

MUNI
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Psychopathology

Seminars on Psychiatry - VLA

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Outline

- Introduction – why, what, how
- Domains of psychopathology

Aim – learning outcomes

- To learn the vocabulary – symptoms of mental illness
- To learn the concepts of discrete psychological functions
- To learn the description of major and most frequent symptoms

Psychiatry studies mental disorders

- Description
- Etiology
- Prognosis
- Prevention
- Treatment

General psychiatry

- studies impairment of brain and mind functions

Special psychiatry

- is devoted to different mental diseases

Domains of psychopathology

- Personality
- Emotions
- Cognition
- Behavior

Psychopathology describes symptoms of impaired **psychic functions**

Psychic functions

□ Personality

□ Emotions

- mood
- affect

□ Behavior

- volition
- action

□ Cognition

- consciousness
- attention
- orientation
- perception
- memory and learning
- thinking and decision making
- intellect

Norm and pathology

- Personal
 - Subjective ego-dystonic experience
 - Significant change in habitual experience and behaviour
 - Does not need to be realised – recognized by peers
- Cultural
 - Conformist and non-conformist behaviour
 - Usual behaviour and experience corresponding to the culture and individual's position within it
 - Non-conformity is not a sign of psychopathology
- Typical clinical pictures = overt signs of mental illness
 - Hallucinations, catatonia...
- Always search for the reason of behaviour: **“Why”?**




Consciousness

= awareness of one's body and environment

Disorders of Consciousness

Quantitative changes - reduced vigility (alertness):

- Somnolence
- Sopor
- Coma

Behaviour	Response
 Eye Opening Response	<ol style="list-style-type: none">4. Spontaneously3. To speech2. To pain1. No response
 Verbal Response	<ol style="list-style-type: none">5. Oriented to time, person and place4. Confused3. Inappropriate words2. Incomprehensible sounds1. No response
 Motor Response	<ol style="list-style-type: none">6. Obeys command5. Moves to localised pain4. Flex to withdraw from pain3. Abnormal flexion2. Abnormal extension1. No response

Disorders of Consciousness

Qualitative changes – disturbed perception, thinking, affectivity, memory, and behavior:

- **Obnubilation** (twilight state) - impaired self-awareness, **rapid onset and rapid end**, aimless acting, complete **amnesia** on this state
 - intoxication, brain tumors, dissociative personality disorder
- **Delirium** (confusional state)

Delirium

= **transient cognitive** disorder

- *core features:* impaired **consciousness** with **attention** deficit, **rapid onset, fluctuating course**
- *other features:* desorientation, psychomotor changes (agitation), distorted perception (illusions, hallucinations), disorganized thought (delusions), sleep disturbances, emotional changes (irritability, flatness of emotions), enhanced suggestibility
- intoxication, infection, dehydration, abstinence syndrom

Orientation

= awareness of oneself (**person**) with reference to **time, place, and situation**

Disturbances of orientation

- disorientation in **time** (major depression)
- unawareness of oneself = disorientation to **person** (dementia)

Attention

= the act or the power of fixing the mind on something

Disturbances of attention

- Hypoprosesia (major depression)
- Hyperprosiesia (neurotic disorders)

Perception

- = awareness of what is presented through the sense organs
- = detection and interpretation of the stimuli

Disturbances of perception

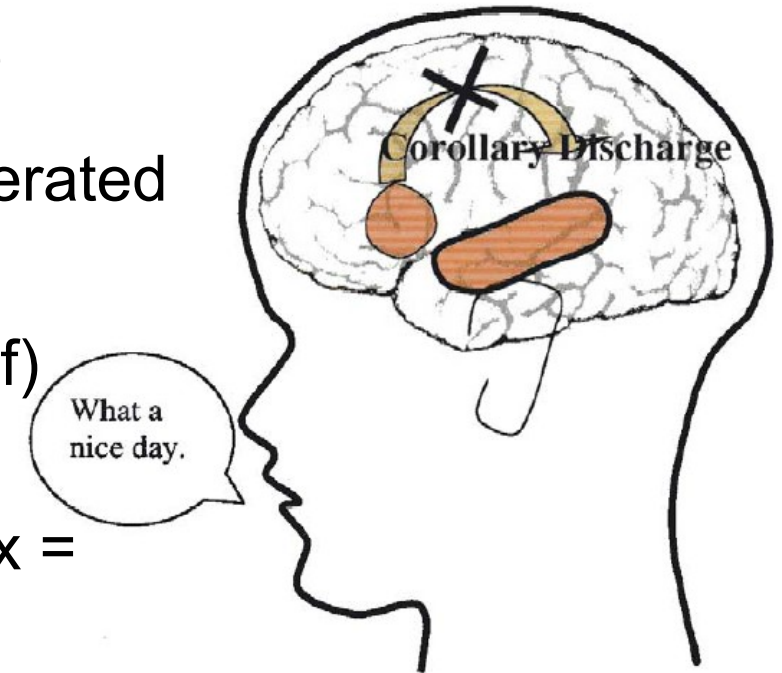
- **Illusions** = distorted perception of present stimuli
- **Hallucinations** = perception of absent stimuli
 - Sensory modality
 - Auditory: 3rd person perspective, commenting, imperative, contrary
 - Visual: simple (flashes, geometric patterns), complex scenes, microzoopsia...
 - Tactile, Gustatory, Olfactory, Movements
 - Intrapsychic hallucinations (delusions of control)
 - Thought broadcasting, thought imputation/amputation, thought echo's
 - Location/source of hallucinations – inadequate (from a teeth, toe...)

Abnormal coordination of sensorimotor cortex

- *Corollary discharge theory:*
 - a copy of the motor plan sent from the motor to the sensory cortex (“**efference copy**”)
 - suppression of awareness of sensation in self-generated actions - expected (efference) and experienced (reafference) sensations match
 - discrimination of origination of actions (self/non-self)
...we are not able to tickle ourselves...
- absence of the “efference copy” in the sensory cortex = perception of exogenous origin of actions

...move the image across your retina by:
a) moving an object
b) moving your eye
c) pressing your eye

- Schizophrenia: failure of corollary discharge mechanism
inner voice = **hallucinations**



Ford et al., 2001; Ford and Mathalon, 2004; 2005

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Emotions

Emotions

- = **physiological** automatic responses to salient *positive/negative* stimuli
- př. potential sexual partner is present/public speaking
 - **Brain response** – increased arousal, increased attention, increased alertness, increased vigility
 - **Body response** – *endocrine* (cortisol), *vegetative* (flushing, paleness, sweating, tachycardia, mydriasis, increased blood pressure, hyperpnea), *behavioral* (tremor, face expression, freezing)

Feelings

= conscious perception of the brain and body changes during emotion

- **Experiential brain response**

př. joy, love, anger, fear

Emotions

Physiological Mood

- Long lasting emotional state
- Strengthens an affect of the same direction, suppresses an affect of the opposite direction

Physiological Affect

- Brief and strong emotional response
- No** changes of consciousness, **no** amnesia

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Disturbances of emotions

Disturbances of emotions

Pathological mood

- Manic
- Depressive
- Euphoria
- Expansive
- Exaltation
- Explosive
- Anxious
- Resonant
- Apathy

Disturbances of emotions

Pathological affect

- excessively very strong emotional reaction
- short change of consciousness (obnubilation)
- amnesia

Phobia = persistent irrational fear and wish to avoid a specific

situation, object, activity

- agoraphobia, claustrophobia

Affect

□ **Quality** (depressed, euthymic, euphoric)

□ **Intensity** (mild, moderate, severe)

□ **Content** (perplexity, fatuousity)

□ **Dynamics**

□ Range = diversity of emotional states (flattening, restricted, expansive)

□ Reactivity = rapidity with which one affect shifts to another (lability, incontinence, irritability)

□ **Congruence** = Appropriateness (incongruent emotions in schizophrenia)

<https://www.coursera.org/learn/international-psychiatry/lecture/X6IZW/the-affect-in-the-mental-state-examination>

Depression - syndrom

Affective symptoms

- depressed mood – bad, down, black, oppressive – distinguish from physiological sadness
- anhedonia
- (anxiety)

Motivation

- loss of interest in usual activities
- inability to perform, initiate activity (abulia, hypobulia)

Cognitive

- evaluation, self-esteem
- attention (hypoprosexia), memory
- negative cognitive biases

Suicidal activity – hopelessness, suicidal thoughts

Vegetative, „somatic“

- insomnia, constipation, anorexia. decreased libido, loss of energy and fatigue, psychomotor retardation

Mania - syndrom

Affective symptoms

- expansive moods: mania, euphoria, irritability, dysforia

Cognitive

- increased speed vs. decreased accuracy: cognition (flight of ideas), memory (hypermnnesia), speech (pseudoincoherence), decisions (risky)...
- distractibility
- inflated unrealistic self-esteem

Behavioral

- hyperactivity, restlessness
- overinvolvement – socially, sexually, occupationally...

Vegetative, somatic

- insomnia (**decreased need to sleep**), anorexia (decreased need to eat), increased energy

Thinking

= goal-directed flow of ideas and associations initiated by a problem and leading toward a reality-oriented conclusion

evaluated via speech of the patient

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Thought disturbances

Quantitative disturbances: Speed

□ Decrease

- **bradypsychism (retardation)** - slowing of the flow of associations, slowed and diminished verbal production (major depression)
- **thought blocking** - cessation of the flow of associations = patient stops the verbal production without any recognisable impulse from surroundings (schizophrenia)

□ Increase

- **flight of ideas**: excessive speed of thinking manifested as extreme speed in speech (= logorrhoea) (manic episode of bipolar disorder)

Quantitative disturbances: Structure

□ circumstantiality

- indirect speech that is delayed in reaching the point, characterised by an overinclusion of details (obsessive-compulsive disorder, neurotic disorders)

□ perseverative thinking

- involuntary persistence of response to some question or topic,
verbigeration - a meaningless repetition of specific word or phrase (manic episode of BD)

□ tangentiality

- patient never gets from desired point to desired goal

Quantitative disturbances: Structure

- **illogical** (paralogic) thinking, loosening of associations
 - thinking containing erroneous conclusions or internal contradiction
- **neologism**
 - new word created by the patient often by combining syllables or other words
- **incoherent** thinking <https://www.coursera.org/learn/international-psychiatry/lecture/BzKL8/the-thought-process-in-the-mental-state-examination>
 - thought that is not understandable
 - word salad: incoherent mixture of words and phrases
- absence of abstraction = **hyperconcretism**

The apple does not fall far from the tree

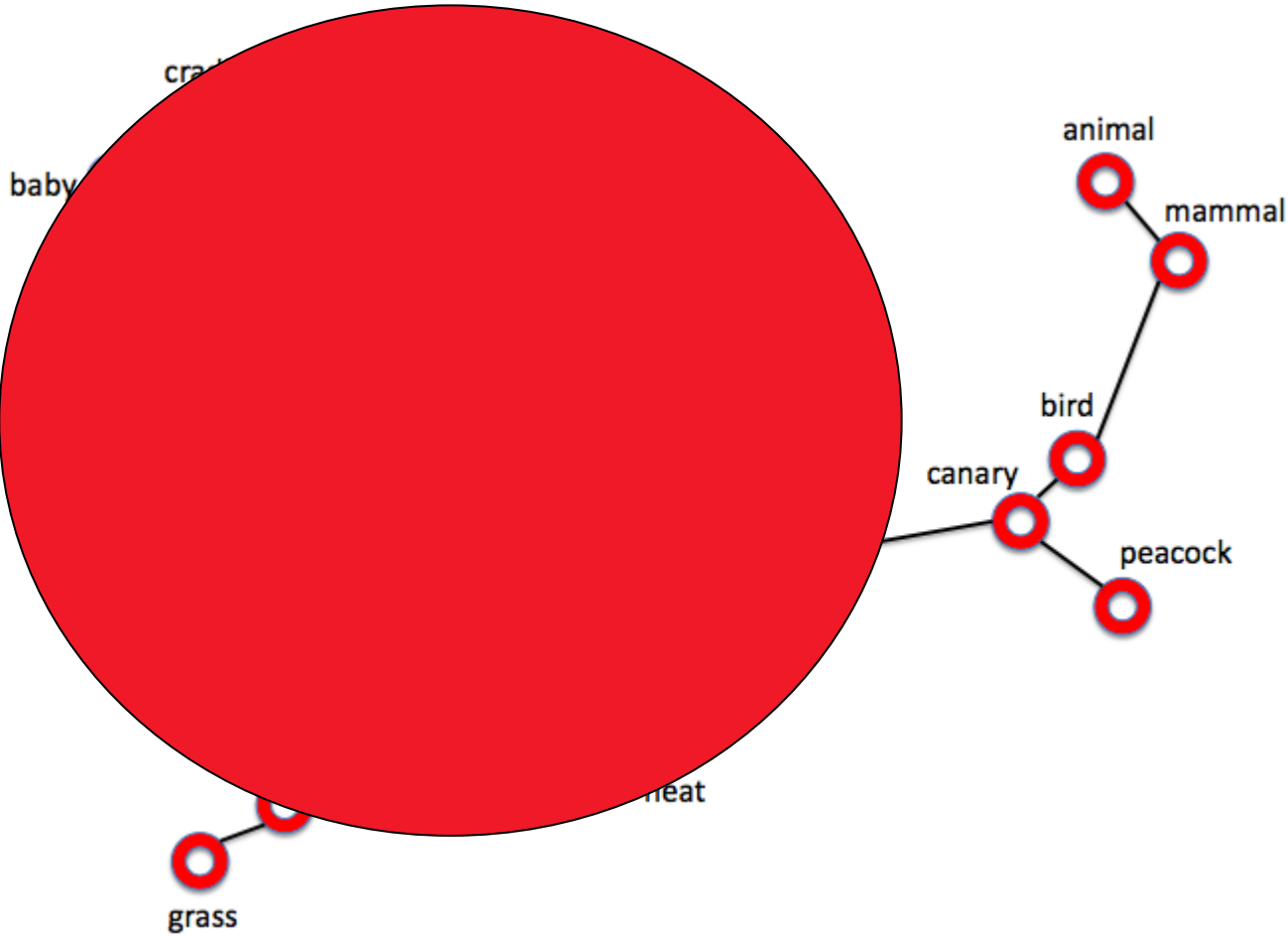
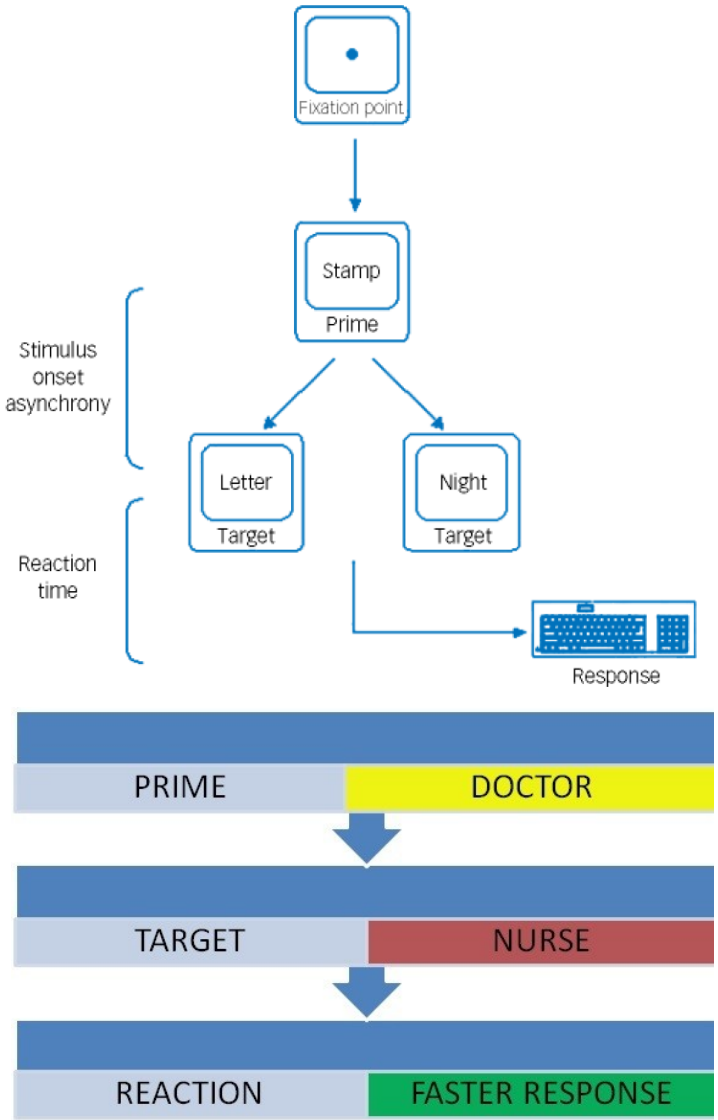
Semantic priming

= automatic (implicit) memory function

- tunes your associations based on current content of mind
- network of representations (words, meanings) is activated
- optimal performance = focused activation around the network node

- *Lexical decision task*: word x nonword (student x student)

Lexical decision task



Semantic priming and Formal Thought Disorder (FTD)

- Meta-analysis of 36 studies (Pomarol-Clotet et al., 2008)
 - SCH vs. HC $d = 0,7$ (95% CI $-0,02 - 0,16$)
 - FTD vs. HC $d = 0,38$ (95% CI $0,21 - 0,55$)

Semantic hyperpriming in FTD = pathological heightening of normal associative processes = fast response to distant words

- more extensive network activation

Qualitative disturbances: Content

- Delusions
- Obsessions

Delusions

= False beliefs

- not a conventional belief (not shared)
- inadequate/bizarre content
- formed by logical thinking process but based on a pathological assumption
- not consistent with patient's intelligence and cultural background
- cannot be corrected by rational arguments
- influence on behaviour

Formation (development)

- Delusional **mood** – feeling that something is wrong, different, unreal
- Delusional **perception** – things have special meaning, perceived as significant
- Making sense out of it = "AHA", delusion **formation**

Melancholic delusions (micromanic, depressive)

- delusion of **self accusation**

 - false interpretation of real past event resulting in feeling of guilt

- **hypochondriac** delusion

 - false belief of having a fatal physical illness

- **nihilistic** delusions

 - false feeling that self, others or the world is non-existent or ending

- delusions of **failure**

 - false belief that one is unable to do anything useful, worthlessness

- delusion of **property (ruin)**

 - false belief that one lost all property

Delusions of grandeur (megalomaniac, expansive)

- delusion of **importance**

- exaggerated conception of one's importance

- delusion of power, **extrapotence**

- exaggerated conception of one's abilities/possibilities, supernatural skills

- delusion of **identity**

- false belief of being the offspring of member of an important family

Paranoid Delusions

□ based on ideas of reference (false ideas that behaviour of others refers to a patient):

□ delusion of **persecution**

□ false belief that one is being persecuted

□ delusion of **infidelity**

□ false belief that one's lover is unfaithful

□ **erotomanic** delusion

□ false belief, that someone (usually famous) is deeply in love with them

Delusions of thought control

= false feeling that one's will, thoughts, feelings, or movements are controlled by another agent

thought **withdrawal**

false belief that one's thoughts are being removed from one's mind by other people or force

thought **insertion**

false belief that thoughts are being implanted in one's mind by other people or force

thought **broadcasting**

false belief that one's thoughts can be heard by others

thought **control**

false belief that one's thoughts are being controlled by other people or force

Obsessions

= **thoughts, impulses or images** entering the mind despite the person's effort to exclude them

- persistent, irresistible, repetitive, stereotypical, monotonous
- interfere with directed behaviour and attention
- ego-dystonic => associated with anxiety

vs. **preoccupation of thought (Over-valued ideas)**: certain idea is in the centre of thinking, is coming back, usually associated with a strong affective tone (person, money, success...), other things are not considered to be important

- schizophrenia, narcissistic personality, BPD, mania, psychosis

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Memory

= function that enables to store and remember information

„Life cycle“ of a memory trace

Immediate memory

- information stored for 15-20s

Short-term memory

- consolidation of the memory trace – several minutes to 2 days
- medial temporal structures (hippocampus)

Long-term memory

- formed trace
- large cortical areas
- Declarative (explicit) – for events, language, knowledge
- Procedural – for motor patterns (riding bike, skiing)

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Memory disturbances

Quantitative disturbances

- **Amnesia:** short/long-term memory impairment in a state of normal consciousness
 - anterograde: failure to form new information
 - retrograde: failure to recall old information
 - organic (head trauma, tumor, surgery etc.)
 - dissociative amnesia:** selective inability to recall previously learned information with normal functioning in the present (normal learning)
- **Hypomnesia**
- **Hypermnnesia:** unusually vivid memory
 - mania, posttraumatic stress disorder (intrusive memories), obsessive or paranoid personality traits

Qualitative disturbances

- **paramnesias** – retrospective falsification of memories during its **recollection** (inaccuracy in time and situation of the recalled event)
- **confabulation** – filling memory gaps with inaccurate information

Amnestic disorders

Characteristics

- **Definition:** acquired **impaired ability to learn** and recall new information (and past events sometimes)
- **No attention deficit or clouding of consciousness** (delirium), **no other cognitive dysfunction** (dementia)
- caused by structural or chemical damage to the brain via systemic disease (metabolic, hypoxia, substance abuse) or primary cerebral disease (brain infections, brain tumors, head trauma)

Clinical notes

Transient global amnesia

- episodes of transitory inability to learn (to form memories)
- inability to recall memories from the episode
- restoration to completely intact cognitive state
- no behavioral changes x may be confusion
- sudden/gradual onset (head trauma/chronic toxic exposure)
- disorientation to place and time, spared orientation to person
- lack of insight
- confabulations**

Intellect

= mental ability that includes logical and rational aspects of the mind

Intellect disturbances

- Mental retardation** (insufficient development)
- Dementia** (decline)

Dementia

- persistent diminution of **cognition** in the setting of a stable level of **consciousness**
- three main symptomatic domains:
 - neuropsychologic: cognitive decline
 - neuropsychiatric: behavioral and psychological symptoms
 - activities of daily living

Dementia

- memory: impaired learning, recall, and recognition
- executive functions: non-realistic planning, decreased flexibility
- thought and language (disorganized structure, decreased fluency)
 - **perseveration** (following a topic after its change), **echolalia** (repetition of other's speech)
 - impaired abstraction (concrete thinking)
- poor judgment („what to wear in cold weather“), loss of insight (unawareness of symptoms)
- attention: increased distractibility
- visuospatial abilities (inability to reproduce a complex drawing)
- higher cortical functions - gnosis and praxis: apraxia (lack of motion skills), agnosia

Volition and Action

= voluntary movements

Volition disturbances

- Hypobulia** (depression, schizophrenia)
- Abulia**
- Hyperbulia** (mania)

Catatonia = qualitative disturbance of voluntary movements

- immobility, abnormal behaviors, abnormal movements

„Positive“

- agitation
- active negativism
- mannerism (odd caricature of normal movements)
- stereotypies (repetitive, nonsensical movements)
- grimacing
- echolalia, echopraxia

„Negative“

- mutism
- passive negativism
- catalepsy (passive induction of a posture held against gravity)
- posturing (spontaneous and active maintenance of posture against gravity)
- waxy flexibility (slight and even resistance to positioning by examiner)
- stupor (no psychomotor activity)

Presentations

- Psychosis: <https://www.youtube.com/watch?v=ZB28gfSmz1Y&t=35s>
- Depression: <https://www.youtube.com/watch?v=4YhpWZCdiZc>
- Mania: <https://www.youtube.com/watch?v=zA-fqvC02oM&list=PLFZTIjPAn-Kx257X3b9ET8qZfVOcC8V5o&index=7&t=0s>

Next steps – clinical vignettes

Have a look at videos:

- Depression: <https://www.youtube.com/watch?v=4YhpWZCdiZc>
- Mania: <https://www.youtube.com/watch?v=zA-fqvC02oM>
- Hallucinations: <https://www.youtube.com/watch?v=0tn8xLQY53U>
- Hallucinations and delusions: <https://www.youtube.com/watch?v=ZB28gfSmz1Y>
- Delirium: <https://www.youtube.com/watch?v=IjH1AoVuVS0>
- Delirium: https://www.youtube.com/watch?v=hwz9M2jZi_o
- Anxiety: <https://www.youtube.com/watch?v=li2FHbtVJzc>
- Panic attack: https://www.youtube.com/watch?v=9YaS_4tXBNU
- Catatonia: https://www.youtube.com/watch?v=_s1lzxHRO4U
- Obsessions, Compulsions: <https://www.youtube.com/watch?v=xMwOLOpFKIM>
- Obsessions, Compulsions: <https://www.youtube.com/watch?v=syM6XYzht20>
- Conversion: https://www.youtube.com/watch?v=_jOuqAcgMrA
- Suicide: https://www.youtube.com/watch?v=A-m_alQfXZA

Děkuji za pozornost