2. Stress and coping
STRESSORS

= stimuli that cause stress:

- physical;
- chemical;
- biological;
- psychological.

Stress = the body reaction (biological and psychological response) to the action of stressors.
Psychological stressors
(traumatic situations / life events)

Holmes-Rahe Social Readjustment Rating Scale

- Measures how psychological stress affects physical health.
- Scale ranks typical life events in terms of their level of stress.
- Many different researchers have found that psychological stress occurs at higher-than-chance levels prior to physical illness.

<table>
<thead>
<tr>
<th>BIOMEDICAL MODEL</th>
<th>BIOPSYCHOSOCIAL MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good health = healthy body</td>
<td>Good health = healthy mind, healthy body, healthy social integration</td>
</tr>
<tr>
<td>Treatment: focused, physician centered</td>
<td>Treatment: diffuse, community centered</td>
</tr>
<tr>
<td>Goal: absence of disease</td>
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<tr>
<td>Method: treat symptoms of disease</td>
<td>Method: treat causes of disease</td>
</tr>
<tr>
<td>Example: treat high blood pressure that results from obesity with drugs</td>
<td>Example: treat obesity through counseling, goal setting, education, and behavioral intervention</td>
</tr>
<tr>
<td>Patient’s role: passive subject of drug treatment and surgery</td>
<td>Patient’s role: promote wellness through lifetime; education in schools, home, and community</td>
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</tbody>
</table>

- the more points an individual accumulates the more likely he will experience illness of all kinds in a subsequent 2-year period
The reaction to life events

**Distress**
- a situation perceived as negative
- hormones: - catecholamines (cardiovascular risk);
  - cortisol $\rightarrow$ immune depression
- may be chronic, long-lasting, predictable.

**Eustress**
- a situation perceived in a positive way;
- essentially, eustress is a nice surprise;
- hormones: - catecholamines
  - endorphins $\rightarrow$ euphoria, analgesia, ↑ immunity, longevity
- is typically acute, has low duration and high intensity.
Stressors

**Threat** = anticipation of a danger

a) **acute** (may have unhealthy consequences in the recovery state);

b) **chronic** = General Adaptation Syndrome (GAS) (Selye, 1936)
   1. *alarm reaction stage* = physiological response to stress (heart rate, release cortisol, adrenaline) \(\rightarrow\) fight/flight reaction
   2. *resistance stage* – less energy, but the body is still alert;
   3. *exhaustion stage*
      \(\rightarrow\) fatigue, anxiety, depression, burnout
      \(\rightarrow\) PS disease
Allostasis

= refers to the physiologically active adaptation process through which the body responds to daily events and maintains its homeostasis.

Chronic / repeated stress:
- overwhelms the body's capacity;
- represents a burden (extra load)
= "allostatic load".
c) **predictable**, announced threat:
- 2 peaks of cortisol secretion;
- is influenced by self-perceived control;
e.g. announced surgical interventions;

\[\text{Cortisol vs Time}\]

\[\text{Time}\]

\[\text{Cortisol}\]

d) **unpredictable** threat:

**Learned helplessness**  
*(hopelessness-helplessness)*
a person will not try to get out of a negative situation because the past has taught her that she is helpless → endure and accept the fate.  
Implications when the threat is perceived as chronic, unavoidable and unpredictable (e.g., pain in cancer).
Stressors

Conflict
= when a person is faced with divergent motivations or demands

Frustration
= the inability to achieve the goal
    There is an obstacle in reaching one’s goal
    The level of aspirations >>> the level of possibilities

Overload
= forcing the adaptive capacities at the cognitive, affective and motivational level

Underload
= an individual has a predictable, routine activity, without any creativity
Linton: psychological needs → affiliation;
    → emotional security;
    → change, novelty.
Reactions to stress

Psychological:

- cognitive:
  - deficit of attention, memory, concentration;
  - low intellectual efficiency, ideational blockage, low self-confidence;

- affective: anxiety, irritability, annoyance, fear, anger, shame, apathy, sadness / paradoxical laughter / joy;

- behavioral:
  - direct manifestations of psychological reactions;
  - compensation (drinking coffee, alcohol, smoking);
  - decrease of professional performance;
  - neglectful physical appearance.

Somatic: psychosomatic disorders → psychosomatic diseases
Stress appraisal

It is individual and influenced by:
- personality type;
- perceived stress;
- protective cognitive traits;
- coping strategies;
- life experience.

It can change over time (Lazarus) and consequently influence behavior.
Behavioral patterns (A, C, D) with implications in pathogenesis

1. Type A behavioral pattern \textit{(Friedman & Rosenman)}:
   - highly competitive and oriented towards personal achievements;
   - always in a hurry (under time pressure)
   - constantly thinking what to do next;
   - workaholic, unable to rest;
     - hostile;
     - aggressive;
   - at greater risk of cardiovascular diseases (heart attack, stroke, hypertension).

As patients, they are non-compliant, dissatisfied, pressure in the direction of negotiating / „buying“ health.

Type A was described as being opposite to Type B (relaxed, laid back, “easygoing”, lethargic, even-tempered, amiable). Although this type has not been associated to a higher risk of psychosomatic disorders / diseases, they are still exposed to a direct risk of obesity and diabetes, via lack of exercise.
2. **Type C behavioral pattern** (*Temoshok*)

- repression of emotions, especially negative emotions (anger);
- low self-esteem;
- introjection (incorporation of stress);
- the tendency to sacrifice him / herself, without expressing personal demands (stoicism);
- discrete, "does not want to disturb".

Hormones: chronic ↑ secretion of cortisol → infectious diseases, cancer.

As a patient: compliant, but arrives late to the doctor.

Can be the result of culturally – embedded behavioral repertoires.

3. **Type D behavioral pattern** (*Denollet*)

- tends to be anxious, irritable, and insecure;
- negative affectivity (experiences negative emotions, avoids saying or doing things that others might not like);
- social inhibition (are tensed and inhibited around others);
- low social support.

Hormones: high adrenaline, cortisole → a higher risk for heart disease (poor prognosis, early death).
Protective cognitive styles and traits

Self-efficacy (SE) (Bandura)

= “the belief in one’s capabilities to organize and execute the course of action required to manage prospective situations”

= the belief one has in his / hers capacities to face a problematic situation

- SE is associated with “active coping” (problem-centered coping)

- ↑ SE: greater motivation, faith in own abilities;
  ↑ level of immune competence;
- ↓ SE: distress, anxiety, proneness towards risky behavior.
Internal locus of control *(Rotter)*

Locus of control: the extent to which individuals believe that they can control events that they confront with:

- **internal locus of control (ILC):** important for patients when they receive the diagnosis → own responsibility for the treatment; → ↑ compliance

- **external locus of control (ELC):**

  → the tendency to leave health in other’s hands;
  → higher association to anxiety, depression.

Locus of control is a culturally-sensitive concept (West – East asymmetry).
**Hardiness** *(Kobasa)*

= a personality trait common in people who can cope successfully with high levels of stress.

Consists of 3 components:

- *Control* – strong sense of control over events in their life;
- *Commitment* – highly involved in tasks, strong sense of purpose;
- *Challenge* – the propensity to see new situations and changes as opportunities for development.

- enables people to perceive stressful life situations less threatening;
- facilitates the ability to deal with workplace stress, job control and psychological demands;
- is a protective factor against illness;
- is related to positive outcomes in patients with chronic illnesses.
Coherence (*Antonovsky*)

= the way a person perceives, judges and interprets the world and him / herself.

Has 3 components:

- **comprehensibility** (the environment is structured, predictable and explicable);
- **manageability** (perceived availability of the necessary resources to deal with challenges from environment);
- **meaningfulness** (the person believes that the environmental challenge are worthy to be taken up).

- is related to healthy lifestyle behaviors such as exercise, diet, enough sleep, less smoking and drinking;
- is a protective factor against substance abuse and addiction;
- helps a person remain healthy, even in acute stress.
**Self-esteem**
- the overall self-evaluation of one’s worth or value;
- represents the confidence in one’s ability to think, to cope with the basic challenges of life and be successful and happy.

**Optimism**
- reflects the extent to which people hold generalized favorable expectancies for their future;
- unrealistic vs. realistic optimism – may influence compliance and prognosis.
Coping strategies

Non-confrontational:
- unconscious (automatic);
- fast;
- spare energy;
- act as a temporary solution;
- distort reality.

Confrontational:
- conscious;
- slower;
- energy consuming:
- may be effective permanently;
- maintain the contact with reality.
Non-confrontational

Examples

**Denial:** the mechanism by which people refuse to accept or recognize the true source of their anxiety;

**Displacement:** occurs when people direct their emotions (especially anger) towards things, animals or other people that are not the real object of their feelings;

**Sublimation:** the mechanism by which socially unacceptable impulses are redirected into acceptable ones;

**Repression:** anxiety-provoking thoughts and unacceptable feelings are totally relegated to the unconscious;
**Regression:** occurs when a person reverts to a previous phase of psychological development;

**Projection:** a mechanism by which people attribute their own undesirable traits to other people or objects;

**Intellectualization:** the person focuses on the intellectual component of the situation, trying to distance herself from the contents susceptible to causing anxiety and negative emotions;

**Rationalization:** finding of excuses or explanations for which a negative event can get positive connotations or interpretations;

**Reaction formation:** the conversion of desires and impulses that are perceived as dangerous or unacceptable in their opposite. The person's behavior becomes the opposite of what it is expected from him / her.
Confrontational strategies

A. Direct (problem-solving) coping

- efforts to remove stressful circumstances;
- mostly used in potentially reversible situations;
- specific to people with internal control locus;
- involves the analysis, resolving or minimization of the stressful situation;

During confrontation, the subject may:
- evoke previous experience;
- count on social support (affective, material, and / or motivational);
- request information and seeks tools for action;
- develop an action plan.
B. Indirect (emotion-focused) coping

- represents the effort to adjust the emotional consequences of stressing or potentially stressing events;
- mostly in irreparable and irreversible situations;
- focuses on the person, on his / her inability to deal with stress;
- decisive confrontation is deferred;
- acts through the regulation of the emotional consequences of the stressful events, and not the action on them.
Anti-stress programs

Aim: the replacement of primitive, radical, non-adaptive mechanisms with more flexible and mature mechanisms, allowing for adaptation in wider contexts and with long-term positive consequences.

Effective programs:

- Birkenbihl;
- New Start;
- Burns;
- Roy Masters.
Example: The New Start program

**Nutrition** - no fats, cholesterol;
  - low consumption of meat, salt, sugar;
  - high consumption of fruits, vegetables;
  - healthy intervals between meals;

**Exercise** - e.g. daily walking;

**Water** - drinking of 6-8 glasses (1.5-2 liters) of water per day;

**Sun** – moderate exposure;

**Temperance** – self-control;

**Air** - fresh;

**Rest** - daily, weekly (sleep and / or relaxing exercises);

**Trust** (faith).