss, threat
  - Emotions from benefits
  - Borderline emotions (hope/compassion)
  - Complex emotion (grief/disappointment)

# Psychosocial Health



## Emotional Health (cont'd)

- Ability to:
  - respond appropriately to upsetting or uplifting events
  - not let one's feelings overpower one's self
- Outcomes of poor emotional health include poor social health and academic performance
- Can you think of examples of good and poor emotional health?

# Psychosocial Health

**Social health:** Interactions with others



- The ability to:
  - interact with others individually or in groups
  - use and provide social support
  - adapt to a variety of social situations
- Importance of social networking for neurological fitness (Rush Memory and Aging project)
- Social bonds
- Social supports
- Prejudices may indicate poor social health

# Psychosocial Health

**Spiritual health:** search for meaning (*an inner quest for well-being*)

Four main themes of spirituality:

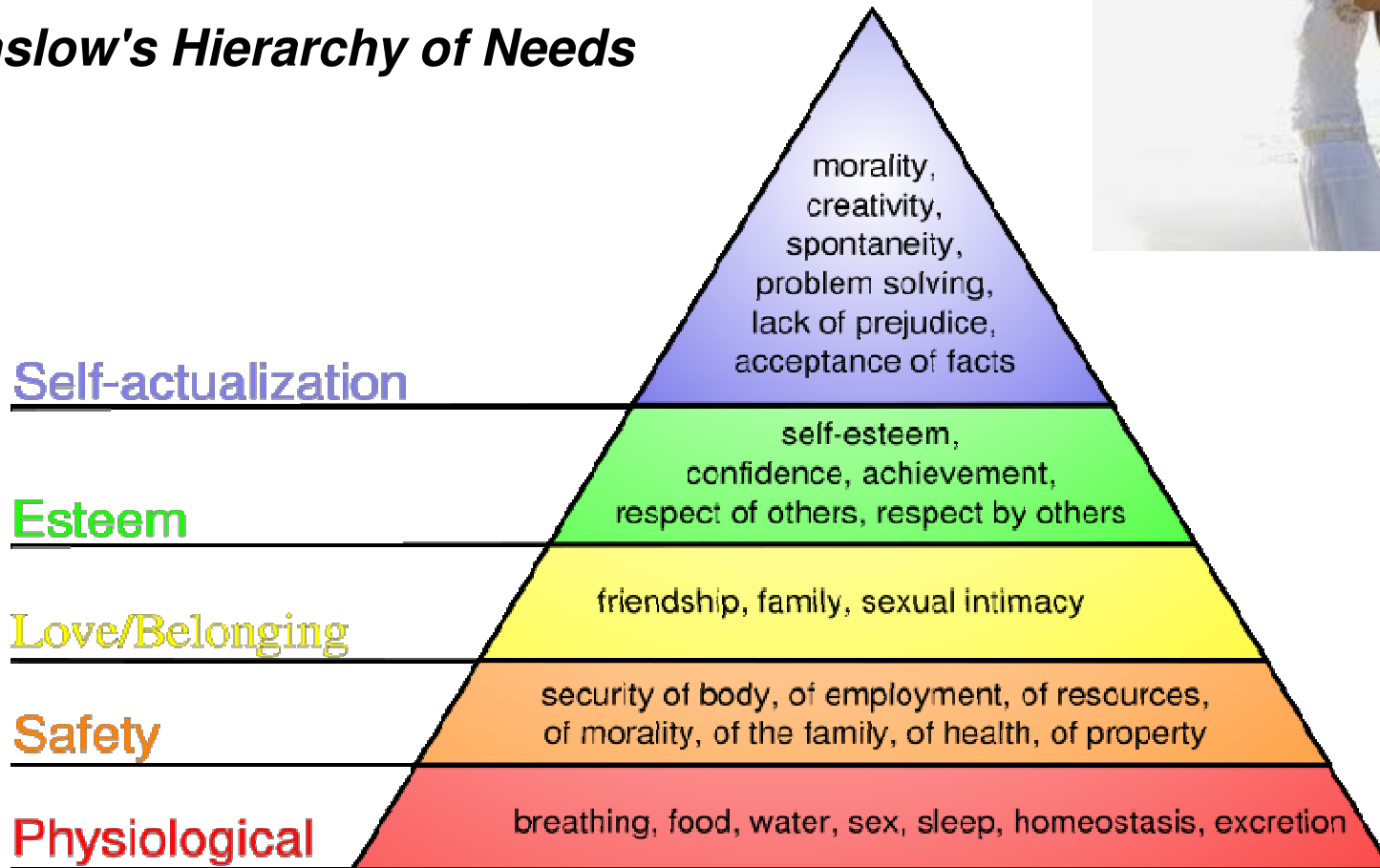
1. A feeling of interconnectedness
2. Mindfulness
3. Spirituality as a part of daily life
4. Living in harmony with the community

- Source of strength and hope, a sense of purpose and place in the universe
- Enhancing spiritual health is time consuming and requires effort



# Psychosocial Health

## *The Maslow's Hierarchy of Needs*



Maslow, A.H. (1943) A Theory of Human Motivation.



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# Psychosocial Health

People who are psychosocially healthy:

- Feel good about themselves
- Feel comfortable with other people
- Control tension and anxiety
- Can meet the demands of life
- Can curb hate and guilt
- Choose a positive outlook
- Enrich the lives of others
- Cherish things that make them smile
- Value diversity
- Appreciate and respect nature

# Factors Influencing Psychosocial Health

## External Factors

- Family
- Wider environment



# Factors Influencing Psychosocial Health

- **External Influences**

- Family

- Highly influential on psychosocial development
    - Children raised in healthy, nurturing, happy families likely to learn to be responsible and accountable and are more likely to be well-adjusted and productive adults
    - Dysfunctional families – violence, sexual, physical, or emotional abuse, negative behaviours, etc., can have harder time adapting to life
    - Not all children of dysfunctional families are mal-adapted nor do all children from healthy families are well-adapted

# Factors Influencing Psychosocial Health

- **External Influences**

- Environment (broad)

- Persistent stressors, uncertainties, or threats in the external environment (outside the body) can cause health problems
      - Examples: living in a neighbourhood with rampant crime, lack of safety, school failures, unemployment
      - Some protective factors can off-set the negative impact of “toxic environments” e.g. Positive role models amidst chaos, high level of self-esteem
    - Access to health services and programs
      - Needed to maintain and enhance psychosocial health
      - People of low SES often need services the most but may be less likely to access services

# Factors Influencing Psychosocial Health

## Internal Factors

- Heredity
- Hormonal function
- Physical fitness



# Factors Influencing Psychosocial Health

## Self-efficacy, Self-esteem

- Belief in one's ability
- Sense of self-respect

## Learned Helplessness vs. Optimism

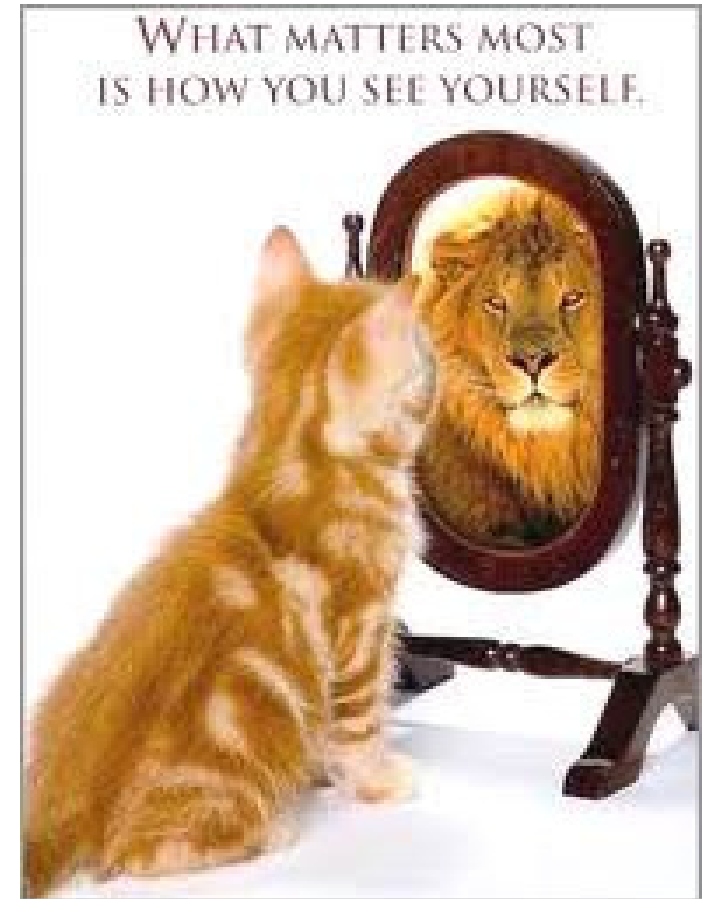
- Learned helplessness (Seligman)
- Learned optimism



# Factors Influencing Psychosocial Health

## Developing and Maintaining Self-esteem and Self-efficacy

- Building self-esteem
- Controlling emotions
- Solving problems
- Making decisions
- Seeking help
- Maintain physical health



# Factors Influencing Psychosocial Health

## Personality

- Unique mix of characteristics
- Influences: heredity, culture, environment
- Healthy Personality traits:
  - *Extroversion*
  - *Agreeableness*
  - *Openness to experience*
  - *Emotional stability*
  - *Conscientiousness*



# Factors Influencing Psychosocial Health

## Internal Influences

- **Life span and maturity**
  - Personality is dynamic – can change over time
  - Learning to control emotions and experience with successful accomplished developmental tasks e.g. Problem solving
  
- **Introduction to life-span development theory**
  - Development is a life-long process
  - Periods of development: • Infancy • Early childhood • Middle and late childhood • Adolescence • Early adulthood • Middle adulthood • Late adulthood (young-old, old, old-old, oldest-old)

# Factors Influencing Psychosocial Health

- Resiliency and developmental assets
  - **Resiliency**: traits that protect an individual or community from threat or harm
  - **Assets**: positive forces such as financial, emotional, spiritual, and physical assets, that contribute to resiliency
- Developing and maintaining self-esteem and self-efficacy
  - Develop a support group – obtaining positive peer support
  - Be supportive of others – giving positive peer support
  - Complete required tasks – discipline to complete tasks successfully and on time

# Programs Supporting Developmental Assets

- **Big Brothers Big Sisters**

- **Go Girls!** and **Game On!** are programs that are focused on supporting (tools and information) adolescents to engage in healthy behaviours (physical activity and nutrition) through small-group sessions.



- **Girls Inc.**

- **Friendly PEERsuasion** program develops girls' skills to resist pressure to use harmful substances (drugs, alcohol, tobacco, and household chemicals). After learning healthy ways to manage stress and to deflect peer, media, and other pressures that contribute to substance use, girls become peer educators (PEERsuaders) for younger girls.



Video: [http://www.youtube.com/watch?v=kK1GpuRy\\_Js](http://www.youtube.com/watch?v=kK1GpuRy_Js)

# Psychosocial Health

- Forming Realistic Expectations
  - Make and take time for yourself
  - Maintain physical health
  - Examine problems and seek help
- Getting Adequate Sleep
  - Needed for physical and psychosocial functioning
  - Common problem among students

## **Mind-Body Connection**

- Happiness is associated with health benefits
- Happiness may be related to differences in brain physiology - neurotransmitters function more efficiently in happy people
- Components of subjective well-being, which includes happiness
  - satisfaction with present life
  - relative presence of positive emotions
  - relative absence of negative emotions

# Mind-Body Connection

## Happiness and physical health

- Research has shown that physical health is enhanced when a person is mentally well.
- **Subjective well-being** is a term used to define wellness. Three components of Subjective Well-being:
  - *Satisfaction with present life*
  - *Relative presence of positive emotions*
  - *Relative absence of negative emotions*
- **Do you ever feel physically ill when upset?**

# Mind-Body Connection

## Several Myths about Happiness

- Only people in their fifties are happy
- Happiness belongs only to women
- Only white Americans are happy
- Money can buy happiness



## Mind-Body Connection

### Does Laughter Enhance Health?



Studies have shown the following results:

- Stressed people become less depressed with humor
- Students who use humor as a coping mechanism experience positive mood
- Senior citizens with a sense of humor often recover from depression
- Jokes, especially shared, increase social cohesion

## Mental illness

- Disorders that disrupt thinking, feeling, moods, behaviours and cause varied degree of impaired functioning in daily life
- Ranges from mild to severe
- One in five Canadians will directly experience a mental illness at some point in a lifetime.



# Mental illness

## Depression

- Most common emotional disorder in Canada
- Two forms of depression:
  - Endogenous
  - Exogenous

## Depression is...

- NOT a natural reaction to crisis and loss
- NOT about willpower
- NOT about crying
- NOT all in the mind
- NO single therapy works for all cases

# Mental illness

## Treating depression

- Two most common psychotherapeutic approaches:
  - *Cognitive therapy*
    - ✓ Looking at life rationally, focus on here & now, break pervasive negative thought patterns.
    - ✓ Weekly sessions
    - ✓ Reasoning & behavioural exercises
  - *Interpersonal therapy*
    - ✓ Examining chronic human relationship problems, focus on here & now
    - ✓ Weekly sessions
    - ✓ Reasoning & behavioural exercises

# Mental illness

## Seasonal Affective Disorder (SAD)

- A type of depression
- About 25% of Canadian population experience milder SAD
- SAD strikes during winter months
- Risk factors:
  - Women are 4 times more likely to suffer SAD.
  - Young adults between 20-40 are most vulnerable
  - Potentially urban vs rural divide
  - Geographic location
- Treatment options: light therapy is most successful



# Mental illness

## Anxiety Disorders

- Most common of mental health problems
- Affect behaviour, thoughts, emotions and physical health
- Include OCD, phobias, panic disorders, and PTSD
- Characterized by:
  - Intense, prolonged feelings of fright,
  - distress for no reason
  - Risk factors:
    - Women are more likely to suffer anxiety disorders.
    - Young adults between 20-40 are most vulnerable but onset might occur later in life



# Mental illness

## Schizophrenia

- Most frightening of all mental disorders
- Characterized by:
  - Alteration of the sense of (audio & visual hallucinations)
  - Inability to sort out stimuli and respond appropriately
  - Changes in emotions, movements, behaviours
- Biological brain disease
- Brain damage occurring in fetal development
- Onset in adolescence and early adulthood
- Treatable not curable



# Sex issues in psychosocial health

## ➤ Depression and Sex

- Hormonally related sex differences, multiple roles of women, different mechanisms for coping

## ➤ PMS: Physical or Mental Disorder?

- PMS is characterized by depression, irritability, and other symptoms of increased stress typically occurring just prior to menstruation and lasting for a day or two

# Suicide: giving up on life...

## ➤ Facts

- 3,613 suicides reported in Canada in 2004
- Rate is 3 times higher in males than females (although more women attempt)
- Suicide is the 2<sup>nd</sup> leading cause of death in 15-24 year olds
- Suicide rates among First Nations peoples are 3-8 times that of other Canadians

# **Suicide: giving up on life...**

## ➤ **Warning Signals of Suicide**

- Talk of suicide
- Making a plan or increased risk taking
- Writing or drawing about suicide
- Preoccupation with death
- Recent loss and inability to let go of grief
- Withdrawal from friends and family
- Increased use of alcohol or drugs

# **Suicide: giving up on life...**

## **Taking Action to Prevent Suicide**

- Monitor the warning signals
- Take any threat seriously
- Do not belittle the person's feelings
- Let the person know you care
- Listen
- Ask directly, “Are you thinking of hurting yourself?”
- Help think of alternatives
- Tell the person's friends, family, or counsellor

# Seeking professional help

## Circumstances for seeking help

- Think you need help
- Experience wild mood swings
- Problem is interfering with daily life
- Fears or guilt is distracting
- Withdraw from others
- Feel inadequate or worthless
- Feel you cannot “get your act together”

# Seeking professional help

## Types of Mental Health Professionals

- Psychiatrist
- Psychoanalyst
- Psychologist
- Clinical/Certified/Psychiatric Social Worker
- Counsellor
- Psychiatric Nurse Specialist