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Basics of Psychiatry

Basics

→ The term psychiatry was coined by **Johann Christian Reil**

→ History taking is the first component – **Role of informant is very crucial**
(Informant can be friend/ family member/spouse/mother/father/son/daughter who understands the symptoms of the patient in detail)

Can any person be an informant? - No the informant must be reliable

→ **The informant should fulfill 5C's to be called as reliable:**

- **Consistency** – The history given by the informant should be exactly same in all interviews
  For.eg: When information of patient is taken from his father, the information given by father should be same in second interview.
- **Coherence** – The bits of information provided should be logically connected to each other. Initial one third of the information should be connected to the middle third and middle third should be connected to latter one third.
- **Chronological information** – The information should be provided in a chronological manner. For e.g.: if patient is having symptoms for first six months the informant should be able to tell us how it started, what were the initial symptoms, what happened in the subsequent months, and what prompted him to bring the patient to the doctor.
- **Closeness with the patient** – Informant should be close to the patient and must be aware of the patient's symptoms. For e.g.: if the informant who came with patient is living in another city, he/she is not a reliable informant.
- **Concern with the patient** – Informant should be genuinely concerned for the patient. This is important in medicolegal cases. For e.g.: Wife who filed a case against her husband, is not a reliable informant for him.
- If all the 5C's are fulfilled then we consider informant as reliable. If the history given by the informant or patient is enough to reach a diagnosis is known as **adequacy of information.**

After taking history, 2nd component is clinical examination.

Which of the following is not a component of history taking in Psychiatry? **(Recent mcq)**
1. Family History
2. Personal History
3. Marital History
4. Food preferences
Ans- **Food preferences**

In Psychiatric patients we do GPE and systemic examination and then proceed to MMSE

Mental Status Examination (MSE)

→ Clinical examination in Psychiatry in which signs and symptoms of Psychiatric disorders of patient are recorded.

Components of MSE

A. **General appearance and behavior:** Just by seeing the appearance and observing the patient's behavior, we can get clues about Psychiatric disorder. For e.g.: if a patient comes to OPD and he is wearing a pink shirt, orange pants, goggles, hat, wearing lot of makeup. This appearance itself gives a clue that this patient probably has manic symptoms.

B. **Speech** – If a patient comes to OPD and he is speaking very rapidly/copious amount and it's not possible to interrupt the speech is possibly suggesting towards Mania. (In Mania speech volume gets increased, tone gets increased)

C. **Mood and affect (both these terms refer to emotions)**

- **Affect** – Describes cross-sectional emotional state expressed outwards. Short term and external expression. For e.g.: If I am smiling – expression of smile means I am happy, smile is an external expression of emotions would be called as affect. It is an external expression you can also observe it. Thirdly it is what I do in a cross-sectional manner.
- **Mood** – Long term or longitudinal emotional state, which is felt inwards. It describes internal emotional state. For e.g.: I was sitting sad for one month but today I am smiling. In this case my mood is → Sad and my affect is happy (Smiling at this particular point of time)

Affect and Mood are described under various subheadings:

1. **Quality**
2. **Fluctuation**
3. **Appropriateness and congruence**

1.Quality: It means what is the predominant emotional state at particular point of time.

For e.g.: Patient may be happy, sad, angry, irritated or bored.

Affect and Mood are different terms but often used interchangeably.

Abnormalities of Quality:

1. **Elevation of mood:**

a. **Euphoria** – State of extreme happiness without any reason for e.g.: Extreme happiness when failed in an exam without any reason. Extreme happiness on getting rank-1 in exam is not euphoria. Euphoria is seen in Mania or Hypomania.

b. **Elation** – One step higher to euphoria. It is euphoria + ↑ PMA (psychomotor activity). Seen in Mania. For e.g.: Patient is happy and running and jumping.
(What is psychomotor activity – Change in motor activity due to psychological reasons.)

c. **Exaltation** – Euphoria + ↑ PMA (psychomotor activity) + delusion of grandiosity (for e.g.: the patient thinks he is richest man on earth/ most powerful person on earth)
d. **Ecstasy** – It is state of extreme happiness/epitome of happiness (Sense of bliss- Seen in people who meditate)

All these abnormalities are seen in patient with Mania/Hypomania.

Another abnormality of Quality of affect are:

2. **Dysphoria** – Similar to euphoria but predominant mood state is irritability.
(For e.g.: The patient gets angry and irritated at very small things). Dysphoria is also seen in patients with Mania.
3. **Depressed Mood**. - Depressed mood is described as state of **pervasive (all the domains of life – whether I am playing, whether I am reading or watching TV, depressed mood is present) or persistent sadness (all the time).** Depressed mood is seen in depression.

2.Fluctuations in Affect and Mood.

Normally there is some level of fluctuation in affect and mood. For eg : Happy in the morning but sad after checking poor performance in exam and on finding silly mistakes becoming irritable. This is normal fluctuation.

In certain psychiatric disorder pathological fluctuations are seen. For eg : At one point of time patient is smiling, giggling and all of sudden he starts crying without any reason. This is abnormal fluctuation. From too happy to too sad.

Q: A man comes to your OPD he is laughing at one moment and crying at another moment, this is called as? → **Labile Mood**

a. **Labile (Unstable) mood or emotional lability** – Seen in patient with mania -Emotions are unstable

Exact opposite of this is:

b. **Affective flattening /flat affect /emotional blunting/blunt affect**

For e.g.: You crack a joke- patient does not get angry, you slap him patient does not get angry.
Seen in **Schizophrenia.**
There is also difference between flat affect and blunt affect based on range. But still they are considered similar.

3. Appropriateness and Congruence

a. Appropriateness – Whether my emotional state is matching the external environment or not. If it's in sync then it's called **"affect is in appropriate state"**. If it is not in sync then its called **"inappropriate affect"**
For e.g.: I go to a birthday party (social situation) – And I am happy in this situation → Affect **is in appropriate state**

I go to a birthday party (social situation) – And I am crying saying why this man is still alive,in this situation → Affect is **not in appropriate state**

I go to a funeral (social situation) – And I am laughing → Affect is **not in appropriate state**

b. Congruence – Congruence is more of an internal comparison, whether my emotions are matching with my thought content or not. What I am thinking, What I am speaking and how I am appearing emotionally, whether it is matching or not.

For eg: A patient comes to you is describing how his mother died, the thought content is about death of his mother, what should be emotional state while describing this?

Sadness (Hence this is **congruent** affect/mood) If the patient is laughing, giggling while describing about death of his mother then it is called **incongruent mood.**

Inappropriate and Incongruent affect are features of Schizophrenia

Few Other abnormalities

I. **Alexithymia** – Inability to understand emotions of other people and inability to express your own emotions (Sometimes we confuse Alexithymia with affective flattening but in affective flattening the patient does not feel anything i.e. the patient does not have any emotions, whereas in alexithymia the patient does have emotions but he is not able to express them. Sometime we also say alexithymia as lack of words to describe emotions)

II. **Anhedonia** – Inability to feel pleasure in previously pleasurable activities. Things which used to make happy in past no longer is making me happy.
For e.g.: Watching Cricket used to make me happy, going on dates used to make me happy now nothing makes me happy. Anhedonia can be feature of **depression**, can also be seen in **schizophrenia.**

Neuroanatomy

Which part of brain generates the emotions and which part of brain regulates the emotions?

1. **Generation** – **Limbic system** (Hippocampus, amygdala, hypothalamus, cingulate gyrus and related thalamic and cortical areas.)
2. **Regulation/control**- **Frontal lobe**. for e.g.: I remembered a joke in my lecture theatre but I controlled myself and didn't laugh this control was due to Regulatory area by Frontal lobe.

D. Perception (Forth component of Mental Status Examination (MSE))

Large number of psychiatric abnormalities present with **perception abnormality**

What is perception: Any information coming from sensory organs is defined as perception.

Note- We have Auditory perception, Visual perception, Olfactory perception, Gustatory Perception and tactile perception.

Abnormalities of perception:

Patient says:

I see a black pen while looking at a black pen – Normal perception

I see a black umbrella while looking at a black pen – **Abnormal perception** (Falsely perceived a normal stimulus). **This is example of Illusion.**

I see a black umbrella while looking at a nothing – **Abnormal perception** (False Perception in the absence of any object / stimulus) – **This is example of Hallucination**

Q- A man while walking down the lane, he is frightened by snake on road (which was actually a rope), this is known as?

Answer- Illusion

Criterions of Hallucination

1.- Occur in absence of any object / stimulus

2. -Are as vivid (Detailed/clear) as a real perception.

For e.g.: Describing about a person: That person is wearing a white shirt, he was wearing a mic, he was wearing a gray blazer, he was wearing a spectacle. All these details are suggestive of vividity. Similarly, hallucinations are so vivid that the person who is having it is **not able to differentiate between what is hallucination? and what is reality?**

For e.g.: A patient comes in OPD and say I see a man standing next to me, who is 6 feet tall, he is wearing a white shirt, he is wearing a black pant, he is wearing a hat, he is wearing black goggles, he is wearing bow tie→ if he is able to say all these things then it clearly shows the perception is vivid. It is Hallucination (When the person is not actually present there).

For e.g.: A patient comes in OPD and describes a man standing next to him as a dotted face, and he says he can't see anything more, this is suggestive of → Illusion. (In this case whatever I am seeing is not vivid so it's not a case of hallucination.)

3.- Occur in outer and objective space (Anything Outside body)

For e.g.: Hearing voices from outside

If patient say: I can see Deepika Padukone with closed eyes → Saw her inside my mind (Inner and subjective space)→ So this not hallucination

4.- Are not under voluntary willful control

Patient says: Doctor I can hear voices which are not under my control (Cannot start it, cannot stop it) – **Voices start on their own and stop on their own.**

For e.g.: Patient says I can see Deepika Padukone when I close my mind and this ability is under my control. When I open my eyes: she disappears.

If 1st, 2nd and 4th criteria get fulfilled but 3rd criteria is not fulfilled, which means instead of occurring in outer and objective space, the perception is occurring in inner and subjective space→ This is known as Pseudo hallucination.

Q: The patient says: I hear some voices which nobody else hears it, even people sitting next to me are not able to hear it. On taking history he says:

1. Only he is able to hear it → **Criteria 1 is fulfilled (Exception to First criteria: Reflex Hallucination.)**
2. The voices are very clear, voices are of a middle-aged woman, she keeps on talking to me → **Criteria 2 is fulfilled**
3. These voices are coming from my mind→ **Criteria 3 is not fulfilled**
4. I cannot start or stop the voices; the voices come and go on its own→ **Criteria 4 is fulfilled**

Dx: Pseudo hallucination

Pseudo hallucinations: - Inner and Subjective space

→ M/C hallucination – Auditory Hallucination

Psychiatric disorder is classified into two broader classification:

a. Organic Disorders: Disorders in which brain parenchyma is involved like tumors, stroke, delirium, dementia. These are disorders of brain.
b. Functional Disorders: No abnormality is found in brain parenchyma on MRI, CT scan. So, these are disorders of mind. For e.g.: Schizophrenia

Q: Which is the most common hallucination associated with functional disorders: Auditory hallucination.

Q: Which is the most common hallucination associated with organic mental disorders: Visual hallucination.

Q: Olfactory and Gustatory hallucination are typically associated with which lobe: Temporal lobe

Note: In temporal lobe epilepsy all type of hallucinations is seen.

Note: In Schizophrenia all type of hallucinations are seen

Q: **Cocaine intoxication** is associated with **Tactile hallucination**

Specific hallucination

→ **Hypnagogic hallucination**
  - While ''going' to sleep

→ **Hypnopompic hallucination**
  - While getting up from sleep

Both are Features of Narcolepsy

Reflex hallucinations

→ Stimulus in one modality produces hallucinations in another modality (Modality refers to : olfactory, auditory, visual)

→ For e.g.:

Patient says: "Whenever I see a tube light, I start hearing voice of Deepika Padukone"
Stimulus is in Visual modality. Hallucination is in Auditory modality.
Dx: **Reflex Hallucination**
Note: In reflex hallucination we are **not fulfilling the 1st criteria** (Exception to first criteria)

→ This is a morbid variety of synesthesia
→ Seen in **Cannabis and lysergic acid diethyl amide (LSD) intoxication**

Q: A young boy comes to your OPD and says he can hear lights and he can see music, what is the abnormality called as: **Reflex hallucination**

Q: Patient complaints of Criss cross of perception, what is the abnormality: **Reflex hallucination**

Functional hallucination

→ **Stimulus** in **one modality** produces **hallucinations** in **same modality**
→ For e.g.: "Whenever I hear noise of air conditioner, I also start hearing voice of Deepika Padukone" In this case – Stimulus is in auditory modality and hallucination is also in auditory modality.

Note- How is functional hallucination different from illusion?

The patient sees only a black umbrella when he looked at a black pen- **Illusion**
The patient sees both black pen and black umbrella while looking at a black pen -**Functional Hallucination**
"In Illusion the object is itself perceived in wrong manner, in functional hallucination the object is perceived the way it is and along with object you also have a hallucination"

(E) Thought (Cognition) – Most important component of MSE

Q: Cognition is: All the mental process that helps in acquiring information, all of them are put together under broader term Cognition. The term Cognition and thought are often used interchangeably.
What is thought:
Eg:
There is a black board behind my back. Is it a thought or Perception?
Answer- **Thought**
I turn behind towards the board and say: there is black board. Is it a thought or perception?
Answer: **Perception**
India gate is in Delhi, Is it a thought or perception?
Answer: **Thought**
Gateway of India is in Mumbai, Is it a thought or perception?
Answer: **Thought**
Note- **"Thought is something which I know off', Perception is occurring at that point of time.**

Characteristics of thoughts:

1.Stream/flow of thoughts – Speed by which thoughts come to your mind, continuity of thinking

For e.g.:

My name is Praveen Tripathi, I did my MBBS and MD from Delhi, Currently I am working as psychiatrist in Delhi.

What is the stream of Thought: Normal Stream?

Abnormalities of Stream of Thought:

a. **Flight of ideas**- Increased speed of thinking and connection between thoughts appears to be due to chance factors such as rhyming.

- → E.g.: I live in Delhi, my cat has a big belly, I love eating jelly, elly. elllly
- → Usually a feature of mania

b. **Inhibition or slowed thinking**

- → Thoughts come slowly and progresses with a slow rate, it's kind of reverse of flight of ideas. **Seen in depression.**

Apart from these two, other main abnormalities of stream of thoughts are:

1.Circumstantiality

2.Perseveration

3.Thought block

These three abnormalities can be characterized in both stream of thoughts and form of thoughts.

According to Fish's Psychopathology – These three are disorders of stream of thoughts

Later on, psychiatrist named **Nancy Anderson** wrote a landmark article in which she included these three disorders as **form of thoughts**

2. **Form of thought**

→ Refers to the organization of thinking/association between thoughts.

For e.g.: -

Thought 1: - My name is Praveen and I am a doctor

Thought 2: - I live in Delhi.

Thought 1 has got two components. My name is Praveen is component A, And I am a doctor is component B. In this case the thought 1 meaningfully connected to thought B and Thought 1 is meaningfully connected to Thought 2. So this is a well-organized thought i;e Form of thought is normal.

Any abnormality in form of thoughts is known as →**Formal thought disorders**

(Characteristic abnormality in schizophrenia)

Types of Formal Thought Disorder: -

1. Derailment

- Loss of association between successive thoughts.
- For e.g.: My name is Praveen; Beijing is capital of China

2. Loosening of association

- Loss of connection between components of same thought
- For e.g.: My name is Praveen and it is going to be the biggest blockbuster of this year

3. Incoherence (Word Salad)

- Complete loss of organisation so that **no meaning gets conveyed**
- The patient says: My Praveen OK China Bye

4. Circumstantiality

- Thought progresses with inclusion of unnecessary details **but the goal of thought is reached**
- For e.g.:
  In which branch you want to do PG?
  If the answer is -**Medicine**
  This is **normal way of thinking** (Goal of thought is reached immediately)

  If the answer is – "In first year I used to like Anatomy, by the time I reached second year I started liking pathology, in the 3rd year the SR of ophthalmology was very pretty so I also started liking ophthalmology. In the final year I started liking surgery. Now I think after finishing my internship I will do my job, with job I will earn some money, with money I will get married and once I get married, I will use the salary to **buy a seat of Medicine**"
  In this case patient is telling unnecessary details but he finally replies the correct answer.
  This is abnormal way of thinking. (**Finally goal of thought is reached**)

5. Tangentiality

- Thought is related to goal in a distant way, but the goal is never reached.
- Case:
  Psychiatrist- Who is your Favorite actress?
  Patient- Sir, Bollywood is based on Mumbai. Bollywood movies are mostly based on relationship. Hollywood is in Los angels California. Hollywood movies are more action packed. My Uncle also lives in Los Angeles California.
  In this case the thought is related to goal but the goal is never reached.

6. Neologism (Neo means New, Logisim means word)

- The patient creates a new word, whose derivation cannot be understood
- For e.g.: A patient holding pen says its "Tintintapa"
- Amongst formal thought disorder Neologism is specifically related to schizophrenia. (High predictive value)
- Neologism is a rare finding

7. Metonyms (Word approximations)

- Old words are used in unconventional/strange way
- For eg: The patient holding pen says that it is a presentation regulator mechanism.
  In this case patient uses a strange word but still we can understand what he is trying to convey (But if he calls it Tintintapa then it is not understood)

8. Clanging (Clang associations)

- Words are associated with each other as they sound similar and there may be lack of any meaningful Connection
- Eg: - I make sense out of nonsense and nonsense is the essence of turbulence of life. In this case words are all connected because they sound similar, but otherwise they are not connected meaningfully.
- Clang associations are seen in patient with Flight of Ideas.

9. Perseveration

Perseveration can also be classified as disorder of stream of thought.

Repetition of same response beyond point of relevance.

For eg:

Psychiatrist: What is your name?

Patient: Ramesh Singh

Psychiatrist: What is your father's name?

Patient: Ramesh Singh

Psychiatrist: Where do you stay?

Patient: Ramesh Singh

Psychiatrist: Who is President of India?

Patient: Ramesh Singh

In this case the patient is repeating the same response beyond point of relevance

Also suggestive of **organic brain damage (Brain parenchyma)**

10.Thought blocking

Thought blocking can also be described as disorder of stream of thought. There is Sudden arrest of train of thoughts, leaving a blank (No thoughts for a period of time)

3. Content of thought (What are you thinking about)

-Delusions

Q: Delusion is disorder of?

1. Content of thought
2. Form of thought
3. Flow of thought
4. Possession of thought

Answer 1. Content of thought

Delusions are False belief (But all false belief are not delusions)

There are **three steps to diagnose delusions:**

1. False belief
2. Firm, Fixed and unshakeable (belief continues despite evidence against it)
3. Unexplained by social, cultural background

Case:

Patient says: I look better than Ranbir Kapoor (**False belief**)

1.Psychiatrist now bring a mirror and a photograph of Ranbir Kapoor and ask him to compare **(Evidence was given to break the belief)**

2.Patient now says: Yes, I look better than Ranbir Kapoor **(Patient refused the evidence)-Firm, Fixed and unshakeable. Can we call it delusion at this step? NO,** because he might belong to a village where people actually think that the patient is better than Ranbir Kapoor.

3. So, in the third step we check whether the belief of patient can be explained by his background. In third step we go to his village and bring two-three villagers and ask them does the patient looks better than Ranbir Kapoor. If villagers say Ranbir Kapoor is better but the patient denies it, **Now is it a delusion? YES (Unexplained by social, cultural background)**

For eg: Patient comes from tribal area and says: I have developed Tuberculosis because somebody did black magic on me → It is not labelled as delusion (because it is possible that the patient where he belongs to believe in black magic can cause illness) Since it is explained by social and cultural background so it is not a delusion it is considered as Superstition.

→ Types of Delusion

1. Delusion of Persecution

- Most common delusion overall – **Delusion of Persecution**
- Most common delusion in Schizophrenia- **Delusion of Persecution**

– In Delusion of Persecution patient believes that "**Someone wants to harm him**"

For e.g.: Patient says:

- The police are following me
- The intelligence agency is after me
- My neighbors are trying to hatch a conspiracy against me
- My family members want to kill me and take away my property

2. Delusion of reference –

Patient believes that neutral stimuli are somehow related to him/her

For e.g.: Patient says

- Doctor the tube light in your room has a camera fitted which is **recording me.**
- Patient is walking down the road, he sees two people talking and says that they are talking **about me**
- Patient sees someone smiling and says: that she is laughing **at me**

3. **Delusion of grandeur / grandiosity**

Patient believes that he has some special power/ role / identity

For e.g.: Patient says:

- I am so powerful that I can push train with my bare hands.
- I have been sent by God to spread peace and humanity
- I am the reincarnation God

Delusion of grandeur / grandiosity is seen in **Mania and Schizophrenia**.

4. **Delusion of love** (**Erotomania/De Clérambault syndrome/Fantasy lover syndrome**)

For e.g.: Patient believes that Someone from higher socioeconomic class is in love with him/her

Patient – Katrina kaif broke up with Ranbir Kapoor because she is in love with me

Doctor – Have you met her

Patient – No, But I know she loves me

Doctor- How do you know it

Patient- She sends love letter to me

Doctor- Have you received any letters

Patient-No, I haven't received any letter because when she sends letter, Ranbir Kapoor intercept those letters and never allows those letters to reach me but she loves me.

5. **Delusion of infidelity** (**Morbid jealous/Pathological jealousy/Othello syndrome**)

Seen in patient with alcohol dependence

For e.g.: Patient believes that his partner is unfaithful to him/her

Patient says:

- My girlfriend is cheating on me
- My wife is cheating on me
- My husband is cheating on me

6. **Delusion of guilt**

Patient feel guilty and the guilt is at the delusion level.

Even if you try to convince the patient, he doesn't accept it

Case:

Patient came to OPD with history of depression and she also said that she has been a mad mother. But her children denied and said that she was a wonderful mother and all of them are well settled and from past 4-5 months she is saying these things a lot that she is a bad mother.

Diagnosis: Delusion of guilt

Usually seen in patient with **severe depression**

7. **Nihilistic delusion** (**Delusion of Negation/Cotard syndrome**): Patient may deny existence of their body, their mind or world in general.

Term Nihilism means nil

Patient says:

- Things have ended

- Everybody is dead in the world
- The wind has stopped blowing
- Earth has stopped rotating
- All my internal organs are rotten

Usually seen in patient with depression.

8. **Delusion of enormity** – Sometimes the patient with delusion of negation also develops Delusion of enormity, patients believe that their action will cause a Catastrophe.
For e.g.:
Patient says:
    - I cannot urinate, because if I urinate there will be floods all around the world
    - If I sneeze the world will blow away

9. **Delusion of misidentification (Misidentification syndrome)**– Doubt is on the identity of individual
Presented in four ways:

Capgras syndrome (Delusion of Doubles): Patient believes that a familiar person has been replaced by a similar looking stranger

For e.g.: Patient goes back home, he enters his drawing room where his wife is sitting. Wife looks like as she always looked like. Patient does not find any difference in her physical appearance but the patient has a thought this woman sitting in my drawing room looks like my wife is not really my wife, is some other women who has managed somehow to like my wife.

- In this case the patient has history of fight with his wife
- (He asks his wife: Who are you, how did you enter my house, how do you look exactly like my wife, where is my real wife)
- All these are suggestive of Capgras Syndrome.
- Patient of Capgras syndrome **fights with a familiar person/friend/family members.**

Fregoli syndrome: Kind of opposite to what happens to Capgras syndrome, Patient believes that a familiar person is changing his physical appearance and disguising as a stranger and that multiple different appearance can he taken
For e.g.:
Patient has a belief that his wife wants to kill him and he also believes that wife also follows him wherever he goes. Patient believes that whenever he goes out his wife follows him, since he can identify her so she changes her physical appearance while following him (Wife changes her face as a complete stranger while following him so that husband is not able to identify her). Patient also believe that wife not only changes one face rather she can change multiple different appearances.

Patient of Fregoli syndrome **fights with strangers**.

Syndrome of Subjective Doubles: Patient believes that he has many doubles who are living their own separate lives.

For e.g.: The patient believes that there are many persons like me who are living their own life in different cities.

Syndrome of Inter-Metamorphosis: Patient believes that people can undergo changes in both physical and psychological identity and become an entirely different person

For eg:

Individual A – Has face and different psychological identity

He changes his face and psychological identity and converts into Individual B.

Individual B- Has a different face and totally different identity.

Bizarre Vs Non-Bizarre delusions

Bizarre delusion- Scientifically impossible and culturally implausible (Un-understandable)

For e.g.:

Patient says:

Yesterday in the evening, three aliens came from Mars, they stole my heart and replaced it with a chip and went away. This is case of delusion because it is not possible. This is scientifically impossible and un-understandable.

Non-Bizarre delusions – **False but possible**

For e.g.:

Patient says:

My neighbors are planning a conspiracy against me and want to kill me. In this case even if it is established as delusion the belief that the neighbor wants to kill me is possible.

The concept of bizarre and non-bizarre delusions is now no longer used in current classification. Because of lack of objectivity (Bizarre delusion for someone can be Non-Bizarre for a different person)

4. Possession

Normally when we think we have an experience that whatever is going in my mind belongs to me.

- I am in soul possession of my thought.
- External person has no control over my thinking. External person cannot interfere with my thoughts.
- External person doesn't know what I am thinking about.

Abnormalities of Possessions: Patient feels that others can interfere with my thought process/ my thoughts are no longer under my control.

For eg:

Case1:

Patient says: Doctor, something weird is happening with me. I was sitting in my home; I was in my room. I was thinking about cricket and suddenly a very weird thought came into my mind and it was not my thought. My neighbor was using some kind of technology to implant thoughts into my mind.

In this case the patient is experiencing that others are putting thoughts in my mind. This is a disorder of possession of thoughts.

Dx: Thought insertion

Case 2.

Patient says: Doctor, yesterday I was sitting in my room and suddenly my mind went completely blank, I couldn't think of anything because my neighbor was using some technology to steal away my thoughts. He was withdrawing thoughts from my mind and my mind went blank.

Dx: Thought withdrawal

Case 3.

Patient says: Doctor, I was sitting in my home thinking about cricket and then I went outside and what I saw was my wife was standing outside my door with bag a ball in her hand. Doctor she knew what I was thinking about because my thoughts are leaving my head and others can catch them. My thoughts are getting broadcasted.

Dx: Thought broadcast

Together they are called as Thought Alienation Phenomenon.

Another eg of disturbance of thought possession is **Obsessions**. **(In this patient has same thoughts repetitively.)**

Eg is: My Hands are unclean. This thought comes to mind repetitively despite trying to stop it. Since this thought is not under control so obsessions are characterized under disturbance of thought possessions.

According to Fish's Psychopathology: Obsessions are disorder of possession of thoughts.

According to Kaplan & Sadock's Comprehensive Textbook of Psychiatry: Obsessions are disorders of content of thoughts. Kaplan & Sadock's say there are two types of thought disturbances:

Thought content and Thought Process.

Q: Obsessions are disorders of?

1. Flow of Thoughts
2. Form of Thoughts
3. Content of Thoughts
4. Possession of Thoughts

Ans: Possession of Thoughts

The four options suggest that the examiner is following Fish's Psychopathology. (Kaplan and Sadock does not mention about Flow and Possession of Thoughts)

3. **Memory:**

Three different types of memory are tested.

- **Immediate memory/Working memory**: For interval of seconds. Use digit repetition test or serial seven subtraction test.
- **Recent memory**: - For minutes, hours or days. Use 24-hour recall method. For eg : Calorie intake in 24 hrs. (What all did you eat in last 24 hrs.)
- **Remote memory**: - For years, ask both personal information and historical events. For e.g.: Which school did you go to? When did India win the world cup? When did Sachin Tendulkar retire?

Note- Things that happened 30 year back constitutes the remote memory and **in dementia** the **remote memory is lost in the last**

Note- **Recent memory is lost first in dementia.**

4. **Intelligence** – General information and Calculation skills

For e.g.: Name five cities of India? Name three rivers of India? Questions on Calculation skills?

5. **Abstract thinking** –It is the higher level of thinking. It is the ability to form concepts and generalization

For e.g.:

First time on playing video game the character died after touching the red spot

Second time on playing video game the character died after touching the red spot

Third time on playing video game the character jumps after seeing the red spot

In this case the person develops concept that the red spot should be avoided. This is abstract thinking.

How to test Abstract thinking:

1. **Proverb testing**

For e.g.:

Doctor asks meaning of Proverb

Doctor- "Stitch in time saves nine"

If patient says: If you take action at right time, you are able to avoid bad consequences later → **Abstract thinking is present**

2. **Similarities testing**

For e.g.:

Doctor asks:

Doctor- What is the similarities between chair and table

If patient says – Both are pieces of furniture →**Abstract thinking is present**

If patient says -Both are lying on the ground/Both are made of wood → **Abstract thinking absent, This is called as concrete thinking.**

6. **Judgement**- Ability to take right decision according to situation.

   Three different type of judgement are:

   - **Test judgment**

     In this the doctor gives the patient a test scenario and based on his response his judgment is tested.

     For eg :

     Doctor asks

     Doctor: What will you do if you see a person on fire?

     If patient says: Call the fire brigade→ **Test judgement Intact**

     If patient says: I will try to throw water on it if fire is less→ **Test judgement is intact**

     If patient says: I will jump into the fire → **Test judgement is impaired**

   - **Personal judgment-**

     Whether the patient can take right decisions for his life or not.

     For e.g.:

     Patient is admitted in the ward and Doctor asks him:

     Doctor: After going out from hospital, what will you do?

     If patient says: I will try to find a job, I will try to make money for my family and I will come to hospital every month to meet my doctor. → **Personal Judgement Intact**

     If patient says: After my discharge I will find the CBI agent who conspired with the police and got me admitted into the hospital and I will take my revenge with help of America agency → **Personal Judgement not intact**

     Social judgment- It is tested based more on observation rather than questioning. We observe whether the patient is behaving socially appropriate manner with the staff, nurses, doctors.

7. **Insight** –It is defined as awareness of illness.

   For eg : I have diabetes, I go to the doctor take my medicine and I maintain a regular lifestyle when I am aware I have illness → Insight is present

   If he refuses to accept that he has disease (But he actually has)→ Insight is absent

Levels of insight:

- **Grade-1** – Complete denial of illness, for eg: Patient completely refuses his disease
- **Grade-2** – Awareness of being sick but denying at the same time

  For eg:

  Doctor asks: Do you have disease?

  Patient: Yes doctor, sometimes the sleep is problematic but no I am fine
- **Grade-3** – Aware of being sick but attributing symptoms to external or physical factors.

  Doctor: Do you have any illness?

Patient: Yes, I am hearing some voices and I am not able to sleep but it's not an illness, somebody has done black magic on me that's why these illnesses is happening to me.

- **Grade-4** – Intellectual insight -Patient accepts he has illness but he does not change behavior according to it.

  Doctor: Do you have any Schizophrenia?

  Patient: Yes, I have schizophrenia. (But he refuses to go to doctor or take medication). The patient continues to take cannabis despite being told not to do it.
- **Grade-5** – Emotional insight (Highest level of insight)

  Doctor: Do you have any Schizophrenia?

  Patient: Yes, I have schizophrenia. (He visits doctor regularly and take medication)

Oldest way of Classification of Psychiatric Disorder-

Organic Vs Functional Mental Disorders

Organic Mental disorders – Originates from disturbances of brain

-Can be demonstrated-

for e.g.: MRI of patient with history of dementia shows: Grey matter is thinned out; ventricles have become dilated.

Functional Mental disorders – Originates from disturbance from mind

-In functional mental disorder we cannot demonstrate anything in the brain.

For e.g.: In schizophrenia if you do the MRI- It is Normal.

Note- Now we know even so called Functional mental disorders like schizophrenia is also caused by brain (Neurotransmitter level). Findings are seen in advance study like Functional MRI.

Psychoses Vs Neuroses		
	Psychoses	**Neuroses**
Insight	Absent	Present
Delusions/Hallucinations	Present	Absent
Reality testing	Absent	Present

Note- Sometimes in patient with schizophrenia may have insight

Note- Even in patient with depression can refuse to take medication and does not accept that he has problem

Note- Better way of classification is on basis of symptoms.

- For e.g.: If delusion and hallucination is present it is called as Psychosis.
- For e.g.: If delusion and hallucination are absent it is called as Neurosis.

Note- Reality testing means whether the patient is living in a real world or imaginary world created by him based on his own experiences.

For eg: Patient has delusion that he is having hallucination and because of that he start believing that he is a really important person who has made a big scientific discovery and all the

governments of the world are after him and so he has to try to hide in my house→ In this case patient is not living in a real world, he is living in a imaginary world created by him based on delusion and hallucination.

Note- There is overlap between Psychosis and Neurosis

Classifications: -

- ICD-11: International classification of diseases (WHO)
- DSM-5: Diagnostic and statistical manual of mental disorders (American psychiatric association)

WHO → ICD-11 was presented at the world health assembly in May 2019 for adoption by member states and will come into effect on 1 January 2022

Schizophrenia Spectrum & Related Disorders

- Schizophrenia is prototype psychotic disorder

History

1. **Emil Kraepelin** – 1st person to classify psychotic disorders acc. to course of illness

Continuous illness	Episodic illness
- Remain ill for rest of their life	- Recover after illness - No cognitive decline
- Gradual and progressive cognitive decline	
- Chronic and deteriorating - Diagnosis – Dementia praecox (Early onset) ↓ Schizophrenia	- Episodic - Manic depressive psychosis ↓ Bipolar disorder
C/F: Delusions & hallucinations	- Episodes of mania & depression

2. **Eugen Bleuler**- Coined the term 'schizophrenia'.

Proposed fundamental (Primary) symptoms of schizophrenia (4 A's of Bleuler)

1. **A**utistic thinking & behavior (Autism)
- **Fantasy thinking**
- **Delusion of grandeur**
2. **A**mbivalence (Inability to decide)
3. **A**ffect disturbances (Disturbances in emotions)
4. **A**ssociation disturbances (Formal thought disorders)

3. **Kurt Schneider**

– **11 Schneiderian First Rank Symptoms** (SFRS)

Characteristic but not exclusive /Pathognomic of schizophrenia

a. **3 thought phenomenon**

- Thought insertion
- Thought withdrawal
- Thought broadcast

b. **3 made phenomenon**

- Made volition (someone is controlling the actions)
- Made affect (someone is controlling the emotions)
- Made impulse (someone is controlling the impulses)

Concept of '**passivity**- Passivity experiences are those in which patient experiences that his thoughts, emotions, actions or sensations are controlled/influenced by others.

c. **3 auditory hallucinations**

- Voices arguing or discussing about patient (**Third person auditory hallucinations**)
- Voices giving **running commentary** about patient's action, thoughts
- Voices saying thoughts aloud (**Thought echo**)- also known as **Gedankenlautwerden** in German And **Echo de pensées** in French.

d. Delusional perception (Primary delusion): A delusion is attached to a normal perception in an un-understandable manner. E.g. attaching delusion of grandiosity to color of remote which in reality have no connection.

- **It is a disorder of content of thought**

e. Somatic passivity – Patient experiences somatic sensations & blames an ext. agency for the same Eg patient feels tingling sensations in hands and blames another country that they are throwing radio waves at him.

- **Primary delusion:** Direct result of underlying disorder.
- **Secondary delusion:** Develop secondarily to some other symptom. Eg patient developing **delusion of persecution secondary to auditory hallucinations**.

- Epidemiology
- 1. Lifetime prevalence- 1%
- 2. Point prevalence- 0.5-1%
- 3. Incidence rate- 0.15-0.25 per thousand

Prevalence in specific groups

- One parent with schizophrenia	12%
- Both parents with schizophrenia	40%
- Non twin sibling of a patient with Schizophrenia	8%
- Dizygotic twin of patient with schizophrenia	12%
- Monozygotic twin of a patient with schizophrenia	47%

- Age of onset– adolescence & young adulthood, late onset - >45 yrs
- Sex ratio: M: F **1.1:1** (According recent studies) **late onset in females & have better prognosis**
- More prevalent in lower socio-economic status
- More common in singles, divorced rather than married

Body types

a. **Asthenic** (Thin and weak) – more susceptible to schizophrenia
b. Athletic (Muscular)
c. **Pyknic** (Short & fat) – more susceptible to develop bipolar disorder

Etiology & Pathogenesis

1.Neurotransmitter hypothesis

- Dopamine hypothesis – excessive levels of dopamine leads to schizophrenia
- Dopamine and serotonin hypothesis – excessive levels of dopamine & serotonin leads to schizophrenia
- GABA, glutamate, ACh, NE are also implicated.

2. Genetic factors

- Higher monozygotic concordance rate than dizygotic concordance rate
- Increased risk in family members of patients, and even family members of patients with bipolar disorder
- **DiGeorge syndrome (22q11.2 deletion, velocardiofacial syndrome)**: 30% have schizophrenia when reaches adulthood
- Candidate genes- **DISC 1** (Disrupted in schizophrenia), **COMT** (Catechol-o-methyl transferase)

3. Neuropathological factors

Cerebral ventricles- Reduction in cortical grey matter volume and enlargement of ventricles (Lateral and third)

Limbic system - Structural (Smaller size) and functional abnormality in hippo campus and amygdala

Abnormalities in prefrontal cortex, thalamus, basal ganglia and cerebellum.

4. Environmental factors-

- Obstetric complications and developmental complications
- Stressful life events- Childhood trauma, stressful life events as precipitating factors
- Birth in winters and early spring, prenatal exposure to influenza virus and malnutrition
- Advanced paternal age
- Immigrants (Especially second generation)
- Drug abuse- cannabis
- Urban birth and upbringing

Symptoms

A. Positive symptoms (Or psychotic symptoms)

- Delusions- M/C is **delusion of persecution**
- Hallucinations-**M/C** is **auditory hallucinations, 2nd M/C** is visual. If visual hallucinations are present, rule out organic brain disorder.
- Both these positive symptoms respond well to medications- hallucinations are first to respond to respond to medication.
- Good prognostic factor
- Dopamine excess in mesolimbic tract (Ventral tegmental area to nucleus accumbens) leads to positive symptoms.

B. Negative symptoms

- Avolition: Loss of drive for goal directed activities
- Apathy: Lack of concern
- Anhedonia: Lack of pleasure in previously pleasurable activities
- Asociality: Lack of social interaction
- Affective flattening (Or emotional blunting)
- Alogia: Decreased verbal communication
- **Respond poorly to medications**
- Poor prognostic factor
    - Decreased dopamine in mesocortical tract (Ventral tegmental area to prefrontal cortex)

C. Disorganization symptoms

- **Disorganized behavior** (Odd & socially inappropriate behavior)
- **Disorganized speech and thinking** (Formal Thought Disorder)
- **Inappropriate affect**

D. Motor symptoms (Catatonic symptoms/symptoms of conation)

- Coined by 'Karl Kahlbaum'
- **Stupor**: Immobility (Hypoactivity) and minimal responsiveness
- **Excitement**: Is non goal directed
- **Posturing**: Maintenance of a posture for long period of time
- **Catalepsy**
- **Waxy flexibility**: During passive movement patient appears as flexible as wax candle
- **Automatic obedience**: Extreme cooperativeness despite unpleasant consequences
- **Negativism**: Purposeless refusal to follow the commands
- **Echolalia**: Repetition of speech

- **Echopraxia**: Repition of behaviour
- **Grimacing**: Maintenance of odd facial expressions
- **Gagenhalten**– Resistance offered by patient, equal and opposite to force applied
- **Ambitendency**: Inability to decide motor movements
- **Stereotypy**: Spontaneous, repetition of odd purposeless movements
- **Mannerisms**: Spontaneous repetition of semi-purposeful movements done in an exaggerated manner
- **Perseveration**: Induced movement, repeated beyond point of relevance. It is suggestive of organic brain disorder

There are two types of perseveration–

- **Logoclonia**– Last syllable of last word is repeated. E.g. Today is tuesday-ay-ay-ay
- **Palilalia**– Patients repeats perseverated word with increasing frequency.

E. Suicide and violence

- 10% (DSM-5: 5-6%, 20% attempt)
- M/C cause of premature & unnatural death
- Risk factors:

– Presence of a major depressive episode
– Increased symptoms (Command hallucinations, delusion of persecution)
– Early in course of illness, immediately after admission or discharge
– Young males, comorbid substance abuse, unemployed
– At times paradoxical (Fewer negative symptoms, less affect disturbances)

Diagnosis

Acc to DSM-5

- Delusions
- Hallucinations
- Disorganised speech (or FTD)
- Disorganized or catatonic behaviour
- Negative symptoms

2 out of these 5, at least 1 out of the first 3, present for **1 month**
Duration of illness– At least **6 months**
ICD-11: At least **1-month duration**
DSM-4: Significance of bizarre delusion, or auditory hallucination (SFRS type)

Types of Schizophrenia (ICD-10)

1.Paranoid schizophrenia

- Predominant **positive** symptoms
- **Most common**

- Late onset
- **Good prognosis**
- **Personality preserved** (Daily activities & social interaction are normal)

2.Catatonic schizophrenia

- Motor symptoms
- **Best prognosis**
- First line treatment: I.V. lorazepam & electroconvulsive therapy

3.Hebephrenic (Disorganized) schizophrenia

- Disorganization & **negative** symptoms
- Early onset
- **Bad prognosis**
- **Severe deterioration of personality** (Basic hygiene, basic social interaction disturbed)

4.Simple schizophrenia

- Prominent **negative** symptoms
- Lack of positive symptoms
- **Worst prognosis**

5.Residual schizophrenia

- State with minimum delusions/hallucinations
- **Mostly negative symptoms**

Post schizophrenic depression: Increased risk of suicide

Both DSM-5 & ICD-11 have removed these symptom-based types
Instead, both have used course specifiers

- **ICD-11 types:**

- Schizophrenia, first episode
- Schizophrenia, multiple episodes
- Schizophrenia continuous (>1 yr.)

- **ICD-11, Catatonia, a separate diagnosis**

- Catatonia associated with a mental disorder
- Catatonia induced by use of psychoactive substances and medications

Rx **1st line drugs** → Anti psychotics except for catatonic Schizophrenia

Antipsychotics/ Neuroleptics

Typical / FGA / DRA

Atypical / S.G.A / SDA

FGA – First generation antipsychotics SGA – Second generation antipsychotics

DRA – Dopamine receptor antagonist SDA – Serotonin dopamine antagonist

Miscellaneous points: TJ crow classified schizophrenia into two types

Most pt. have mixture of both

	Type I Prominent +ve symptoms	**Type II** Prominent –ve symptoms
Onset & neuroleptic response	Acute good response	Gradual Poor Response
Etiology	Dopamine over activities	Structural changes (Enlarged cerebral ventricles)

Miscellaneous points

- **Pfropf schizophrenia** – Schizophrenia in a patient with mental retardation
- **Van Gogh syndrome** – Self mutilation in a patient with schizophrenia.
- Substances – Amphetamines, cocaine, phencyclidine, other hallucinogens, cannabis.

Treatment

- Antipsychotics (Neuroleptics)
- Duration of treatment

First episode – 1 to 2 years (2 years)

Multiple episodes – 5 year or more

	Typical or First generation antipsychotic	Atypical or Second generation antipsychotic
Mechanism	D2 antagonism	D2 and 5HT2 antagonism
Effective against	Positive symptoms	Positive and negative symptoms
Extrapyramidal side effects & hyperprolactinemia	More	Less
Metabolic side effect	Less	More

Typical antipsychotics (FGA) first generation antipsychotics/dopamine receptor antagonists –

- **Phenothiazines** – Chlorpromazine, trifluoperazine, thioridazine, prochlorperazine, triflupromazine, fluphenazine, perphenazine
- **Thioxanthenes** – Thiothixene, flupenthixol
- **Butyrophenones** – Haloperidol, droperidol, penfluridol
- **Miscellaneous** – Pimozide, loxapine, molindone
- **Low potency** (Chlorpromazine, thioridazine)
- **High potency** – Haloperidol, fluphenazine

Side effects

A. Movement disorders

- Extrapyramidal side effects
- Blockade of nigrostriatal tract (Neural pathway from substantial nigra to striatum)
- Typical> atypical
- High potency> low potency
- Parenteral administration> oral administration

1. Drug induced parkinsonism

- Tremors (3-6 Hz)
- Rigidity
- Bradykinesia
- Treatment-Use of anticholinergics (E.g. trihexyphenidyl, diphenhydramine etc)
- Shift to SGA (Second generation antipsychotics)

2. Acute dystonia

- Earliest side effect
- Seen in Young male
- Trismus, torticollis, oculogyric crisis, laryngeal dystonia
- Treatment-Parenteral anticholinergics
- Prophylaxis with anticholinergics

3. Acute akathisia

- Most common
- Inner sense of restlessness & objective signs such as fidgeting of legs, pacing around, inability to sit or stand for long
- Treatment-Beta blockers like propranolol (DOC)
- Anticholinergics, benzodiazepines can also be used.

4. Tardive dyskinesia

- The term Tardive means long term and dyskinesia means abnormal movements.
- Involuntary movements of jaw (Chewing movements), lips (Puckering, smacking), tongue (protrusion, twisting), or extremities
- Patients may present with choreiform (Rapid, jerky, nonrepetitive) or athetoid movements (Slow, continuous or and sinuous)
- Rabbit syndrome (Rhythmic motions of the mouth along a vertical plane, without involvement of the tongue)
- Sustained D2 blockade resulting in hypersensitivity
- Treatment-Shift to second generation antipsychotics
- Use of Valbenazine, Tetrabenazine (Dopamine Depleters)

5. Neuroleptic malignant syndrome

- Fever
- Rigidity
- Increase CPK (Creatine phosphokinase levels)
- Autonomic disturbances
- Diaphoresis
- Altered consciousness
- Tremors
- Leukocytosis
- Liver enzymes elevation

Pathophysiology: D2 blockade

- Corpus striatum- Muscle rigidity
- Hypothalamus: Thermoregulation disturbed- Fever
- Spinal neurons- Autonomic disturbances
- Increase CPK levels due to muscle rigidity
- Myoglobinuria, renal failure

Treatment

- Withdraw antipsychotic, hydration
- DOC- Dantrolene
- Dopamine agonists- amantadine, bromocriptine
- Restarting of antipsychotics : Keep the patient antipsychotic free for 2 weeks then start with second generation antipsychotics.

B. Endocrine side effects

- Hyperprolactinemia due to Tubuloinfundibular tract involvement
- Galactorrhea, menstrual disturbances in females
- Sexual dysfunction, low libido in males

C. Sedation, anticholinergic side effects (Dry mouth), orthostatic hypotension (Blockade of alpha-adrenergic receptors)- more so with low potency drugs

Atypical antipsychotics

- Serotonin dopamine antagonists
- Both **D2** and **5HT-2 blockade**
- **Clozapine, olanzapine**
- Risperidone, paliperidone, iloperidone
- Quetiapine, ziprasidone, aripiprazole
- Sertindole, zotepine, lurasidone
- Asenapine, amisulpride
- Brexpiprazole, cariprazine, pimavanserin (Newer ones)

Side effects

A. Movement disorders

B. Endocrine side effects

- Lesser chances
- Except risperidone and Amisulpride

C. Metabolic side effects

D. Sedation, QTc prolongation & seizures

Clozapine

- DOC for TRS (Treatment resistant schizophrenia)
- Treatment resistant schizophrenia: Lack of response to 2 antipsychotics (At least 1 atypical) adequate dose, 4-6 weeks
- More affinity for D4 receptors, less affinity for D2
- Hence, minimum EPS
- Antipsychotic with **max weight gain**
- **Only antipsychotic with antisuicide property**

Side effects

- **Three life threatening side effects**
  - Agranulocytosis
  - Myocarditis
  - Seizures (Dose dependent)
- Sedation- M/C side effect
- Sialorrhea
- Syncope, hypotension, tachycardia, nausea, vomiting
- Weight gain, anticholinergic side effects

Clozapine monitoring

- TLC and ANC

- Once a week for first 6 months
- Once in two weeks for next 6 months
- Once a month till patient continues

If WBC falls below 3000/dL or ANC falls below 1500/dL, stop

Contraindications for clozapine use

- WBC less than 3500/dL
- History of agranulocytosis on clozapine
- Use of other bone marrow suppressants such as carbamazepine

Miscellaneous points

1. Long acting injectable antipsychotics (Depot antipsychotics)

- Poor compliance
- Intramuscular injection (Z track technique)

- To prevent the drug to leak into the subcutaneous tissue
- Pull the skin and tissue before giving injection and than release it
- Makes a zig zag track and prevents leakage
- Flupenthixol, fluphenazine, haloperidol
- Pipotiazine, zuclopenthixol
- Risperidone, paliperidone, olanzapine, aripiprazole

2. **Thioridazine**- Side effects
   - Irreversible retinal pigmentation
   - Cardiac arrhythmias (QTc prolongation)
   - Minimum EPS amongst typical
3. **Chlorpromazine**- side effects
   - Corneal & lenticular deposits
4. **Penfluridol**
   - Longest acting antipsychotic (t1/2 - 66 hours)
5. **Ziprasidone**- Cardiac arrhythmias (QTc prolongation)
6. **Aripiprazole**- Partial agonist at D2 receptors (Also Brexpiprazole, Cariprazine)

Psychosocial treatment

(FAST supreme court)

- **F**amily interventions (Managing expressed emotions)
- **A**ssertive community treatment- reaching out in community
- **S**upported employment
- **T**oken economy
- **S**kills training
- **C**ognitive behvioral therapy
- Cognitive remediation therapy (Or cognitive enhancement therapy)- for concentration, working memory etc

Prognosis

Good Prognosis	Bad Prognosis
Acute onset (<2 weeks)	Insidious onset
Advanced age at onset (>35 year)	Early onset (<20 year)
Catatonic, paranoid subtype	Simple, disorganized, hebephrenic
Female Sex	Male Sex
Prominent Positive Symptom	Prominent Negative symptom
Presence of affective symptom	Absence of affective symptoms
Family H/O mood disorder	Family H/O Schizophrenia

Other Psychotic Disorders

A. Acute psychotic disorders

Characteristics-

- Symptoms similar to schizophrenia (Delusions, hall, disorganisation)
- Acute onset
- Often preceded by stressor (Fever is a common stressor)
- Often resolve completely
- Do not meet the duration criterion of schizophrenia
- **ICD-11**
    - < 1 month- Acute & transient psychotic disorder
- **DSM-5**
    - < 1 month- Brief psychotic disorder
    - Between 1-6 months - Schizophreniform disorder
- Rx- Antipsychotics/benzodiazepines

B. Schizoaffective disorder

- Symptoms of both Schizophrenia & a Mood disorder

Schizoaffective disorder (Bipolar type or manic type)- Use combination of antipsychotics and mood stabilizers

Schizoaffective disorder (Depressive type)- Use combination of antipsychotics and antidepressants

C. Delusional disorder

- Single or set of related delusions
- **Hallucinations** : Usually absent

  - If hallucinations are present, they have Same content as of delusion
- Apart from the direct impact of delusions, the functioning is not markedly impaired

Types

- Persecutory
- Jealousy
- Erotomaniac
- Grandiose
- Delusion of Misidentification
- Somatic:

-**Delusional parasitosis** **(Ekbom syndrome)**- Patient believes that they are infested with insects. - Match Box sign present

-**Delusional dysmorphophobia**- Delusion about body appearance

-**Delusional halitosis**- Patient believes that bad odor is coming from his mouth

Risk factors for delusional disorders

- Advanced age
- Social isolation

- Sensory isolation
- Recent immigration
- Family history of delusional disorder
- Certain personality features (E.g. excessive interpersonal sensitivity)

- Rx- Antipsychotics

Shared delusional disorder (Induced delusional disorder)

- Primary case- Influential -Give antipsychotics
- Secondary case- Suggestible- Separate from the primary case
- Social isolation
- **Folie a Deux**- Two people involved
- **Folie a Trois** -Three people involved
- **Folie a Quatre** – Four people involved

Mood Disorders

Depression

Epidemiology – **2nd Most Prevalent** Psychiatric disorder acc to WHO survey

(Most prevalent psychiatric disorder – Specific phobias)

- Acc to NIMHANS 2016 Data – **M/C psychiatric disorder in India** (Excluding tobacco use disorders)
- Prevalence rate: Varies from 5-17% (Average- 12%)
- Female: Male = 2 : 1
- Onset usually (In middle years of age) 40 years.
- **M/C in single / separated / divorced persons**
- **DALY** (Disability adjusted life years) among psychiatric disorders is maximum lost in depression – (Overall it is the 2nd leading cause) .
- **Most common cause of suicide**

Symptoms – **(SIGECAPSS)**

S – Sadness of mood/ depressed mood (Persistent & pervasive)

I – Loss of interest / pleasure (Anhedonia)

G – Guilt/ Feeling of worthlessness

E – Energy (Loss)/ Fatigue

C- Concentration loss, cognition (Negative thoughts)

A – Appetite (Loss/ gain) with significant weight changes (>5% change in 1 month)

P – Psychomotor Agitation/ Retardation

S – Suicidal thoughts

Note: Suicidal thoughts are further classified into 3:

1. Death wishes (Patient feels death should come to me) → **GRADE 1**
2. Suicidal wish (Patient says I wish I could commit suicide) → **GRADE 2**
3. Suicidal intent (Patient says I would be killing myself) → **GRADE 3**

S – Sleep abnormalities (Decreased/ Increased)

- Early morning insomnia (Getting up >2 hrs. earlier than the usual waking time)
- Reduced latency of REM sleep

  Sleep is usually decreased but it might be increased also.

Criteria for defining depression (According to DSM – 5) :

From the above **9** symptoms **5** must be present & at least **1** must be present out of first **2** for atleast **2 weeks** duration.

Specifiers

- Depression with Psychotic features i.e. Delusion/ hallucination
- Mood – congruent / incongruent- Congruency means whether thoughts of patient are matching with contents of delusion, hallucinations eg a poor person thinking that the world will end soon.
- Psychotic depression

Atypical depression

- Reversal of biological features (Increased appetite, weight, sleep)
- Mood reactivity present (Mood improves with +ve events)
- Leaden paralysis (Subjective feeling of heaviness of limbs and difficulty in moving them)
- Extreme sensitivity to interpersonal rejection (Atypical paralysis)

Treatment

SSRI, MAO inhibitors are better than TCA in these patients

- **With melancholic features**

  (Involutional melancholia)

  - Significant biological symptoms – (Significant Anorexia, wt. loss, early morning awakening)
  - Lack of mood reactivity & Anhedonia
  - Depression is worse in morning, distinct quality of mood (Feeling of misery)
  - Excessive guilt & marked agitation & retardation.
  - Increases suicidal risk
- **With catatonic features**

➢ **Endogenous depression** (No clean-cut stressor)

➢ **Exogenous depression/ Reactive depression** (Stress present)

Physical signs

- **Veraguth fold** – Triangular fold on nasal side of upper eyelid
- **Omega sign** – Omega shape fold on forehead above root of nose

Etiology

Multifactorial causes

1. **Neurotransmitter disturbances**
   a. Serotonin (M/C deficiency)
   b. NE & dopamine deficiency
2. **Hormonal disturbances** – HPA axis overactivity (50%) cases
   → Cortisol hypersecretion (Urinary, saliva or plasma cortisol levels)
   → Dexamethasone suppression test (More definitive)- high potency glucocorticoid not able to suppress ACTH,CRH and cortisol surge next day
3. **Hypo / Hyperthyroidism**
4. **Neuroanatomical considerations**
   → Decreased activity in dorsolateral prefrontal cortex
   → Increased activity in amygdala.
5. **Genetic factors**
   → Polymorphism in serotonin transporter gene
   → Promoter region has 2 variants, s(Short) & l(Long) allele

Psychological Theory

- **Cognitive theory** –By **Aaron beck**. He said that patients with depression have a lot of negative thoughts which are responsible for maintaining the depression further
- **BECKS COGNITIVE TRIAD**–.
    - **Negative view of self** (Ideas of worthlessness)
    - **Negative view of environment/others** (Ideas of helplessness)
    - **Negative view of future** (Ideas of hopelessness)

Out of the three,3rd **one is most important** because it is **associated with more cases of suicide.**

- **Theory of learned helplessness** → Due to repetitive adverse events patient believes that he has no control over events and thus loses the motivation to act

Drugs that cause depression as side effect–

- Antihypertensives like Reserpine, Methyl dopa, Beta blockers.
- Steroids (OCPs & corticosteroids) – Progesterone > > Estrogen
- Interferons
- Barbiturates
- BZD

Treatment

Pharmacotherapy

- Onset of action → 3 to 4 weeks
- Drugs are chosen on basis of S/E profile
- Duration of treatment–At least 6 months / duration of last episode.

Prophylactic t/t →Indications

- 3 or more episodes
- Chronic depression : Depressive symptoms contuining for more than 2 years.
- Reduces number & severity

(A) TCA's (Tricyclic, tetracyclic antidepressants) – MOA: - Block serotonin & Norepinephrine transporters

- **S/E** – Muscarinic (Anticholinergic side effects)
    - Adrenergic (α_1, α_2 block) leads to hypotension
    - Histamine (H_1 block) leads to sedation
    - Cardiac Na^+ channels block – causing arrhythmias

Eg

- **Imipramine, desipramine, trimipramine**
- **Amitriptyline, nortriptyline, protriptyline**
- **Amoxapine, doxepin, maprotiline, clomipramine**
- **Clomipramine** → Most serotonin selective
- **Desipramine** → Most Norepinephrine selective

TCA toxicity

- **CVS** – Postural hypotension (Hypertension can rarely be present), Tachycardia, Chest pain
- **CNS** – Altered sensorium, Respiratory depression, Convulsions
- **ANS** – Anticholinergic side effects i. e. constipation, dry mouth, blurred vision, urinary retention, decreased seating and delirium. Therefore, glaucoma and BPH patients should not be prescribed these drugs.
- **Alpha blockade**- Postural hypotension (Rarely hypertension may be present)
- **Metabolic acidosis** - Tissue hypoxia
- **H1 blockade**: Sedation & weight gain
- **Hyperprolactinemia** (Amenorrhea, Gynaecomastia, Galactorrhea, Impotence) mostly with amoxapine due to D2 blockade .
- **ECG changes** – Prolonged PR, QRS & QT interval, AV block, Right Axis deviation
  QRS > 100m/s (Alkalization using i/v $NaHCO_3$)
  - **Mainstay of treatment**
  - **Gastric lavage, only helpful in cases of immediate administration**

(B) SSRI (M/C used) MOA – Block serotonin reuptake)

- 1st line for depression & also for most of anxiety disorders

- eg. Fluoxetine, Fluvoxamine, Citalopram, Escitalopram, Sertraline, Paroxetine & Velazodone.

S/E

1. **GI** – Nausea (M/C), diarrhea,constipation (Most with paroxetine), anorexia
2. **Sexual dysfunction** – M/C long term S/E it includes- decreased libido,poor erection, delayed ejaculation
3. **QT_c prolongation**
4. **CNS** – Vivid dreams, sweating, anxiety, insomnia, sedation, seizures, emotional blunting, extrapyramidal side effects.
5. **Anticholinergic S/E** – Constipation **(Paroxetine)**
6. **Hematological** – Inhibition of platelet aggregation
7. **Wt. gain**
8. **Hyponatremia**

- **Vortioxetine** →
- (Inhibits serotonin uptake)
- Agonism at $5HT_1A$,
- Partial agonism at $5HT_1B$
- Antagonism at $5HT_3$, $5HT_{1D}$ & $5HT_7$ receptors

Serotonin syndrome

- Excess plasma concentration of serotonin
- Manifested when SSRI are given with MAOI, tryptophan, lithium
- Life threatening
- Diarrhea
- Hyperreflexia, myoclonus, rigidity, increase temperature
- Seizure, delirium, coma death
- **Rx -Cyproheptadine, Supportive care**

(C) Serotonin Norepinephrine Reuptake Inhibitors /SNRI's → **Venlafaxine**, Duloxetine, Milnaciprin, Levo-milnacipran – Blocks both Serotonin, Norepinephrine Reuptake

- Better results in severe depression
- S/E – Hypertension & Anticholinergic S/E

Discontinuation syndrome - On sudden stoppage of antidepressants

(FINISH)

F – Flu like symptoms (Fatigue, aches, etc)

I – Insomnia

N – Nausea

I – Imbalance (Vertigo)

S – Sensory disturbances (Paresthesia)

H – Hyperarousal (Anxiety, Irritability)

- **Discontinuation syndrome is most commonly assosciated with Vanlafexine**
- **Paroxetine, Fluvoxamine**

(D) . Monoamine oxidase inhibitors (MAOI's)→ - MAO-A & MAO-B

Nonselective MAO inhibitors

- Phenelzine
- Tranylcypromine
- Isocarboxazid

S/E: Cheese Rxn

(Seen when patients on MAO inhibitors takes food items with high amount of tyramine eg. cheese)

↓

Hypertensive crisis

↓

Give phentolamine in crisis

(E) Atypical antidepressants

- **Trazodone & Nefazodone**

SARI (5HT2A & 5HT2C = **S**erotonin **a**ntagonism and **r**euptake **i**nhibitors)

Trazodone – Side effects- priapism

Mirtazapine – NSSA (Noradrenergic & specific serotonergic antidepressant)

- Central α_2 antagonism (increase NE and serotonin firing)
- Antagonism of $5HT_2$ & $5HT_3$ receptors
- Sedation, wt. gain, vivid dreams
- Minimal sexual Side effects

Bupropion – NDRI (Norepinephrine dopamine reuptake inhibitors)

- Minimal risk of wt. gain, sexual S/E or sedation
- Insomnia, restlessness
- Seizures
- Smoking cessation

Tianeptive & Amineptive

- Serotonin reuptake enhancers

Antipsychotics → Used in depression with antipsychotic features

Ketamine – I/V infusion at subanesthetic doses

- Rapid relief in depressive symptoms in treatment of refractory pts
- Rapid relief in suicidal ideation
- Durability, a question
- In 2019, FDA approved nasal spray of **Esketamine**
  - TRD (Treatment Resistant Depression) patients,
  - Given with oral antidepressants,
  - Self-administered at doctor's office
- **Suicidality and antidepressant drugs**-
  - FDA has issued **black box warning** for increased suicidal thinking and behavior in children and adolescents and later young adults (Under 25 years)
  - Recent studies have found that suicidal thoughts and behavior are decreased over time for adult and geriatric population
  - No difference found in youth
  - Concept of paradoxical suicide- It states that in patient taking antidepressants initially there is increased risk of suicide so monitoring for few days and weekly monitoring is done

(II) Psychotherapy

A) Cognitive behavioral therapy (Thoughts)– based on thinking pattern It works on removing-
   a. **Negative automatic thoughts**
   b. **Cognitive distortions- faulty way of thinking which stays with patient**

B) Interpersonal therapy

C) Behavioral therapy, family therapy, psychoanalytically oriented therapy

(III) Other somatic treatments

A) **ECT** (Electroconvulsive therapy)– It is indicated in-
   - **Depression with suicide risk**
   - **Depression with stupor**
   - **Psychotic depression, treatment refractoriness**

B) Repetitive Transcranial magnetic stimulation : Non convulsive, no anesthesia

C) Vagal Nerve stimulation

D) Deep brain stimulation

E) Sleep deprivation

F) Phototherapy – Used in depression with seasonal pattern

Usual t/t – SSRI + CBT

- Recurrent depressive disorder (More than 1 episode of depression)
- **Dysthymia (Symptoms of depression are present but are not severe enough to cause socioоccupational disturbance with duration of more than 2 years)**
- Chronic depression (Full-fledged depressive symptoms for more than 2 years)
- Persistent depressive disorder
- Double depression- Depressive episode superimposed on dysthymia

Bipolar disorder

- Life time prevalence = 1%
- Males: Female = 1.1 : 1
- ICD – 11 classifies bipolar disorder in two types-
- Bipolar I → Mania + depression
- Bipolar II → Hypomania + depression
- **Mean age of onset**
    - Bipolar I – 18 yrs
    - Bipolar II – mid 20s

Symptoms

Mania (My Asia FAST GDP)

1. **M**ood elevation
2. **A**ctivity levels Increased
3. **F**light of ideas
4. **A**bnormal increase levels of activity / energy
5. **S**leep decreased (Need for sleep is also decreased)
6. **T**alkativeness (Overtalkativeness)
7. **G**randiose ideas and increased self esteem
8. **D**istractibility
9. **P**ainful consequences (Involvement in such activities)

-**5/9** and both **1 & 2 symptom required**

Duration criterion: **At least 7 days**

- Psychotic symptoms: Mood congruent/incongruent

Hypomania

- Symptoms similar but not severe enough
- Don't cause marked impairment
- Duration criteria- **4 days at least**

Mixed episode – Both mania & depression X **7 Days**

Rapid cycling – **≥ 4 episodes in one year** (With 2 months normally in between)

Bipolar etiology

- Neurotransmitters (Increase levels of serotonin, dopamine)
- Genetic causes (18q & 22q & 21q)

Rx of bipolar – (Depends upon phase patient has come now)

1. Acute mania / mixed episode

   a. Mood stabilizer (Lithium, valproate, carbamazepine, Oxcarbazepine, Lamotrigine, Atypical antipsychotics)
   b. Antipsychotics
   c. BZD

- Severe mania/ mixed – use combination
- Less severe – only mood stabilizers or only antipsychotics
- Mixed – valproate >> Lithium
- **Psychotic symptoms- antipsychotics**
- D.O.C acute mania → Antipsychotic
- D.O.C severe mania → Antipsychotic
- In pregnancy - Prefer antipsychotics

 # valproate is most teratogenic (Can cause **NTD**-neural tube defects)

Lithium can cause Ebstein's anomaly

2. Acute depression

- Mood stabilizer → (Lithium, lamotrigine), – have better effect in manic symptoms compared to depressive symptoms except lamotrigine. Lithium has anti suicide property
- Olanzapine + fluoxetine
- Quetiapine
- Mood stabilizer + antidepressants
- Lurasidone
- **Antidepressant mono therapy is avoided as it can cause manic switch.**
- ECT

3. Maintenance

- Lithium / valproate given on maintenance therapy
- Indications- 2/more episode or a single mania episode with significant risk
- Continue for at least 2 yrs
- Role of psychoeducation is also beneficial

Lithium

- 1st used by John Cade
- Monovalent cation
- Rapid & complete absorption after oral intake
- T1/2- initially 1.3 days, later 2.4 days (>1 yr)
- Don't get metabolized
- Excretion by kidney
- Don't bind to plasma protein.

Indications

1. Acute manic episode
2. Bipolar depression
3. Maintenance treatment- it reduces severity, frequency and duration of both manic and depressive episodes
4. Antisuicide property
5. Schizoaffective disorder
6. Major depressive disorder
7. Neutropenia
8. OCD
9. Headache (Cluster headache, migraine)
10. Ulcerative colitis

Correlates of lithium responsiveness

- Euphoric mania (For dysphoric mania valproate is a better drug)
- MDI (Mania Depression Interval) sequence
- ≤ 3 episodes
- No rapid cycling (For rapid cyclers DOC is valproate)
- Family history of bipolar disorder
- Absence of comorbidities like substance use

TDM (Therapeutic drug monitoring)- is required for lithium as it has narrow therapeutic index

- **Acute mania** → 1.0- 1.5 mEq/dL
- **Maintenance treatment** → 0.6 – 1.2 mEq/dL
- **Toxicity** >1.5 mEq/dL

S/E –

A) **Neurological**
   - → Postural tremors (DOC-β- Blockers)
   - → Lack of spontaneity
   - → ↑ ICT (Rare) and peripheral neuropathy

B) **Endocrine**
   - → **Hypothyroidism**
   - → Rarely hyperthyroidism, hyperparathyroidism

C) **Renal**
   - → M/C is **polyuria**
   - → May progress to diabetes insipidus **(Treated with-thiazide diuretics, potassium sparing diuretics like amiloride, triamterene or spironolactone)**
   - → Nephrotic syndromes; RTA (Renal Tubular Acidosis), Interstitial fibrosis

D) **Dermatological**- Acne, rashes, worsen psoriasis, hair loss

E) **Nausea, vomiting, wt. gain**

F) **Teratogenic** S/E (Lithium - Ebstein anomaly, ASD, VSD)

G) **Lithium toxicity**

- Dehydration, low sodium diet, renal impairment- precipitates lithium toxicity
- **Narrow** TI **(>1.5 mEq/dL)**
- **GI symptoms- Abdominal pain, vomiting**
- **CNS:**

  *Coarse tremors, ataxia, dysarthria

  *Muscle fasciculations, **increased DTR**, convulsions, impaired consciousness, death

Management:

1. Stop LITHIUM
2. Correct dehydration
3. Use of sodium polystyrene sulfonate or polyethylene glycol (To remove unabsorbed lithium from GI)
4. Hemodialysis (In severe cases)

Pregnancy & mood stabilizers

- Pregnancy increases risk of relapse of bipolar disorder
- Leads to adverse impact on mother & child
- Don't stop mood stabilizers abruptly
- Li^+→if continued during pregnancy is monitored by-
  - High resolution USG & ECHO – 6th & 18th week as chances of lithium toxicity is high.

- Valproate, carbamazepine should be avoided in pregnancy as these are teratogenic
- Lamotrigine safer than valproate and CBZ
- Antipsychotics - safer and preferred for manic episode

PMDD (Premenstrual Dysphoric Disorder)

- **New** in **DSM-5** and **ICD-11**
  - Symptom onset is 1 week before menses;
  - Resolves within 1 week after menses stop
  - Irritability, mood lability, depressive mood, anxiety symptoms
  - Lethargy, oedema, breast tenderness, weight gain, sleep & appetite changes
  - Socio occupational dysfunction should be present
  - **T/t** – Symptomatic, analgesics, diuretics, SSRI & BZD

PMS(Premenstrual syndrome)-

- Milder variant of PMDD

Psychiatric aspects of pregnancy

Postpartum blues

- Baby blues
- Experienced by 30-75% of female
- Transient symptoms like tearfulness; sadness, mood lability, sleep disturbances

- Onset 3-5 days
- Lasts for days to weeks
- Support to mother is enough

Postpartum depression

- DSM- 5: Depressive episode with peripartum onset
- More severe
- 10-15%
- In 3 months of delivery
- **Sadness, tearfulness, lability, sleep disturbances**
- **Anhedonia**,Suicidal thoughts /thought of harming baby/guilt
- **History of mood disorder,** Family h/o mood disorders
- Increased risk of future depressive episodes
- Treatment-Pharmacotherapy and psychotherapy
- **In 2019**, FDA approved **Brexanolone** (Continuous i.v. infusion for 60 hours)- it is similar to endogenous **allopregnanolone**- which is a hormone that decreases after child birth

Postpartum psychosis

- Within 2-3 weeks
- **Initial**- tearfulness, insomnia, lability
- Delusion & hallucinations **(Baby is dead, she didn't give birth)**
- Risk of harm to self or baby
- Episode of bipolar disorder
- Mostly recovery is complete
- 2/3rd patients have another episode in next 1 year
- **Rx- antipsychotics + Li^+ + antidepressants**

Suicide

- Suicide rate in india-10.3 / lakh population
- MC method - **Hanging** followed by use of poisons
- **CSF levels of 5 HIAA (5 hydroxy indole acetic acid) inversely relates with risk of suicide**
- **Causes**
  - **Depression (M/C cause of suicide)**
  - **Schizophrenia**
  - **Alcohol dependence**
  - **Borderline personality and antisocial personality disorder**
  - **Risk factor**
    - Previous suicide attempt (Most important risk factor)
    - Signs of suicidal intent **(Writing a suicide note)**
    - Male sex
    - Hopelessness
    - Age> 45 years

- Substance abuse
- Divorced, separated
- Unemployed
- Chronic illness
- Family history of suicide
- Poor social support
- Sexual abuse

- Parasuicide- act of self-harm with no intent to kill self
- Copycat suicide- seen in adolescents. In this person tries to attempt the suicide because his peer or the person he worships has attempted suicide earlier.
- Physician suicide
    - Psychiatrists> Ophthalmologist> Anesthetist

Neurotic, Stress Related Disorders & Somatoform Disorder

Anxiety –Alerting signal, which makes one take an action

Fear– Known, external, definite threat whereas anxiety is unknown, internal and vague threat

Features of anxiety– Sweating, tremors, restlessness, tachycardia, mydriasis, increased urinary frequency, diarrhea, hyperreflexia and cold clammy skin.

Anxiety disorders

- As a group, most common psychiatric disorder
- Individually, specific phobia is most common
- Acc to NMHS 2017, in India, depressive disorders are the most common

A. Panic disorder

- Panic attack: An acute attack of intense anxiety, with a 'feeling of impending doom'
- Palpitations, choking sensations, chest pain, dizziness, depersonalization, derealization
- Fear of having a heart attack, dying or going mad
- Panic disorder: Recurrent and unexpected panic attacks
- Anticipatory anxiety

Differential diagnosis

(Myocardial Infarction, angina, cardiac arrhythmias, mitral valve prolapse, Acute asthma, COPD, Pulmonary embolism, Pheochromocytoma, carcinoid syndrome, hyperthyroidism, hypoglycemia, Anemia, seizure disorder)

- Females > males
- Agoraphobia is a comorbidity of panic disorder

Neurotransmitter– NE, serotonin, GABA, cholecystokinin

B. Agoraphobia

- Fear of places from which escape might be difficult
    - Fear of open spaces
    - Fear of crowded places
    - Fear of enclosed places
    - Fear of travelling alone
    - Fear of public transport
- Home bound
- Agoraphobia and panic disorder are usually comorbid

Rx:

- Combination
- Pharmacotherapy
    - Benzodiazepine & SSRIs
    - Venlafaxine, buspirone, clomipramine
- Psychotherapy
    - Behavioral therapy (Psychotherapy of choice in phobias)
    - Cognitive behavioral therapy (Psychotherapy of choice in panic disorders)
    - Relaxation techniques, psychodynamic psychotherapy

C. Specific phobias

- Strong, persistent & irrational fear of an object or a situation
- DSM-5 types
    - Animal type
    - Natural environment type (E.g. storms, water)
    - Blood-injection-injury type (E.g. invasive medical procedure)
    - Situational type (E.g. lifts, planes)

Phobias	Theme of Phobias: (Fear of)
Nyctophobia	Darkness
Acrophobia	Heights
Claustrophobia	Closed spaces
Ailurophobia	Cats
Cynophobia	Dogs
Mysophobia	Germs or dirt
Pyrophobia	Fire
Xenophobia	Strangers
Thanatophobia	Death
Hydrophobia	Water

Rx:

- SSRIs, benzodiazepines, beta blockers (Adjunct)
- Behavioural therapy
    - Systematic desensitization (Hierarchy of exposure is created starting from minimum to high grade with appropriate relaxation techniques)
- Therapeutic graded exposure (Or exposure and response prevention or in vivo exposure)
- Flooding (Implosion technique)- maximum exposure is given in one go. (Not preferred)
- Participant modeling- therapist act as a model for patient

Social anxiety disorder (Social phobia)

- Fear of social situations (Fear of embarrassment)
- Treatment same as other phobias

Generalised anxiety disorder

- Free floating anxiety
- Excessive worries
- Somatic symptoms of anxiety
- Restlessness, easy fatigue, muscle tension
- Poor concentration, insomnia, irritability

Rx:

- SSRIs, BZDs, buspirone, venlafaxine
- CBT
- supportive psychotherapy,
- insight oriented psychotherapy

Obsessive compulsive and related disorder

A. Obsessive-compulsive disorder

- Obsessions are
  - Recurrent, intrusive thoughts images or impulses, which cause anxiety
  - Patient considers them as a product of their own mind (D/d thought insertion)
  - Patient finds them excessive, irrational and senseless, at some time during the illness (D/d delusions)
  - Patient tries to resist or neutralize them
- Compulsions are
  - Repetitive behaviors/mental acts performed in response to obsessions
  - Reduce anxiety temporarily
- Ego dystonic (Not acceptable to self)
- With good insight/poor insight/absent insight (Delusional belief)
- Duration criteria - Two weeks
- Lifetime prevalence: 2-3%
- M/C comorbidity- Depression
- Caused by Serotonergic dysregulation
- Cortico-striato-thalamico-cortical tract is involved
- Orbitofrontal cortex - caudate - thalamus- orbitofrontal cortex
- **B/l small caudate nucleus**
- PANDAS- Pediatric autoimmune neuropsychiatric disorders associated with streptococcus infections.
  - OCD in children- precipitated by Group A β hemolytic streptococcus
  - autoimmune response to basal ganglia
  - OCD and tics

- **Symptom patterns**
    - Obsession of contamination with compulsion of washing and avoidance (M/C)
    - Pathological doubt with compulsions of checking (Second M/C)
    - Intrusive thoughts (Usually with mental compulsions)- sexual, aggressive and religious content
    - Symmetry or precision with compulsion of slowness
    - Magical thinking- Just because they thought about an event, it will occur in reality

- M/C obsession- Obsession of contamination
- M/C compulsion- Compulsion of checking

Course and prognosis

- Acute onset- 50%
- Chronic illness
- Significant improvement- 20-30%
- Moderate improvement- 40-50%
- No improvement or worsening- 20-40%

Treatment: Combination of pharmacotherapy and psychotherapy

- Pharmacotherapy
    - SSRIs and clomipramine
    - Antipsychotics (Augmentation with haloperidol, quetiapine, risperidone and olanzapine)
    - Lithium, Valproate, carbamazepine, venlafaxine
- Psychotherapy
    - Exposure and response prevention (Kind of CBT/BT)- best
    - Desensitization, thought stopping, flooding, aversive conditioning
    - Psychodynamic psychotherapy, family therapy

Psychosurgery: Cingulotomy, capsulotomy (Subcaudate tractotomy)

B. Hoarding disorder

- Acquiring and inability to discard things, that are of little or no value
- Fear of losing something important
- DSM-5 and ICD-11 changes
- SSRIs and CBT
- Exposure and response prevention is not so effective

C. Body dysmorphic disorder

- Preoccupation with an imagined defect/slight anomaly in physical appearance
- Repetitive behavior (E.g. mirror checking) or mental acts (Comparing self with others)

- Usually hair, nose or skin
- With good insight/poor insight/absent insight (Delusional belief)

D. Olfactory reference syndrome

- New in ICD-11
- Preoccupation that one is emitting foul odor or breath, that is absent or only slightly noticeable
- Repeated checking or avoidance

E. Body focused repetitive behavior

- Repetitive actions directed at integument (Skin, hair) and inability to stop them

Trichotillomania

- Repetitive pulling of hair
- Inability to stop

Excoriation disorder

- Repetitive picking of skin
- Inability to stop

Trauma And Stress Related Disorder

1. **PTSD (Post-Traumatic Stress Disorder)**

- Serious trauma significant threat of a serious injury to self or others
- Eg:- Trauma such as earthquake/ floods, wars, murder, rape, serious accidents etc.
- Symptoms

A. Intrusive symptoms – Re-experiencing trauma in form of '**flashback**' vivid memories, nightmares

B. Avoidance

C. Arousal symptoms – Hypervigilance, insomnia, exaggerated startle response

- Emotional numbing
- Anhedonia

- Symptoms must last for at least 1 month to diagnose it as PTSD.
- If symptoms develop after 6 months – PTSD with delayed onset
- It is seen more in- young, adults and females.
- **Neuroanatomy** – Hippocampus & Amygdala.

T/T :

1. SSRIs
2. CBT (Treatment of choice)
3. Eye movement desensitization & reprocessing (EMDR)
4. Psychodynamic Psychotherapy

Complex PTSD – included in ICD 11

- Exposure to an event or usually series of events of extremely threating nature
- Slavery, childhood sexual or physical abuse etc

- Additional symptoms
  - Severe abnormalities of affect regulation
  - Belief that one is defeated, and worthless, feelings of shame or guilt
  - Inability to feel close to others or sustain a relationship

2. **Acute stress disorder** - >3 days and <1 month

3.**Acute stress Reaction**

- **ICD 10**- Transient disorder that develops in response to exceptional physical/mental stressor and subsides within hours or days
- Initial state of daze, followed by anxiety, depression, despair or agitation
- **ICD 11** -Removed from mental disorders and classified as reaction to trauma
- T/t – Debriefing, CBT, SSRIs

4.Adjustment disorder

- Usually follow events which are critical but not uncommon in the course of life
- Relationship issues, changes of job, migration, death of loved one
- Depressed mood or anxiety symptoms

Rx:

1. Pharmacological (Antidepressants, antianxiety disorders)
2. Psychotherapy (Supportive psychotherapy)

Somatic symptom and related disorder (Somatoform disorder)

- Prominent physical symptoms /medically unexplained symptoms
- **Somatic Symptom Disorder** (Somatization disorder) **(Briquet's syndrome)**
    - One or more somatic symptoms
    - Excessive thoughts, excessive behaviours, excessive feelings
    - Onset associated with some stressor
    - Treatment- Psychotherapy
    - ICD-11: Bodily distress disorder
- **Hypochondriasis:**
    - Preoccupation with fear of having or an idea that one has a serious physical illness
    - Despite investigations and medical reassurance
    - DSM-5: Illness anxiety disorder
    - Psychotherapy
- **Body integrity dysphoria**
    - ICD 11 diagnosis
    - Persistent and intense desire to become physically disabled (Amputation of limb or blindness)
    - Sense of alienation or discomfort with currently non-disabled body part
    - May request surgical amputation or may pretend to be disabled

Dissociative disorders (Conversion disorders) / (Hysteria)

- Dissociation is disruption in normally integrated functions of memory, identity, perception, consciousness and motor behavior
- Produced by 'Psyche' unconscious symptoms, help deal with anxiety.
- Usually sudden onset, associated with psychological stressor.

Gains - Three types and all are unconscious

Primary gain – Internal psychological motivation

Secondary gain – External (Aware of psychological motivation) -relief from duty

Tertiary gain – Gain to a third person.

TYPES

1.Dissociative amnesia – Sudden loss of memory for traumatic event of personal significance.

2.Dissociative fugue – Sudden, unexpected travel (Unexcepted but a place with emotional significance.

- Inability to recall past memory
- May involve confusion about identity or assumption of a new identity
- Basic self care is maintained, and behavior appears normal during travel.
- In DSM 5, dissociative fugue has been made a specifier of dissociative amnesia

3.Trance disorder-

- Trance states- change in individual's state of counsciousness and loss of sense of 'Personal identity'.
- Awareness of surrounding becomes restricted and movement and speech may become restricted and may be experienced as being outside one's control.
- No experience of being replaced by alternate identity.

4.Possession trance disorder-

- Experience that the 'Personal identity' has been replaced by external 'Possessing identity'
- Individuals behaviours are experienced as being controlled by 'Possessing identity'
- Both personalities coexist

5. Dissociative identity disorder or multiple identity disorders

- 2 or more personalities alters in an individual, one evident at time
- Usually unaware of each other existence.

6. Dissociative (Functional) Neurological Disorder /conversion disorder

- Motor, sensory, cognitive deficit
- No physical cause could be found
- Caused by Psychological causes
- Don't confirm physiological and anatomical principles
- "La belle indifference" – Lack of concern
- d/d– acute intermittent porphyria – H/o abdominal pain

7. Depersonalization / Derealization

Depersonalization:

- Feeling of unreality of self
- Feeling of being detached from body and watching self, like in a movie
- 'as if' they have changed

Derealization: Feeling of unreality of world, world appers fuzzy, dream like.

- Reality testing is intact

8. Others

Genser's syndrome – Usually seen in prisoners (But not exclusively in them)

- Word approximation (**Vorbeireden, vorbeigehen**)
- Auditory / visual hallucinations
- Clouding of consciousness

T/T

1. Don't give him sick role
2. Remove all secondary & tertiary gains
3. Behavioral therapy
4. **Abreaction** (Attempt made to bring back conscious memories using hypnosis, medications etc)
5. Psychoanalysis
6. Benzodiazepines, thiopentone, amytal for abreaction

Other disorders

A) Factitious disorder (Munchausen syndrome)

- Willful production of symptoms to get medical attention & take 'sick role'
- Relation to medical field
- Psedologica fantastica
- Professional patients, hospital addiction
- Sick role
- Munchausen syndrome by proxy

B) Malingering

- Not a psychiatric disorder
- Wilful production of symptoms for conscious, external incentives like financial incentive, avoiding legal case, tough job
- Should be suspected:
- Referral by court of law
- Discrepancy in complaints and objective findings
- Lack of cooperation by patients during evaluation and treatment

C)Chronic Fatigue Syndrome (Myalgia encephalomyelitis)

- CDC criteria: Severe unexplained fatigue > 6 months
  - New or definitive onset
  - Not due to exertion
  - Not resolved by rest
  - Functional impairment
  - ≥ 4 of following **new** symptoms
    - Impaired memory and concentration
    - Unrefreshing sleep

- Headache
- Muscle pain
- Pain in joints
- Post exertional malaise > 24hrs
- Sore throat
- Tender lymph nodes

-No pathognomic features, symptoms non specific

-EBV inconclusive

-Depression is mc comorbity

-Symptomatic Pharmacotherapy

Psychotherapy (CBT)

D) Psedocyesis

- Development of classical signs of pregnancy
  - Abdominal enlargement (Umbilicus doesn't get everted)
  - Reduced menstrual flow or amenorrhea
  - Subjective sense of fetal movements
  - Breast engorgement
  - Labour pains at expected date of delivery
  - Non pregnant female, usually has a false belief of being pregnant

E)Culture Bound Syndrome

- Seen in particular culture
- **DHAT syndrome**- Belief of passage of semen in urine and accompanying physical and mental health weakness
- **KORO syndrome**- Fear that penis will retract into abdomen and result in death

Psychosomatic disorders:

- Physical disorders caused by or aggravated by psychological factors.
- Stress
- General adaptation syndrome: Hans selye
  - **Stage 1**- Alarm reaction: fight or flight
  - **Stage 2**- Stage of resistance: body adapts
  - **Stage 3**- Stage of exhaustion: resistance decreases and collapses

Death and Dying

A. Stages of death (DABDA)

- Described by Elizabeth, Kubler Ross

I. **D**enial & shock

II. **A**nger

III. **B**argain

IV. **D**epression

V. **A**cceptance

Grief, Bereavement & Mourning

- **Grief** – Psychological feeling precipitated by death of loved ones
- **Bereavement** – State of being deprived of a loved one due to death
- **Mourning**- Process through which grief is resolved
- **Grief** – Negative emotions mixed with positive emotions, longing to join the deceased person, transient hallucinations may occur
    - **Normal grief** – (Up to 6 month)
    - **Complicated grief** – Prolonged grief with intense emotions
        - **ICD 11** : Prolong grief reaction
        - **DSM 5**- Persistent complex bereavement disorder

Substance Related & Addictive Disorders

A. **Dependence** –

When consumption of substance takes much more precedence over all other activities of life.

- Criterion

a. **Tolerance** (Physical dependence)
   – Increasing amount of substance is required for desired effect
b. Withdrawal symptoms (Physical dependence)
c. Craving – strong urge - Inability to control substance taking behavior
d. Progressive neglect of alternative ways of pleasure
e. Continued use despite clear harmful consequence
f. Progressive neglect

→ According to **ICD 10**

- **3/6** Symptoms present is dependence

B. **Harmful use**

- Pattern of use causing damage to
  - Physical or
  - Mental health damage
  - Behavior leading to harm to health of others

C. Single episode of harmful use
D. Substance use disorder - **DSM – 5**
E. Intoxication- Symptoms that develop after consumption of substance

Etiology – Biopsychological dependence

- **Brain reward pathway**- Dopaminergic neurons from ventral tegmental area to nucleus accumbent
- **Neurotransmitters**- Opioids, catecholamines (Dopamine), and GABA
- **Genetic** factors
- **Reinforcement** – Positive emotions or relief from negative emotions
- Psychological factor – Pleasure / euphoria
- Social factors – Peer pressure, easy availability, social acceptance
- Personality type

1. Alcohol

- 1 standard drink = 10 ml of absolute alcohol = 7.8 gm of absolute alcohol
- Specific gravity of alcohol = 0.78
- **Spirits** (Whiskey, vodka,brandy, rum, gin etc) : 40% conc of absolute alcohol by volume
- **Beer** (Strong)- 8 -11%
- **Beer** (Standard) 3 -4%
- **Absorption- 20%** Stomach and **80%** from Small intestine (Duodenum and jejunum)
- **Mellanby effect**- Intoxicating effects at a particular BAC
- **Reverse tolerance**
  - Secondary to decreasing levels of alcohol metabolizing enzymes

- Similar sensitization seen with cocaine, amphetamine, opioids, and cannabis due to changes in brain reward pathway

- **Metabolism**-
  - 90% through oxidation in liver
  - 10% excreted by kidney
- Breath analyzer
- Rate of oxidation- 7-10gram of alcohol an hour
  - Alcohol dehydrogenase (Acetaldehyde)
  - Aldehyde dehydrogenase (Acetate)

Acute Intoxication

- CNS depressant

BAC levels	Effects
20-30 mg/dl	○ Slow motor performances ○ Decreased thinking ability ○ (Legal limit: 30mg/dl)
30-80 mg/dl	○ Further worsening
80-200 mg/dl	○ Incoordination ○ Emotional lability ○ Judgement errors
200-300 mg/dl	○ Slurred speech ○ Nystagmus ○ Alcoholic blackout
>300 mg/dl	○ Impaired vital signs ○ Possible death

Alcoholic blackouts

↓

Anterograde amnesia (At the time behaviour appears to be goal directed, no confusion seen)

Withdrawal symptoms

After **6-8 hrs**: **Tremors (M/C)**, nausea, vomiting restlessness, mydriasis

After **12-24 hrs**: **Alcoholic hallucinosis** (Auditory) **M/C**

After **24-48 hrs**: **Alcohol withdrawal seizures** (GTCS, clustered seizures)

After **48-72 hrs**: **Delirium tremens**, if untreated mortality rate is **20%**

Delirium Tremens

- Disorientations of consciousness
- Disorientations to time /place/person
- Hallucination **(M/C visual)**
- Cause tremors
- Autonomic hyperactivity

Alcohol induced disorders

1. A.I psychotic disorders
2. A.I sleep disorders
3. A.I bipolar disorders
4. A.I depressive disorders
5. A.I anxiety disorders
6. A.I sexual disorders
7. A.I neurocognitive disorders

↓

Long term use, amnestic syndrome

A. **Wernicke's, encephalopathy**
   - Acute
   - Thiamine deficiency

   G- Global confusion
   O- Ophthalmoplegia **(M/C 6th cranial nerve- abducens)**
   A- Ataxia
   - Rx- High dose of parenteral thiamine
   - Sequence of recovery
     - Ophthalmoplegia > Global confusion > Ataxia (Partially recovers)

B. **Korsakoff syndrome**
   - chronic

   a. Amnesia – Anterograde (M/C) > retrograde
   b. Learning difficulties
   c. Confabulations- False story made by patient to fill the gaps **(Honest lying)**

   Rx = long term oral vitamin B1

Neuroanatomy

- Lesions are symmetrical
- Mammillary bodies
- Other sites – Thalamus, hypothalamus, midbrain, pons, medulla, fornix, cerebellum

1. **Marchiafaya Bignami disease**

- Demyelination of corpus callosum
- Epilepsy, ataxia, dysarthria, hallucination & intellectual deterioration

Evaluation

1. **Screening**-

(A) C- Cut Down

A – Annoyed

G- Guilt

E –Eye Opener

(B) A – Alcohol

U- Use

D – Disorder

I – Identification

T- Test

If 2 or >2 present in CAGE questionnaire: Patient is screening positive for alcohol

(C) S- Severity of

A- Alcohol

D- Dependence

Q- Questionnaire

2. Diagnostic
   - Help identify heavy drinkers

A. BAC (Blood alcohol cone)
   - Usually breath analyzer
   - Widmark formula

B. Carbohydrate deficit transferrin (Most sensitive) and specific lab test for identification of heavy drinking
C. GGT – Less sensitive and specific, both CDT and GGT return to normal within days of stopping drinking
D. ALT & AST
   -(ALT >>> AST) more specific
   -ALT : AST is a good marker for heavy alcohol consumption
E. MCV - Increased
F. Alkaline Phosphatase level (Damage to liver)

Rx-

1. **Detoxification** – D.O.C benzodiazepines (Chloridiazepoxide), Thiamine x 7-14 days
   - CBZ can also be used
   - Oxazepam/Lorazepam – Liver damage

2. **Maintenance of abstinence** – To prevent relapse

3. **Pharmacological agent**
   a. **Deterrent agents** (Aversive agents)
   - Disulfiram (Dilsulfiram ethanol reaction)
   - Metronidazole
   - Citrated calcium – Carbimide

A. **Anticraving agents** – Naltrexone- metabolized by liver
- Acamprosate (NMDA R antagonist)- excreted by kidney
- Topiramate
- Baclofen
- Serotinergic agents like fluoxetine

4. Non-Pharmacological agent
- Cognitive behavioral therapy
- Motivational enhancement therapy
- Alcoholic anonymous (12 steps self-help group)
- Family therapy
- Group therapy

Opioids
- Opiates – Psychoactive alkaloids (Morphine, codeine)
- Derived from Papaver somniferoum
- Opioids – Synthetic compounds that act like opiates

A. **Heroin**
- Diacetyl morphine
- **M/C** abused opioid – **Heroin**
- Smack, brown sugar
- Morphine, codeine etc
- White in colour. Therefore charcoal cannot be used as adulterant.
- Oral, intranasally (Chasing the dragon)
- I.V (Mainlining)
- Subcutaneous (Skin popping)

Intoxication
- Euphoria
- Initial euphoria followed by period of sedation (Nodding off)
- **Lethal – respiratory depression**
  - Slow respiration, hypothermia, hypotension bradycardia, cyanosis, pin point pupil, cyanosis

Overdose- Respiratory depression
- Rx – DOC – I/V naloxone
  - Even intranasal has been approved

Withdrawal symptoms
- Starts in 6-8 hrs of withdrawal
- Reach peak in 2-3 days
- Ends in 7-10 days
- Causes flu like symptoms

- Lacrimation,
- Rhinorrhea,
- Sweating,
- Diarrhea
- **Yawning**
- **Piloerection**
- Mydriasis
- Body ache and insomnia
- Hypertension, anxiety
- Tachycardia

Treatment

1. **Detoxification** – **DOC**-methadone, buprenorphine, dextropropoxyphene (Long acting opioids)
   - Clonidine / lofexidine can also be used

Accelerated detoxification –

Naltrexone (On giving opioid antagonist)

↓

Precipitated severe withdrawal symptoms

Rx – Clonidine

2. **Maintenance of abstinence**

a. Opioid substitution therapy
   - Methadone
   - Buprenorphine

b. Naltrexone

3. **Psychotherapy (Narcotic anonymous)**

Cannabis

Cannabis sativa Americana

- **M/C used illegal Drug in India**
- Active agent- δ-9 tetrahydrocannabinol (THC)
- Joints, marijuana, grass, pot, weed etc.

Preparations

Preparations	THC concentration
Bhaang (Dried leaves)	1%
Ganja (Inflorscence)	1-2%
Hashish/ Charas (Resinous exudates)	8-14%
Hash oil	15- 40%

Intoxication

- Euphoria
- Sense of slowing of time
- Sense of floating in air
- Reddening of conjunctiva
- Increased appetite
- Dryness of mouth
- Depersonalization, Derealization
- Synesthesia, illusions
- Bad trip

Withdrawal symptoms

- Irritability
- Depressed mood
- Sleep disturbances
- Headache

Cannabis related disorders : Flashback phenomenon: Recurrence of cannabis use experience in the absence of any current use

- **Amotivational syndrome**- Loss of motivation in all domains of life
- **Running amok** – Extreme rage that may develop after cannabis intake in which patient may attack others indiscriminately
- Bad trips
- Mild withdrawal symptoms like irritability
- Cannabis induced psychotic disorders

T/T – Symptomatic and psychotherapy

Hallucinogens

1. **LSD (Rape drug)** (Lysergic acid diethylamide),
2. Mescaline,
3. Psilocybin,
4. Methylenedioxyamphetamines (MDMA, **ecstasy**),
5. Phencyclidine (Angel **dust**),
6. Ketamine

LSD

Features :

- Depersonalization, Derealization, Synesthesia, Illusions
- Bad trips

Phencyclidine and ketamine

- Dissociative anesthesia
- NMDA receptor antagonist
- Intoxication similar to schizophrenia

- Phencyclidine intoxication
    - Vertical & horizontal nystagmus
    - Aggressive

Hallucinogens

- Don't cause physical dependence
- No withdrawal symptoms
- Flashback phenomenon

Cocaine

- Erythroxylum coca
- Term by **Sigmund Freud**
- Was prepared as a LA
- Fast Na+ channel blocking properties
- Use- ENT surgery
- Blocks dopamine and norepinephrine receptors
    - Vasoconstriction strong – HTN/MI
    - Nasal septal perforation
    - Seizures
    - **Jet black pigmentation of tongue**
- Snorting, freebasing, i.v, s.c
- Speed ball = Cocaine + heroin
- Intoxication
    - Euphoria
    - Sympathetic symptoms (Tachycardia, palpitations, hypertension, sweating, mydriasis)
    - Paranoid ideations + auditory hallucinations
    - **Tactile hallucinations** or **cocaine bugs** or **Magnan phenomenon** or **formication**

- Withdrawal symptoms
    - Mild physical dependence
    - Strong psychological dependence
    - Feeling low tired
    - Insatiable hunger
    - Feeling depressed with suicidal ideations
    - Cocaine induced psychotic disorder

Treatment- Symptomatic and psychotherapy

Amphetamines

- Dextroamphetamine, methamphetamine, methylphenidate (Amphetamine like compound)
- Euphoria, Enhanced performance
- Amphetamine induced psychotic disorder

Tobacco

- Most common substance used in India
- Beedi most common followed by cigarettes
- Nicotine- stimulant
- Cardiovascular disorders- Nicotine, CO
- Withdrawal symptoms
    - Within 2 hours, peak in 24-48 hours
    - Irritability
    - Poor concentration
    - Anxiety, restlessness
    - Bradycardia
    - Drowsiness but paradoxical insomnia
    - Increased appetite, wt. gain
    - Depression

Treatment

-Nicotine replacement therapy

-Medications

-**Varenicline**: Partial agonist at α4β2 nicotinic acetylcholine receptors and α7 nicotinic acetylcholine receptor.

-**Partial agonist**- Prevents high and reinforcement and also craving and withdrawal

-Nausea, insomnia, Suicidal thoughts

-Bupropion

-Clonidine

-Nortriptyline

ICD 11

- Gaming disorders
- Gambling disorders

Organic Mental Disorder

(Neuro Cognitive Disorder)

Definition: Demonstrable cerebral disease, brain Injury or other causes leading to cerebral dysfunction.

- **Symptoms may Include:**

a) Cognitive Impairment – Cognition refers to all Mental processes that are utilized to gain knowledge and Include Memory, Language Orientation, Judgement etc.

- Also called as **Cognitive Disorder**

b) Disturbance of Consciousness

- Confusional state
- Clouding of Consciousness
- Altered Sensorium

Five Levels of Consciousness:

- **Alertness** – Awake, Aware of Internal & External stimuli and can respond to it
- **Lethargy** – (Or somnolence)- Not fully alert (Can't give close Attention):, If not actively stimulated, drifts Into sleep
- **Obtundation** – Difficult to arose, when aroused, appears confused. Constant stimulation required for even minimal cooperation from Pt
- **Stupor** (Semi coma) – No spontaneous response, akinetic & mute. If persistent & vigorous stimulation given, may groan or mumble
- **Coma** -Complete unawareness, can be stimulated, eyes are closed

Some other Terms:

Q • Torpor: Lowering of consciousness, short of stupor

Q • Twilight State: Dream like state (Also called as oneiroid state)
Awareness is restricted. It corresponds to obtundation stage

c) Hallucinations (Mainly Visual)

d) Delusions- Usually transient, complex delusions are rare.

Delirium

- M/C organic mental disorder with an acute onset
- More common in elderly patients
- Patients with medical & surgical disorder & hospitalized
- Hip #, open heart surgery, severe burns, Infections like pneumonia, post-operative patients, critically ill patients.
- Alcohol withdrawal & sedatives withdrawal
- On multiple medications (Especially with anticholinergic action)
- Sensory deprivation (E.g. **Black patch delirium**-After cataract surgery)

Symptoms:

- Disturbances of consciousness
- Disorientation to time, place & person (Orientation returns back in reverse order)
- Perceptional disturbances like illusions & hallucinations

Other

- Transient delusions
- Impairment of attention
- Memory disturbances (Recent & immediate, remote is intact)
- Agitation (Or hypoactivity), autonomic disturbances: Difficult to detect because patient is hypoactive
- Sleep wake cycle disturbances.
- Sundowning: As sun goes down (Evening) the symptoms worsen
- Floccillation's (Carphologia): Aimless picking behavior
- Occupational delirium

Features:

- Sudden onset & fluctuating course
- Neurotransmitter: Ach
- Diagnosis: Clinical
- Tract involved in delirium: RAS (Reticular Activating system)
- MMSE (Mini Mental Status Examination) & MSE used to measure cognitive impairment
- Confusional assessment method to identify patients with delirium

MMSE (Mini Mental Status Examination)

- Assesses Five Cognitive Functions
  1. Orientation (10 points) – Years, season, month, date, day, country state, town, hospital, Floor
  2. Registrations (3 points)
  3. Recall (3 points)
  4. Attention & Concentration (5 points) – Serial 100-7, spell 'WORLD'
  5. Language (9 points)

  Total = (30)

- Max score = (30)
- Less than = (24) indicate cognitive impairment.

Findings:

- Generalized slowing on EEG (Exception: Delirium D/T alcohol and sedatives withdrawal delirium – low voltage fast activity)
- **Rx**: Treat cause, Benzodiazepines, Antipsychotics

Dementia

*** Impairment

- Progressive impairment of cognitive functions, in the absence of any disturbance of consciousness
- DSM-5- Major neurocognitive disorder
- Prevalence: ↑ses with age.

Symptoms:

A. Cognitive Impairments: 4A's

1. **Amnesia** - Memory Disturbances
   - Recent → Immediate→ Remote
   - Episodic memory, semantic memory & visuospatial Skills
   - Episodic memory→ Rrom recent to remote
   - Semantic memory: Memory for facts such as rules, words & language. Lost later.
   - Visuospatial skill deficits: Disorientation in strange & later familiar environment
2. **Aphasia**: Disturbances of language function.
   - Starts with word Finding difficulties & progresses
3. **Apraxla**: Difficulty In performing learned motor movement.
4. **Agnosia**: Inability to interpret a sensory stimulus

(**Prosopagnosia** – Inability to identify faces)**Q*****

→ Disturbance In executive function (Planning & organization)

B. Behavioral & Psychological Symptoms of Dementia (BPSD)

- Personality changes: introvert, apathy, inappropriate, hostile, more so in frontal & temporal lobe involvement
- Delusions and hallucinations.
- Anxiety, depressive symptoms
- **Catastrophic Reactions** – Awareness of intellectual deficits in a stressful situation causing an emotional outburst.

C. **Focal neurological deficit** – Usually in vascular dementia. E.g. Extensor plantar response etc

***Reversible dementias** (Around 15% of total)

A. Neurosurgical conditions- Subdural hematoma, normal pressure hydrocephalus, intracranial tumors or abscess

B. Infectious causes: Meningitis, encephalitis, neurosyphilis, Lyme's disease

C. Metabolic Causes – Vit B12 and folate deficiency, niacin deficiency, hypo & hyper parathyroidism, hypo & hyperthyroidism.

D. Others: Drugs, toxins, alcohol abuse, autoimmune encephalitis.

Cortical dementias

Early presentation of 4A's (Amnesia, Apraxia, Aphasia, Agnosia, Acalculia)

- Alzheimer disease
- Creutzfeldt Jacob disease
- Picks disease & other Frontotemporal dementia.

Sub-cortical Dementia

- Involves sub-cortical structures (Like basal ganglia, cerebellum, brain stem nuclei) first
- Present with motor symptoms (E.g. tics, chorea, dysarthria) executive function disturbance and BPSD First
- Eg: Parkinson's D/s Wilson's D/s Huntington's D/s, Progressive supra-nuclear palsy
- Mixed presentation – Vascular dementia, Dementia with Lewy body

Alzheimer's D/s (Dementia of Alzheimer type)

- M/C Type
- Prevalence ↑ses with age around 5% for age 65 yrs & above
- Around 20-30% for age above 85 yrs
- Late onset – Female: Male (2 or 3:1)
- Early onset familial forms (Autosomal dominant)
- Insight is lost early
- Cortical dementia – Present with 4A's early & executive functioning disturbances initially
- Later stages - Neurological defect such as tremors, spasticity or rigidity may develop

• **Pathophysiological Findings:**

- Diffuse atrophy, flattened cortical sulci & dilated cerebral ventricles
- Primarily involve parietal and temporal lobes
- Atrophy starts In medial temporal lobe (Entorhinal/perirhinal cortex & hippocampus) and spreads to lateral & medial parietal lobes, lateral temporal lobes & lateral frontal cortex

Microscopic Findings:

1) Senile plaques or Neuritic plaques or Amyloid plaques

- Extracellular in location
- Aβ protein
- Amyloid precursor protein, acted upon by beta & gamma secretase
- Aβ protein combines to form fibrils
- Found in all cortical areas & also in cerebellum & striatum
- Aβ deposits in vessel walls in force of cerebral amyloid angiopathy
- Plaques can be present in elderly with AD

2) Neurofibrillary Tangles:

- Intracellular deposits
- Tau proteins
- Found in cortex & hippocampus but spares cerebellum
- Amount & distribution of NFT's correlates with the severity and duration of alzheimer dementia
- Tau levels also ↑ses in CSF → possible bio marker
- Can be present in elderly without Alzheimer's

• Neuropathological diagnosis of AD : Extensive presence of both senile plaques & NFT

• Commonly used criteria: **National Institute of Neurological & Communicative Disorders & stroke & Alzheimer's D/s & related Disorders association** (NINCDS – ADRDA Criteria)

3) Granulovacuolar degeneration & **Hirano bodies** (Eosinophilic inclusions) – Abnormalities in cytoplasm of hippocampal neurons

- Can be present in elderly without dementia's

Amyloid cascade hypothesis

- Mutations in APP gene
- Favors cleavage by beta & gamma secretase doesn't yield Aβ.
- Aβ combines to form oligomers & finally plaques
- Aβ also induces phosphorylation of Tau protein.
- Highly phosphorylated tau protein is not able to stabilize microtubules, which results in granulovacuolar degenerations of neurons, neuronal loss & synaptic loss

Neurochemistry

- Loss of cholinergic Neurons (Nucleus basalis of Meynert)
- Also, serotonin & NE lost

Genetics of Alzheimer's D/s

- Early onset familial Alzheimer's d/s
- Mutations in three genes
  - Amyloid precursor protein (Chr 21)
  - Pre Senilin 1 (Chr 14)
  - Pre Senilin 2 (Chr 1)
- Sporadic & late onset Alzheimer's D/s – Apo E4 Allele of Apo E4 Gene is associated with risk
- Patients with Down syndrome have significantly higher risk

Risk:

- Age
- Head injury, HTN, insulin resistance, depression
- High education levels & active mentally & physically- protective
- Smoking is protective (Controversial)

Vascular Dementia

- Multiple cerebral infarcts
- Acute exacerbations which correspond to new infarcts (Stepwise deterioration, called stepladder pattern
- General symptoms of dementia are present
- Focal neurological deficits that corresponds to site of infarction
- Hypertension, DM, smoking, other risk factors.
- NINDS- AIREN Criteria: [National Institute of Neurological Disorder & Stroke (NINDS) & the Association Internationale pour la Recherche et IEnseignement en Neurosciences. (AIREN)]

Binswangers Dementia: 2nd most common type

- Sub-cortical arteriosclerotic encephalopathy
- Multiple small white matter infarcts
- Sub-cortical dementia

Lewy Body Dementia (Dementia with Lewy Body)

- Apart from symptoms similar to Alzheimer's
- Fluctuating levels of attentions & alertness
- Recurrent visual hallucinations
- Parkinsonian features

Huntington's D/s, Parkinson's D/s, Wilson's D/s & Multiple sclerosis

- Predominantly motor symptoms
- Later development of dementia
- Sub-cortical type

HIV Related to Dementia

- Lab evidence of HIV infections
- Cognitive deficits & motor symptoms
- Personality changes

Head trauma Related Dementia/Dementia pugilistica/punch drunk syndrome

Dementia as a sequelae of head trauma

Frontotemporal Dementia:

- Multiple different reasons
- Early onset (45-65yrs)
- Mostly behavioral symptoms with relative preservation of memory

3 Distinctive clinical presentations:

A. Frontal variant: Primary frontal lobe dysfunction with symptoms of apathy, disinhibition, stereotypic behavior

B. Semantic Dementia – Primarily temporal lobe dysfunction with symptoms such as loss of memory for words

C. Progressive Non fluent aphasia's – Speech non fluency & word finding difficulties.

Pseudodementia: Depression in elderly, resembles dementia

Management:

- Screening Test: Mini Mental status Examination
- Cholinesterase inhibition – Donepezil, Rivastigmine, Galantamine, Tacrine
- Memantine – NMDA Antagonist
- For BPSD
- Anti-psychotic increases mortality rate in patients with dementia, by ↑ ing CHF., sudden death, & infections such as pneumonia

Amnestic Disorders:

- Present with amnesia (Anterograde & retrograde)
- Short term & recent memory usually impacted remote, memory & immediate memory preserved

Major Causes

- Thiamine def
- Hypoglycemia
- Primary brain conditions (Head trauma, seizures, cerebral tumor, CVD, ECT, MS, hypoxia)
- Substances (Alcohol, BZD)

Frontal Lobe Syndrome:

- **(aka) Frontal lobe personality**
- Disturbances of frontal lobe

a) **Orbito-frontal Syndrome** – Disorder of orbito-frontal cortex

1. Behavioral disinhibition
2. Impulsivity
3. Lack of insight & poor judgement

b) **Dorsolateral Syndrome** – Disorder of dorsolateral prefrontal cortex

1. Apathy, lack of motivation
2. Poor attention, concentration, psychomotor retardation.
3. Symptoms mimic depression

c) **Anterior Cingulate Syndrome**: Executive function abnormalities

	Delirium	Dementia
Onset	Sudden onset	Insidious onset
Consciousness	Disturbances of consciousness	Not present
Course	Fluctuating course	Progressive course

Personality Disorders

→ **There are 5 personality traits (Parameters)**

- Openness to experience (Novelty seeking, sensation seeking)
- Conscientiousness (Disciplined, dutiful and organized)
- Extraversion (Outspoken)
- Agreeableness (Cooperative to others)
- Neuroticism → Tendency to experience negative emotions, emotional instability

"Mnemonic – OCEAN"

→ Prevalence in 10% - 20%

→ Onset is in adolescence and maturing of phenomenon may occur by 40s (Resolution of maladaptive behaviours)

→ Ego syntonic (They don't want to change) {Ego syntonic=desirable

→ Divided by DSM into three cluster. Ego dystonic=undesirable}

- **Cluster A, B and C**

Cluster A -PD

- Considered to be on a schizophrenia continuum

1. **Paranoid PD**
   → Suspiciousness in individual
   → Excessively sensitive (May get offended by even jokes) and give excessive importance to self.
   → Keep grudges (They don't forget and forgive)
   → Believe in conspiracy theories
   → **Management**: - Psychotherapy, benzodiazepines, antipsychotics
2. **Schizoid PD**
   → Prefer solitary activities
   → Lost in day dreams and fantasies
   → Emotionally cold and detached
   → Indifferent to praise or criticism
   → Little interest in sexual activities
   → **Management**: - Psychotherapy, benzodiazepines, antipsychotics, antidepressants
3. **Schizotypal PD**
   → Odd and eccentric thinking and behavior
   → Magical thinking (Sixth sense)
   → Strange ways of communication (May be difficult to understand)
   → Decompensate in period of stress (Fleeting psychotic symptoms)
   → Illusions and momentary hallucinations
   → Lack of close relationships
   → **Management** – Psychotherapy, benzodiazepines antipsychotics
   → ICD-11: Classified as a **Psychotic disorder**

Cluster B. Personality Disorders

1. **Histrionic PD**
   - → Dramatic and exaggerated emotions
   - → Need to be the center & attention (Attention seeker)
   - → Behave in sexually seductive way and use physical appearance to get attention
   - → **Management** – Psychotherapy, antidepressants.
2. **Narcissistic PD**
   - → Excessive self-importance (Grandiose)
   - → Belief about being special and talented
   - → Fantasies of unlimited success and power
   - → Poor tolerance to criticism
   - → Underlying fragile self esteem
   - → **Management** – Psychotherapy, antidepressants
3. **Antisocial PD (Dissocial PD)**
   - → Unlawful behavior
   - → No regards for rights of others and do violations
   - → Lack feelings of guilt and remorse
   - → Substance use disorders
   - → **Management**- Psychotherapy, antipsychotics, carbamazepine, beta blockers.
4. **Borderline PD (Emotionally unstable PD)**
   - → Emotional instability
   - → Impulsivity (They do things in the heat of the movements)
   - → Intense but unstable relationships, chronic feeling of emptiness
   - → Self-injurious behavior
   - → Identify disturbances, unstable self-image (Suddenly, change life goals, values, career plans, sexual identity)
   - → Splitting * (E.g.:- thinks person is good/devil)
   - → Psychotherapy (Dialectical behavior therapy) antidepressants, antipsychotics, carbamazepine.

Cluster C- Personality Disorder

1. **Avoidant (Anxious) PD**
   - → Excessive sensitivity to rejection, criticism
   - → Fear of being criticized or not accepted by other
   - → Avoid social activities, anxiety
   - → Psychotherapy, beta blockers, SSRIs
2. **Dependent PD**
   - → Let other take decisions of their lives
   - → Need reassurance for mundane decision too
   - → Uncomfortable when alone
   - → Psychotherapy, beta blocker, SSRIs

3. Obsessive Compulsive PD (Anankastic PD) (OCPD)

→ Preoccupied with rules and regulations {Obsessions and compulsions are feature of OCD and not OCPD}

→ Excessively organized

→ Perfectionism that slows them down

→ Stubborn and inflexible

→ No time for leisure, no sense of humor, very formal

→ Psychotherapy, SSRIs

ICD-11

→ Make the diagnosis of personality disorder according to the criteria

→ Mild, moderate, severe (By symptoms and severity)

→ Specifier – 'Prominent Personality Trait'

→ E.g.-moderate personality disorder (Dissociality in personality disorder)

Classification Of Personalities

Type A Personality – Competitive, time urgency, anger and hostility, impatient.

Type B Personality – Easy going and relaxed (Lower chances of CAD)

Type D Personality – Negative affectivity and social inhibition

Type A & Type D – Coronary heart disease more risk

Impulse Control disorder

→ Impulse to perform a particular act which is harmful to self or others.

→ Feeling of increasing tension and arousal

→ After performing behavior, sense of relief or gratification, later guilt

→ Pyromania (Impulse to put things on fire)

→ Kleptomania (Rich people has impulse to steal)

→ Intermittent explosive disorder (Impulses of aggression)

→ Compulsive sexual behavior disorder (Impulsively go for sexual behavior)

→ Others→ Oniomania (Impulse of shopping)

→ Trichotillomania- irresistible urge to pluck hair

→ Treatment is Psychotherapy, SSRIs.

→ Pathological gambling-impulse to gamble (In DSM -5 this has been added along with substance use disorder as addictive disorder)

Eating Disorder

Anorexia Nervosa

→ A normal girl looks at herself in the mirror and she see a fat girl, so she tries to become normal according to her internal standards which in reality is extremely thin.

Characteristics

→ Disturbance of body image

→ Excessive fear of weight gain despite being very thin

→ Restriction of energy intake resulting in significantly less weight than normal (According to ICD- 11 BMI < 18.5 kg/m²). Severity is according to BMI.

- Medical signs and symptoms of starvation such as amenorrhea, lanugo (Neonatal hairs), hypothermia dependent edema and bradycardia

- Mostly seen in adolescent females.
- Misnomer (There is no anorexia in anorexia nervosa)
- Poor sexual development (Adolescent), low interest in sexual activities (Adults)
- Endocrine abnormalities (Decreased FSH, LH, CRH, increased cortisol)
- Peculiar behavior about food (They do many things with foods, but they will not eat)
- Secretive and deny any symptoms (They refuse to accept that they have problem)

Subtypes: -

→ Restricting type – 50 % (Primary feature is restriction of calorie intake)

→ Binge eating / purging type

Eating a lot of Food in a small duration

Kind of trying to take it out

Treatment: -

→ Difficult-because Patient refuse to accept that they have the problem.

→ Sometimes symptoms reach to certain extent that you have to hospitalize the patient.

→ Indication of hospitalization: -

- Dehydration / electrolyte imbalance /significant weight loss, weight for height is less than 80% of normal.

→ Behavioral therapy

→ Giving normal diet suddenly leads to dilatation of stomach, so increase the calories gradually

→ SSRIs, TCAs, cyproheptadine

→ Check for Purging (At least 2-hour observation), in case of failure to gain weight.

Bulimia Nervosa

→ Can be considered as failed attempt at anorexia nervosa.

→ Seen in females, late adolescence

→ Episodes of binge eating (A large amount of food is ingested in a small period of time)

→ Followed by inappropriate ways of stopping weight gain.
  - Purging (Self-induced vomiting, laxatives, diuretics / emetics)
  - Hypergymnasia

→ Fear of gaining weight

→ Purging
  - **Dental caries** (Enamel erosions)
  - **Callous on knuckles**
  - **Parotitis** (Salivary gland inflammations)
  - Hypokalemia and hypochloremic alkalosis
  - Rarely Esophageal or gastric tear during forceful vomiting

→ Weight is usually normal (In anoxia nervosa weight is lesser than normal)

→ Normal sexual functioning

→ Not secretive

Treatment

→ Cognitive behavioral therapy

→ SSRI

Binge eating disorder:

→ Most common eating disorders

→ Only binges, no compensatory behavior

→ Over weight

Treatment

→ Similar to bulimia nervosa

All eating disorders are more common in females

Avoidant restriction food intake disorder: -

→ Patient avoid/restrict the food

→ ICD-11 and DSM -5

→ Insufficient intake of quantity or variety of food, resulting in weight loss (Or inability to gain weight)

→ Patient may report lack of interest in eating or may avoid food due to sensory characteristics (Such as not liking the taste or smell of food)

→ No body image disturbance (D/d anorexia nervosa)

→ All eating disorders are more common in females

Sleeping Disorders

Electroencephalogram

→ Measures the electrical activity of the brain.

→ EEG rhythms:

EEG rhythm	Frequency (hz)	Amplitude (Microvolt)	
Alpha (α)	8-12	50- 100	Awake, at rest, eyes closed, Mind wandering
Beta (β)	14-30	5-10	Awake pattern, when attention is focused
Theta (θ)	4-7	10	Transition from wakefulness to sleep, early sleep
Delta (δ)	1-4	20-200	Deep sleep

Stages of Sleep :

1. **NREM** (Non-Rapid Eye Movement) or slow wave sleep
2. **REM** (Rapid Eye Movement) or paradoxical sleep.

NREM Sleep

→ Further divided into four stages (Stage 1-4)

→ **Stage – 1 NREM**

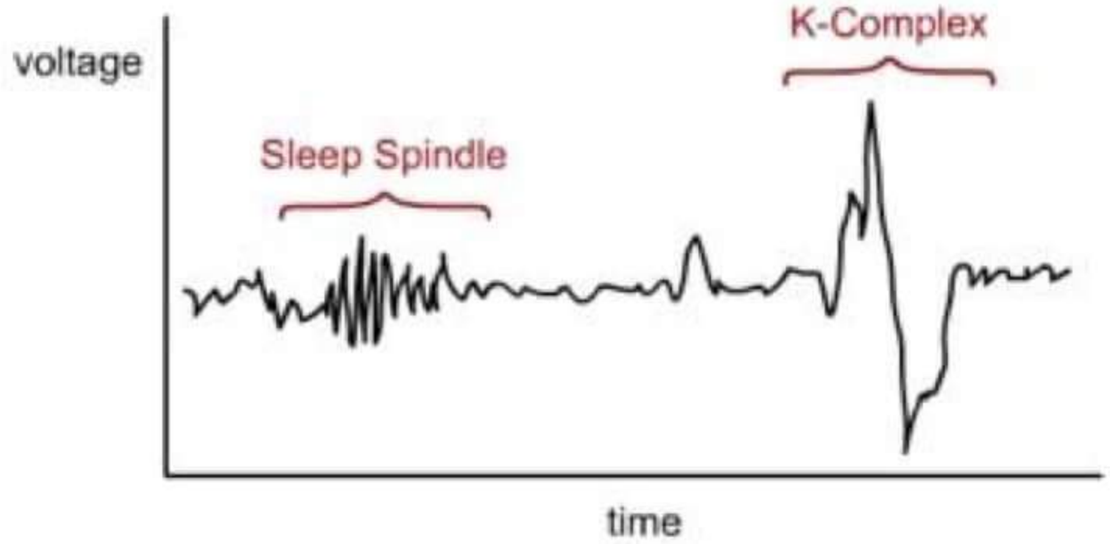
- Light sleep (Easy to awake a person)
- EEG shows, loss of alpha waves
- Predominance of theta waves

→ **Stage - 2 NREM**

- Maximum duration
- Two typical findings

  (A) **Sleep Spindles** (Bursts of regular waves,13-15 hz, 50 micro volt)

  (B) **K complexes** – High voltage spikes, seen intermittently



→ **Stage–3 NREM**

- Sleep deepens
- Appearance of delta waves

→ **Stage–4 NREM**

- Deep Sleep
- Predominance of delta waves

NREM sleep: There is pulsatile release of gonadotropins and growth hormone
– BP, HR and RR slows down

REM Sleep (Rapid Eye Movement Sleep)

→ EEG – Beta waves and return of Alpha waves is there
→ Rapid eye movements
→ Generalized loss of muscle tone
→ Increased rate of metabolism in brain
→ Increased HR, BP and RR
→ Associated with spontaneous penile erection.
→ Dreams (Can be recalled)
→ Paradoxical sleep (Difficult to awake a person)
→ Ponto-Geniculo- Occipital spikes: large phasic potentials which starts from pons, to LGB to occipital cortex

Out of the 8-hour sleep

6 - 6.5 hours is in **NREM** **1.5 hours** in **REM**

- Most NREM (Stage-4) in the first one third of sleep.
- Most REM in the last one third of sleep
- REM sleep occurs after every 90-100 min with total of 4-5 REMs per night

Sleep Disorder

→ Can be divided into 2 broad Categories: -

1. Dyssomnias
2. Parasomnias

Dysomnias:

→ Abnormality in duration or quality of sleep

1.Hypersomnia

(a) **Narcolepsy** – Reduced latency of REM Sleep, strong desire to fall asleep.

4 symptoms

→ **Hypnagogic and Hypnopompic hallucination** (Just before sleep)
→ Cataplexy: sudden loss of muscle tone except eye muscles.
→ **Sleep attacks** seen- irrestible urge to sleep

→ Sleep paralysis (Awake but can't move yourself, it happens because the muscle tone has not yet returned)

Pathology of narcolepsy- It is an immune mediated disorder

- **Occurs due to** deficiency of hypocretin (Hypocretin promote alertness and appetite). Hypocretin neurons projects from hypothalamus
- Strong association with human leucocyte antigen class II (HLA-DR2 and HLA DQB1*0602)

Treatment- Modafinil (DOC), take forced naps.

- Advise patient not to do any dangerous activity like driving and swimming as he might sleep in between and can harm himself/herself.

(b) Klein –Levine syndrome

→ **Triad**- Hypersomnia, Hyperphagia, hypersexuality

→ Treatment-**Modafinil (DOC)**

(C) Primary Hypersomnia

→ Present with only hypersomnia

2.Insomnia

(a) Periodic limb movement disorders

→ Sudden contraction of muscle groups (Usually legs) while sleeping

→ Partial or complete awakening during night

→ Bed partner is aware (Patient is usually not)

→ Non restorative sleep

↓

(Not feel fresh when you get up in the morning)

→ Day time sleepiness

Treatment

→ Benzodiazepines

(b) Restless leg syndrome (Ekbom syndrome)

→ Uncomfortable sensation in legs (Such as insect crawling); which gets relieved by moving the leg or walking around.

→ Difficulty in initiation of sleep.

Treatment: - Ropinirole (Dopamine agonist)

(c) Primary Insomnia

→ If you cannot find any cause for it.

Parasomnias

→ Characterized by dysfunctional events

a. NREM disorder (Usually in NREM 4, NREM 3)

Night terror or sleep terror or pavor nocturnus

→ Child gets up in the night, looks all scared after sometimes goes back to sleep, wakes up in the next day and doesn't remember anything about the last night (But in REM sleep patient can remember about the dream)

Somnambulism

→ Sleep walking
→ May even dress, moves around or even drive
→ Difficult to awake
→ If person is forcefully woken up, he might appear confused and may attack you.

Sleep related enuresis: Usually psychogenic cause (In children 'sibling rivalry')

→ After the age of **5 years** only, diagnosis can be made.
→ Rule out Organic Causes first (E.g. DM, DI, UTIs, Obstruction) day time enuresis favours organic cause more.
→ **Primary Enuresis**- Person has never achieved continence
→ **Secondary Enuresis**- Person has achieved continence but again becomes incontinent
→ **Rx-Bed alarms (Behavioral therapy) (TOC)**
- Desmopressin (DOC)
- TCAs (like Imipramine)

Bruxism (Teeth grinding) – NREM 2
Sleep talking (Aka somniloquy)

Rx – Reassurance to parents
Benzodiazepines (If reassurance doesn't work)

b. **REM disorder**

Nightmare

→ Happens in REM
→ Child gets up in the night after seeing a scary dream and tells the parent that he saw a scary dream, because it happens in a REM, so he is able to remember it.

Sexual disorder

Gender – It is the sense of being a male or a female.
Usually, anatomical sex organs (Sex) and gender are same but when there is a mismatch in that, for eg. a person with male genitalia considers himself to be a female. Such a mismatch is referred as gender identity disorder.

Gender identity disorder (GID):

Types

1.Gender identity disorder of childhood (GID Of Childhood) –

- Seen in preschool years
- Characterized by preference of playing and dressing in a manner that a person from opposite sex would do.
  For e.g. boy prefers playing with dolls over cars and guns or likes wearing frock.
- Express a desire to belong to other gender but rejection of anatomical sense organs is rarely seen.

2.Transexualism –

- Seen in adolescents and adults.
- Sense of discomfort with anatomical sex organs & desires to get rid of them is seen .
- There is a desire to get sex organs of opposite sex.
  For e.g. a male wants to get rid of his penis or testicles and wants to have a vagina and breast to look and live like a female.
- Phrases like– "I am a male in a female's body" or vice versa are quite characteristic of it.
- Diagnosis- made by observing for a long period of time to be very certain of diagnosis.
- R_x- Sex Reassignment Surgery (SRS). Hormonal treatment to be started before surgery and to be continued for the rest of life.

3.Dual role Transvestism –

- Episodes of cross dressing are seen to have a sense of belonging to opposite sex. They wanna experince how it feels to be a female.
- There is no sexual arousal during the episode. (Sexual arousal on cross dressing is seen in cases of fetishistic transvestism)
- No discomfort with one's sexual organs.

In DSM-V, GID has been changed to newer diagnosis "Gender Dysphoria".

Disorders of sexual orientation

- Homosexuality is not considered abnormal (Considered as normal variant)
- Ego syntonic
- Ego dystonic

Sexual Response Cycle

There are **4 stages** seen in this cycle

1. **Desire**: Characterized by a desire to have a sexual act.
2. **Excitement** (Arousal) – Physiological changes are seen in the body.

For e.g. In males along with erection, enlargement and elevation of testis in seen.

Vaginal lubrication

Erection of nipples

Thickening of labia minora and clitoris

↑ in HR, RR & BP can be seen.

} Seen in females

This stage can last for several minutes to several hours and peaks at the end which is called as plateau phase.

Plateau phase – Intensification of the excitement phase.

3. **Orgasm** – It is the smallest phase, continues for 3-15 seconds.
   - In males, peaking of pleasure along with ejaculation
   - In females, there is involuntarily contraction of vagina along with contraction of uretic fundus going towards the cervix.
4. **Resolution** - Body goes back to its normal state, lasts for 10-15 minutes or may continue for half a day in the absence of orgasm.

Disorders of desires

Hypoactive sexual desire disorder

Lack of desire to indulge in sexual activity, mostly seen in females.

Rx- Flibanserin (DA- significant hypotension).

Bremelanotide

In DSM-IV, Sexual Aversion Disorder is described as active avoidance of sex. In DSM-V, this order has been removed and clubbed along with hypoactive sexual disorder.

Disorders of arousal

1.Erectile dysfunction – Seen in males. There is persistent inability to either achieve or maintain the erection required for sexual intercourse.

Most common cause- psychogenic causes like anxiety

Two types of Erectile dysfunction:

a. Organic erectile dysfunction – Due to abnormality in either vascular or nerve apparatus.
b. Psychogenic erectile dysfunction- Due to psychological causes.

In psychogenic ED, nocturnal and early morning erections are seen as there is no stressful condition but these erections can't be seen in organic causes.

Tests –

1. Plethysonography
2. Nocturnal Penile Intumescence

Rx : Pharmacotherapy

1. **PDE-5 Inhibitors** (DOC) – Sildenafil, Tadalafil, Avanafil, vardenafil
2. Oral Phentolamine
3. Alprostadil – Can be used as intraurethral or as injectable.

Psychotherapy:

1.Dual Sex therapy (Master's & Johnsons technique): Couple is treated in it as a unit.

As per this therapy, sensory awareness between the couple needs to be improved to treat this as well as many other sexual disorders.

Communication also needs to be improved between the couple

Technique named as Sensate Focus was given for sensory awareness

↓

First step - Non genital sensate focus

f/b

Next step - Genital sensate focus

2.Female sexual arousal disorder – Characterized by poor lubrication during the act of sexual intercourse.

Rx - Vaginal lubricants

Disorders of orgasm

1.Premature ejaculation – Seen in males.

There is a pattern of persistent ejaculation by minimum sexual stimulation or immediately after vaginal penetration.

As per DSM-V, repeated ejaculation in less than one minute is the criteria for premature ejaculation.

Etiology - Mostly psychogenic

Rx – **i. Pharmacotherapy** - Given S.O.S before the intercourse.

- SSRI
- Clomipramine
- Tramadol use suggested by some studies

ii. Behavioral techniques

a. **Squeeze technique**- When the male feels that he is about to ejaculate, his penis squeezed slightly at corona of the penis to cause mild pain and to delay ejaculation.

b. **Stop & start technique- (Semen's technique)** A gap of 20-30 seconds is taken between the intercourse whenever he likes he is about to ejaculate and then starts again after the gap.

c. **Master's and Johnsons technique**- Can also be used

2.Anorgasmia – Common in female, there is inability to achieve orgasm.

R_x- Psychotherapy

Other disorders

Dyspareunia – Pain before/during/after sex can be seen in both the sexes.

Vaginismus – Involuntary contraction of lower one-third of vagina when sexual intercourse is attempted. Because of it, penial penetration becomes impossible.

In DSM-V, both dyspareunia and vaginismus are clubbed together as Genito pelvic pain /penetration disorders.

Child Psychiatry

Attention Deficit Hyperactivity Disorder (ADHD):

→ Most common Neuropsychiatric disorder of childhood

→ Previously it is called as **Minimal brain dysfunction**

→ According to **ICD 10**, it is called as Hyperkinetic disorder.

→ But according to **DSM & ICD 11**, it is known as ADHD.

→ ADHD is **more common in Boys**

Symptoms:

→ **Inattention**: (Not able to give attention to close details, make frequent mistakes, distractible & shifts activities and unable to finish any tasks)

→ **Hyperactivity** (Keeps on roaming in class, disturbs other students)

→ **Impulsivity** (Unable to wait for his turn, answers before question is complete, interfere in others talks)

→ Other symptoms include, **Destructive behavior, irritability, and aggression.**

→ Soft neurological signs- these are fine abnormalities found out after detailed examination. (E.g difficulty in copying age appropriate figures, difficulty in rapidly alternating movements, right left discrimination). These are also found in schizophrenia

According to latest DSM 5 changes, symptoms should start before 12 years of age but previously it was 7 years of age)

Types: According to DSM-5

1. **Predominantly hyperactive/impulsive**
2. **Predominantly inattentive**
3. **Combined**

→ When these ADHD children reach puberty / adolescence lot of symptoms get better especially Hyperactivity and impulsivity.

→ Around 50% achieve remission by puberty, rest are vulnerable to,

- Substance use disorders (Alcoholism)
- Antisocial Personality disorder
- Mood disorders like depression

→ Hence, a serious illness needs Pharmacotherapy

Pharmacotherapy:

Stimulants	Non stimulants
Methylphenidate, dexmethylphenidate	Atomoxetine
Amphetamines	Bupropion
Modafinil	Clonidine, Guanfacine
	Venlafaxine

→ Stimulants are the preferred group of drugs in children with ADHD

→ Methylphenidate is the **drug of choice for ADHD children**

→ Stimulants help in treating the under stimulation of brain in ADHD (In ADHD there is compensatory hyperactivity)

→ **Stimulants should be avoided** in patients with ADHD with seizure disorder because it stimulates the condition.

→ Apart from pharmacotherapy, Psychotherapy treatments like Behavioral therapy (BT) and Cognitive Behavioral therapy (CBT) are used.

→ Social skills training should be given

→ Psychoeducation of the parents i.e., Parents should be informed with the illness and treatment of the patient

Pervasive Developmental Disorders:

→ Group of Neurodevelopmental (Neuropsychiatric) disorder

A. Autism

→ **Impairment in social interaction (Reciprocal social skills poor)**

- Poor eye contact, lack of social smile and anticipatory posture absent.
- Poor attachment to parents and others
- If routines are disturbed, may have an excessive reaction
- Difficulty in making friends

→ **Restricted, repeated & stereotype behaviors**

- Repetitive plays
- Stereotyped movements like hand wringing, spinning and head banging
- Lack of imagination

→ **Impairment of communication and language**

- Delayed language milestones, motor milestones normal
- Abnormal sentences, pronoun reversal

→ Also, abnormal responses to stimuli

→ **Higher threshold for pain and less/no sensations for spinning movements.**

→ Extreme interest in certain sounds, like ticking of clocks

→ Self destructive behaviors (Biting, scratching, head banging)

→ **Abnormal dermatoglyphics** (Fingerprints)

→ Late development of handedness and lateralization

Associated physical abnormalities like ear malformation and abnormal dermatoglyphics

→ Precocious skills or islets of Precocity e.g. Hyperlexia, calculating ability or rote Memory

→ MMR vaccine and Autism – No correlation

→ Strong genetic basis

→ Onset is before 3 years, more common in boys

Conditions associated with Autism:

→ Fragile X syndrome

→ Tuberous sclerosis

→ Congenital Rubella

→ Phenylketonuria

→ Mental retardation (30% Autism Children)

→ More prevalence of perinatal insults like birth asphyxia.

Treatment:

→ Structured classroom teaching

→ Behavioral therapy,

→ **Low dose Antipsychotics** like Risperidone and Aripiprazole are specifically used to reduce Aggression and Deliberate Self harm.

B. Rett's disorder (Rett's syndrome)

→ Almost exclusively seen in **Females**

→ **Normal development till 5 months**, between 5 to 48 months

- **Deceleration of head circumference (Microcephaly)**
- Loss of acquired hand skills and speech (Pincer grasp may be absent)
- Poor gait, ataxia
- **Three symptoms of Autism** (Restricted repeated patterns of behavior, Disturbances of social interaction, Impairment of communication) are seen.
- **75%** have seizures
- Cause of death is generally cardiac arrythmias.

C. Asperger's syndrome:

→ Asperger's syndrome is similar to autism i.e. **except language dysfunction**, both impaired social interaction and restrictive social interaction are seen.

D. Heller's syndrome (Childhood Disintegrative Disorder)

→ **Normal development till 2 years**

→ Between 2 to 10 years, **loss of acquired motor skills, social skills, bowel & bladder control.**

→ Three core symptoms of autism will develop.

→ According to **ICD – 11** & **DSM – 5** updates,

- These disorders are collectively called as **Autism spectrum disorder**.
- **Language dysfunction has been removed as a criterion.**

Mental Retardation (Intellectual disability):

→ Incomplete development of intellectual functions and adaptive skills

→ **IQ (Intelligence quotient) = Mental age / Chronological age X 10**

Normal	90 – 109
Borderline	70 – 89
Mild MR	50 – 69
Moderate MR	35 – 49
Severe MR	20 – 34
Profound MR	< 20

→ Chronological age of the patient cannot be more than 15 even though it is more than 15, i.e. if the patient of 18 years old with the 7.5 years of mental age, while calculating IQ, the chronological age should be written as 15 even though it is 18.

Category	Class	Mental age as adults	Education	Life	Work
Mild MR	Educable	9 – 12 years	Upto 6th class	Independent living	Unskilled or semiskilled
Mod MR	Trainable	6 – 8 years	Upto 2nd class	Needs support	Unskilled or semiskilled
Severe MR	Dependent	3 – 6 years	No formal education	Needs attention	Simple task under supervision
Profound MR	Needs life support	< 3 years	No formal education	Needs continuous supervision	None

Term	IQ range
Moron	51 - 70
Imbecile	26 – 50
Idiot	0 – 25

→ Most common chromosomal cause of Mental Retardation is Down's syndrome

→ 2nd most common chromosomal cause of Mental Retardation is Fragile X syndrome.

→ For Behavioral problems: Contingency management: Rewarding desirable behavior.

→ Antipsychotics can also be used in some cases.

Learning Disorders:

→ Significant impairment in one or more scholastic skills, out of proportion to intellectual functioning (Usually IQ is normal), **only in a particular domain pt. faces problems.**

→ Specific reading disorder (Dyslexia)

→ Disorders of written expression **(Specific spelling disorder) – makes frequent spelling mistakes.**

→ Specific disorders of arithmetic skills

→ Mixed disorders of scholastic skills.

Disruptive Behavioral Disorders:

A. Conduct disorder – Pattern of 'disregard for rights of others' and aggressive and dissocial behavior

→ **Stealing, repeated lying**, aggression, bullying, **cruelty towards animals**, disobedience or defiance of authorities, running away from school.

→ **Boys** – More physical and relational aggression

→ **Girls** – More relational aggression
→ Later development of antisocial personality disorder and substance abuse.
→ **Low resting heart rate** – A predictor of chronic aggression and conduct disorder

B. Oppositional defiant disorder – Negativistic and defiant behavior towards adults and authority figures. Deliberately annoys parents and teachers.
Gross violation of social norms is not seen.
Management:
→ Behavioral therapy, Family therapy
→ Low dose antipsychotics

TIC Disorders:

→ Tics are brief, rapid, recurrent motor movements (Motor tics) or vocalizations (vocal tics)
→ Performed in response to internal urges
→ Simple (Blinking, shoulder shrugging) or complex types (Jumping)
→ Echolalia (Repeating of others speech), echopraxia (Mimicking others behavior)
→ Coprolalia (Use of obscene words), copropraxia (Making obscene gestures)

Tourette's Syndrome:

→ Multiple motor tics and one or more vocal tics
→ Most common comorbidity is ADHD

→ Others OCD, depression
→ Onset: 4 to 6 years, peak 10 to 12 years, remission by adolescence or young adulthood (In half to two third)
→ **Males > Females**

T/T of choice is behavioral therapy

→ Habit reversal therapy-
Focus and identify the urge and do some alternating acceptable behavior
→ Clonidine and Guanfacine (First line)
→ Risperidone
→ Haloperidol, Pimozide (FDA approved)

Psychoanalysis

Psychoanalysis definition:

→ **Sigmund Freud** is the Father of Psychoanalysis.

→ Childhood experiences and memories & unconscious internal conflicts are responsible for psychiatric disorder in children

→ Psychoanalysis – Term used for **both theory as well as the treatment** method

→ In 1900, **'Interpretation of dreams'** was published.

→ Topographical theory of mind given by **Freud:**

There are three parts of mind:

- Conscious mind –
- Preconscious mind – Contains things that need effort to recall.
  - Prevents content of unconscious mind going to the conscious mind (Repression).
  - Needs some effort to recall.
- Unconscious mind – Has content which the person is not able to recall. Distressing memories and instinctual drives (i.e. drives and desires one is born with).

Unconscious mind:

→ works on **Primary process thinking**

→ Immediate 'Wish fulfilment' and instinctual discharge

→ Illogical and contradictory

Dreams:

→ Interpretation of dreams

→ Dreams **allow unconscious unacceptable impulses** and **desires to reach conscious mind**

→ Needs transformation – **"Dream work"**

→ Latent content (original content) ⟹ Manifest content (Dream content)

→ Involves attachment with images from current experience

→ **Mechanism involved in dream work**:

- Displacement – example: Drive to hit father displaced on to the dog
- Condensation (Converse irradiation) – Multiple drives and images condensed together in a single dream
- Symbolic representation – Symbols seen in place of distressing content

Techniques to access unconscious mind

→ **Interpretation of dreams**

→ **Free association**

Patient is made to lie on a couch, and the doctor stands behind the patient. Patient is allowed to speak whatever comes in his or her mind. There should not be any kind of censorship while speaking.

- Unguided communication
- Slips of tongue 'Parapraxis'

→ **Transference** – Feeling that patient develops for doctor. Combination of feeling that patient had for figures from past, plus real feeling for the doctor. For eg: if the patient gets reminded of father who abused her in childhood by seeing the doctor, the patient may dislike the doctor.

→ **Counter transference**- Feeling that doctor develops for patient. For eg: if the patient reminds the doctor of a patient who didn't give fees yesterday, the doctor may dislike the patient.

→ **Abreaction**: Recall of memory with release of emotions

→ Structural Theory of Mind:

- Id – Pleasure principle
- Ego – Reality principle
- Superego – Moral principle

Structural theories of mind:

Id:

→ Most primitive part

→ Instincts

→ Pleasure principle

→ Completely in unconscious domain and used primary process thinking

Ego:

→ **Reality principle**

→ Part that deals with the external world

→ Maintains a balance

→ Executive organ of mind

→ Both unconscious and conscious components.

Superego:

→ **Moral principle**

→ Mostly unconscious, but has conscious component too

Defense mechanisms:

→ These are mechanisms used by ego to prevent buildup of excessive anxiety. They are unconscious

Narcissistic defenses:

→ **Denial**: Refusal to accept the reality. For eg: mother not accepting the news of death of her son.

→ **Projection**: Transfer of feelings about a person, on to, that person.

For eg: Husband wants to cheat on his wife, so he projects on his wife that she is cheating on me and then cheats with his wife.

- Involved in development of hallucinations and delusions

Immature defenses:

→ **Acting out** – Acting on an unconscious desire without becoming aware of it.
  - Involved in impulse control disorder

→ **Passive aggressive**: Expression of feelings in an indirect way

→ **Regression**: Return to an earlier stage of development. Involved in neurosis
for eg: a pg aspirant playing cricket in street with children.

→ **Projective identification** – Intolerable aspects of self are projected on to another person, that person is induced to play the projected part and the two persons act in unison. Seen in borderline personality disorder.

Neurotic defenses:

→ **Displacement** – Transfer of emotions from one individual to another. Involved in **phobias**

→ **Repression** – Loss of memory and loss of access to it.

→ **Rationalization** – Giving a logical reason for an unacceptable behavior. Involved in substance use disorder. For eg an alcoholic giving reason of pain in his life as a reason for drinking.

→ **Reaction formation** – Transforming an impulse into its exact opposite behavior. For eg you want to go on a date on valentine's day but no girl is ready to go with you. So you join a group that prevents celebration of valentine's day saying it is against Indian culture.

→ **Intellectualization** – Excessive use of intellect to avoid the painful emotions

→ **Isolation of affect** – Removing the feelings associated with a stressful live event. For eg a female describing her family that she is diagnosed with breast cancer without any emotions.

→ **Undoing** – An act is done to nullify the previous act. Seen in OCD

→ **Aim inhibition** – An aim is limited, and partial fulfilment of desires is accepted.

Mature defenses (SAHAS):

→ **Sublimation**: Transformation of a socially unacceptable impulse into socially acceptable behavior. For e.g. person who loves blood and flesh may become surgeon or orthopaedician in future.

→ **Anticipation**: Preparing in advance for an unpleasant situation.

→ **Humor**: Use of comedy to deal with unpleasant situation.

→ **Altruism**: Use of social cause to deal with own emotion

→ **Suppression**: Loss of a memory which can be easily brought back. Only conscious defense mechanism.

Defense Mechanism

These are mechanisms used by ego to prevent buildup of excessive anxiety. They are unconscious

1. OCD – DURII
   a. **D**isplacement-Transfer of emotions from one individual to another (Used in Phobia)
   b. **U**ndoing-An act to nullify the previous act

c. Reaction formation-Transforming an impulse into its exact behavior
d. Inhibition (Aim inhibition)-Accepting partial fulfilment of desires
e. Isolation of effect-Removing feelings associated with a stressful event

2. **Phobia** – Displacement and inhibition
3. **Neurosis** – Regression

Psychosexual stages of development:

Given by Sigmund Freud

1. Oral stage (0 – 1.5 years)
2. Anal stage (1.5 – 3 years): Fixation – OCD
3. Phallic stage (3 – 5 years)
    - **Oedipus complex** – Castration anxiety
    - **Electra complex**
    - **Fixation** – Neurosis
4. Latent stage (5 – 12 years)
5. Genital stage (12 years till young adulthood)

Miscellaneous

Electroconvulsive Therapy

"Electricity used to induce seizures = **ECT**"

Direct ECT:

Anesthetic Agents & muscle relaxants are not used. High incidence of fractures or teeth dislocations

Indirect ECT or (Modified ECT) – Both are used

"Methohexital" is the **anesthetic agent of choice**

Electrode placement

- B/L ECT = Bi-frontotemporal electrode placement or bifrontal electrode placement
- U/L ECT: To further ↓ the s/e
  - Right U/L ECT
  - Dose response relationship is seen

Mechanism of Action:

- Change in neurotransmitters
- Increases BDNF (Brain derived neurotrophic factor)
- Neurogenesis in areas of brain like hippocampus

Indications

- **Depression**
  - With suicide risk
  - With stupor
  - Psychotic depression
  - Intolerance to drugs
- **Catatonic schizophrenia**
  - Not effective in chronic schizophrenia patients
- **Mania**
- **Others** – Intractable seizures, NMS, Delirium, Parkinson's d/s

S/E

1. Memory disturbances: Retrograde amnesia > anterograde amnesia
2. Headache, muscle aches, fractures, tooth dislocations, rarely delirium
3. Prolonged seizures: For more than 180 seconds
   - No absolute contraindication
   - In past raised ICT was the only absolute C/I (Like brain tumor etc)

Cognitive developmental stages: -

- Development of thinking process as the child grows
- It develops in 4 stages. By Jean Piaget

A. Sensorimotor Stage: (Birth -2 yrs)

- Learns through sensory observations
- Gradually starts controlling motor functions
- Initially no objects permanence -Here & now thinking; out of sight, out of mind thinking
- In the end of this stage, object permanence develops
- Symbolization – Around 18 months infants develops mental symbols and use word for objects.

B. Stage of preoperational thought (2-7 yrs)

- Extensive use of symbol and language
- Intuitive thought - Lack of reasoning and logic
- Egocentric- Concerned about needs of self, can't consider from others perspective

C. Stage of concrete operations (7-11 yrs)

- Operational thought – Children start seeing others perspective too
- Concrete thinking – Literal thinking (Does not have deep thinking)
- Logical Thinking starts to develop - Able to understand rules and regulations
- Attainment of conservation - Despite change in shape, object remains same
  Attainment of reversibility - Thing can turn into another & back again to original eg water to ice and back to water

D. Stage of formal operations (11 yrs to End of Adolescence)

- Abstract thinking – Can understand deeper meanings
- Thinking becomes logical
- Concepts of permutation & combination, probability develops
- Development of hypothetic deductive thinking – Makes hypothesis by observing things

Learning theory

- Learning is acquisition of new behavioral pattern

1. Classical conditioning – Pavlov's experiment

- A neutral stimulus also starts producing response, if paired repeatedly with one that results in a natural response
- Unconditioned stimulus: Smell of food
- Unconditioned response – Salivation
- Neutral stimulus / conditioned stimulus - Ringing of bell
- Conditioned stimulus - Paired with unconditioned stimulus
- Conditioned response - Salivation
- Extinct – If continue to ring bell and don't give food, leads to stoppage of salivation.
- Stimulus Generalization – Any ringing (Generalized) causes stimulus. Can be seen in chemotherapy patients.

2. **Operant conditioning** (Instrumental conditioning)

- Given by **BF Skinner**
- Frequency of behavior change according to the consequences

a. Positive reinforcement – Frequency of behavior increases because it leads to positive consequences. e.g. chocolates after 1 hr. of study

b. Negative reinforcement – Frequency of behavior increases in order to avoid a negative consequence e.g. cleans room to avoid scolding

c. Punishment – Frequency of behavior decreases as it is followed by negative consequence

d. Extinction – Frequency of behavior decreased because no reward or appreciation

Psychotherapy

A. Behavioral therapy

1. **Systematic desensitization**

- Works on principle of reciprocal inhibition
- If an anxiety provoking structures is provided, while a person is in a relaxed state, the anxiety gets inhibited
- Used in phobias OCD
- Person exposed to increasing degrees of exposures

2. **Therapeutic graded exposure or exposure & response prevention**

- Used in phobias OCD
- Similar to systematic desensitization except there is no relaxation

3. **Flooding** – Give max stimuli in the first exposure
4. **Modeling (Participant modeling)**
5. **Assertiveness training** – assertive while asking for rights & saying no to unjust demands.
6. **Social skills training**
7. **Aversive conditioning (Aversive therapy)**

- Uses classical conditioning
- Treatment of unwanted behaviors (Such as paraphilias)
- Asked to imagine, followed by giving a painful stimulus (Like electric shock)
- Association develops between unwanted behavior & painful stimuli
- Behavioral therapy is primary used for anxiety disorders, can be used for other disorders.

8. **Biofeedback**

- Uses principle of operant conditioning
- Basic ideas are that ANS, can be brought under voluntary control using operant conditioning
- Used in disorder which are caused by dysfunction in autonomic systems such as tension headaches, asthma etc.
- Uses a feedback instrument
- That provides patient feedback about current state of specific autonomic functions
- E.g.: an electromyogram may give patient feedback about muscle tone in a particular muscle.
- Using this feedback patients learns to control the muscle tone and disorders **(Such as bruxism)**

B. Cognitive therapy:

- Cognition (Thoughts) are important for development of psychiatric disorders
- Early experiences, may lead to cognitive distortions (Wrong patterns of thinking)
- Cognitive distortions may lead to negative automatic thoughts
- Cognitive therapy – Identify and correct negative automatic thoughts & cognitive distortions
- Cognitive behavioral therapy = Cognitive + Behavioral therapy

Cognitive distortions

a. All or nothing thinking
b. Approval seeking – One should be like by all, otherwise life is terrible
c. Disqualifying positive – Not acknowledging positive events
d. Emotional reasoning – Belief that emotions reflect the reality. If it doesn't feel okay, it's not okay
e. Fallacy of fairness – Making random events as an issue of justice
f. Jumping to conclusions
g. Labelling mislabeling – Giving labels to self or others
h. Magnification (Catastrophizing) Giving lot of importance to an event and **minimization** – giving less importance to an event than required
i. Mental filtering (Selective perception) – Fixation on single thing not focusing on others
j. Over generalization
k. Personalization – Blaming self for event, for which one is not responsible.
l. Should statements – Having a lot of rules about how self & others should behave. Have lot of should statements.

Substance use disorders (Psychosocial treatment)

Transtheoretical model of change

1. Pre-contemplation – Person taking substance does not think it's a problem
2. Contemplation – Starts realizing that he has a problem, evaluates pros and cons
3. Preparation - Takes a decision & starts planning
4. Action - Quits and makes changes in behavior
5. Maintenance

Neuropsychological tests: -

- Neuropsychology – Examines relationship b/w behavior & brain functioning
- Attempt is made to locate area of disturbance on basis of behavioral symptoms (Cognitive, sensory motor or emotional)

A. Intelligence testing

- Wechsler adult intelligence scale
- Malin's intelligence scale for Indian children (MISIC)
- Bhatia's battery of performance test of intelligence

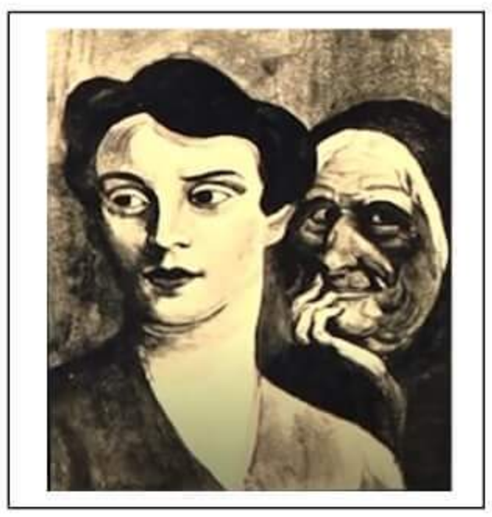
B. Personality assessment

- *Objective test*: e.g.: Minnesota multiphasic personality inventory (MMPI)
- *Projective tests:*
  - Patients are given ambiguous stimuli and he has to interpret it.
  - In doing so his internal thoughts process and emotional factors get projected
  - These can be analyzed to deduce the aspects of an individual's personality

a. *Rorschach tests* – Shown 10 cards that have ink blots.

b. *Thematic apperception test (TAT)*

- Shown a picture, asked make a story



c. *Sentence completion test*

An incomplete sentence is given to patient and asked to complete

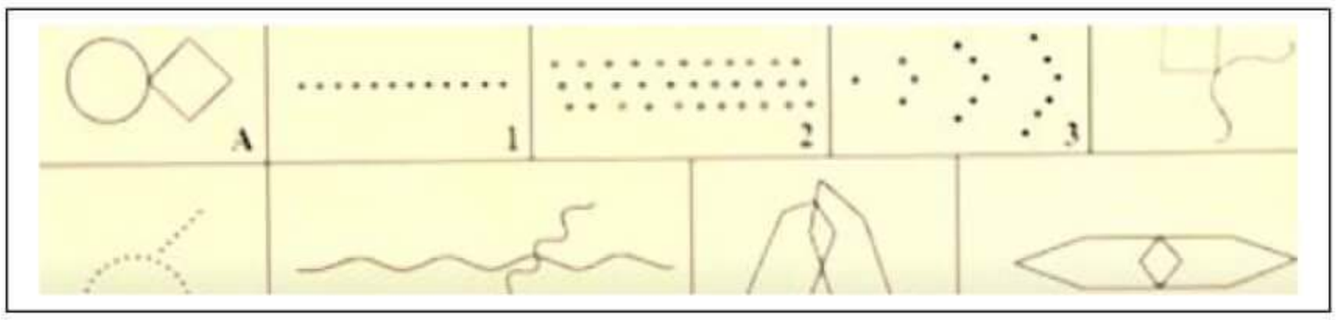
E.g. I wish I---------

d. *Word association technique* – Patient is supposed to say first word coming in his mind on being given a random word.

e. *Drawn a person test (DAPT)*- Patient asked to draw something and then he is asked why he has drawn it.

C. Neuropsychological assessment for brain disorder (Organic mental disorders)

a. Bender Gestalt test. Screening tool for organic mental disorder



b. Luria Nebraska neuropsychological battery

c. Halstead Reitan battery of neuropsychological test

Mental Health Care Act, 2017 (MHCA 2017)

- Rights of patients with mental illness and treatment delivery

a. Every person (Include patients with mental illness) is presumed to have **capacity to make mental healthcare and Rx decision**, if he –

- Can understand the information provided to them
- Understands the consequences of his decisions
- Can communicate their decision

b. **Advanced directive** – Every person (Not a minor) can make an advanced directive –

- How they wish to be treated / not treated for mental illness.
- Applicable only if loss of capacity to take mental health care or treatment
- Doctor must be provided advanced directive written and signed by patient
- Duty of psychiatrist (Or mental officer) to follow it
- Doctor not liable in case of unforeseen consequences

c. **Nominated representative (NR)**

- Every person can appoint a nominated representative
- In case of loss of capacity, NR would help in taking decisions about treatment

Note

- Advanced directive always given priority over NR.
- If in case the decision capacity of the person remains intact despite mental illness, the decision of nominated representative will not be applicable.

d. **Admission**

- Independent admissions – Patient himself wants to be admitted
- Supported admission – Patient admitted on the decision of NR

e. **Ban on direct ECT**

f. **Ban on ECT for minors**

g. **Ban on psycho surgery**

Note – Both ECT and Psychosurgery can be given if doctor strongly feels that it will help the patient. He must take permission from caretaker and must give an application to mental health review board. Only modified ECT can be given.

h. **Decriminalization of suicide attempt**

i. **Restrains and seclusions** can be given –

- If it is the only way to prevent them to self or others
- If authorized by psychiatric in charge.

Spikes protocol:

- Protocol to break bad news to patients about their illness.

S – Setting of interviews (Privacy concerns, involves significant others, sitting down)

P – Assess the patients' perception (What he knows / perceives about his condition)

Domestic abuse (Spouse abuse)

- Usually involves assault on wife by husband
- Traits of perpetrator

Higher Mental Function

1. **Attention** – Attention is defined as ability to attend to a specific stimulus without getting distracted.

For e.g.:

If you are listening to a lecture multiple things might be happening in your room (Other students, sound of fan, noise of air conditioner) but you are not giving importance to other unnecessary stimuli and you are focused only on the lecture. This signifies attention

How to test attention:

By Digit Span test / Digit Repetition test – In this test the patient has to repeat the digits which Doctor will say.

For e.g.:

- Doctor: Three, Seven
- Patient: Three, Seven
- Doctor: Three, Six, Eight
- Patient: Three, Six, Eight
- Doctor: Two, Seven, Five, Four
- Patient: Two, Seven, Five, Four
- Doctor: Two, Eight, Five, Three, Nine
- If Patient says: Two, Eight, Five, Three, nine → **Attention is Normal** (If patient is able to **repeat five digits** then his attention is considered as Normal)

Digit Backward Test: Variation of Digit Span test / Digit Repetition test

For e.g.:

- Doctor: Two, Five
- Patient: Five, Two
- Doctor: Two, Eight, Six
- Patient: Six, Eight, Two

Digit Forward test is preferred more over Digit Backward Test.

Standard textbook says **Digit backward involves more mental ability than Digit forward.**

2. **Concentration** – It is ability to **sustain attention**

For e.g.: If you are able to listen to this lecture attentively for 30 minutes with proper concentration.

How to check concentration – **Serial 7 subtraction**

Doctor: Subtract serially 7 from hundred (At least five times)

Patient: 93

Patient: 86

Patient:79

Patient:72

Patient:65