Behavioural Science

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Sheet number: final 2

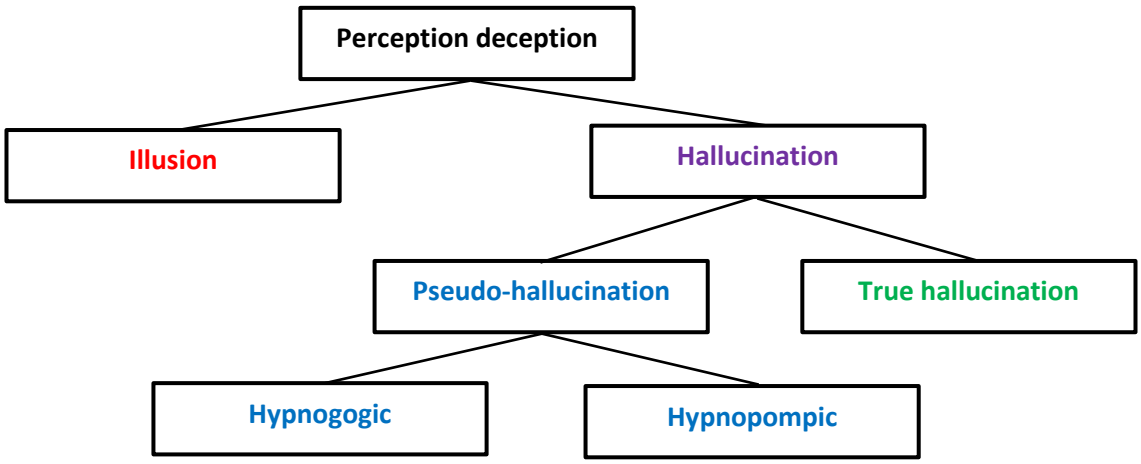
Sheet subject: Perceptual Disorders

In order to have memories, you should have a good perception and the perceptual processes provide the basis for mental representation of the visual, auditory, olfactory, gustatory, somatosensory sensations, e.g: to remember the shape of something you must see it first and to remember the voice of anything you have to hear it first. But sometimes this perception has a disorder, so what are these disorders that affect perception?

- These disorders can affect all previously mentioned sensations (vision, hearing, smelling, gustation and somatosensation).
- Disorders of perception can be divided into perception distortions (there is a constant real perceptual object, which is perceived in a distorted way) and perception deceptions (a new perception occurs that may or may not be in response to external stimuli; false perception).

Perception deception (sensory deception):

It is a new perception that may occur in response to external object or without the presence of external object, based on this definition it can be divided into:



Illusion: misinterpretations of stimuli arising from an external object (stimuli from a perceived object are combined with a mental image to produce a false perception), for example: the patient will misinterrupt a rope on the ground as a snack, or a shadow on the wall as a threatening attacker, here note that there is an **external stimulus that is exist in reality** (rope & shadow).
*Illusions are derived from lack of perceptual clarity (clouded consciousness), for example: it can be seen in patients with organic disorders with clouded consciousness, such as an old patient who had a surgery recently.
Hallucinations: perceptions **without an external stimulus**. It is further divided into pseudo-hallucinations & true hallucinations.

- **Pseudo-hallucination:** a type of mental image that, although clear and vivid, lack the substantiality of perceptions; they are seen in **full consciousness,** known by the patient to be not real perceptions and are located not in objective space but in subjective space (things are going just through the patient's mind), for example: when you put your head on the pillow but yet you don't fall asleep (still in conscious state) and you hear different voices like someone calling your name or sounds inside your head when there is no one present around you in reality.
- **Hallucination (true hallucinations):** is a perception in the **absence** of **external stimulus** that has qualities of real perception. True hallucinations are vivid, substantial, and are perceived to be located in external objective space (they have veridical perceptual qualities in the sense that individuals are often convinced of the objective reality of the experience).

True hallucinations *vs.* pseudo-hallucinations

- True hallucination makes you feel like there is an incident going around you (in the external objective space). While Pseudo-hallucination occurs just inside your head (in subjective space).
- The effect of true hallucination is strong as compared to the effect of pseudo-hallucinations.
- The presence of pseudo-hallucinations does not necessarily indicate psychopathology, unlike true hallucinations, which are indicative of serious mental illness.
- Although pseudo-hallucinations are clear and vivid, but they lack the substantiality of real perceptions, while for true hallucinations they have the qualities of real perception.

Hallucinations of sensory perception

Hallucinations of individual senses are divided into: Visual Hallucinations, Auditory Hallucinations, Olfactory Hallucinations, Gustatory Hallucinations and Somatosensory Hallucinations.

❖ *Auditory Hallucinations:*

Auditory hallucinations are false perceptions of sound, most common in schizophrenic patents and less common in patents with organic psychosis. *(auditory hallucinations is the commonest in schizophrenia among other sensory hallucinations), they are of two types:

- Elementary Auditory Hallucinations: noises, bells or undifferentiated whispers.
- Organized Auditory Hallucinations: clear spoken words.

There are three main categories into which the hearing of talking voices often fall:

1- Imperative (Commandry) Hallucinations: a false perception which issues a command (voices giving instructions to the patient, may or may not act upon them), for example: the patient may hear voices which tell him to kill himself or his kids to save them for example.
2- Third person hallucinations: patient hear voices talking about himself, referring to him as "he", the maybe in the form of commentary speech "he is eating the breakfast, he is driving his car and soon", this is called Running commentary Hallucinations.
3- Thought echo: hearing one's own thoughts being spoken loudly, sometimes the patient think that nearby people hear his thoughts, so he tends to stay away from people.

Special kinds of hallucination:

- ***Functional Auditory hallucinations*** are a rare phenomenon, wherein hallucinations are triggered by external stimulus in the same modality and co-occur with it.

e.g. hallucinated voices heard simultaneously with the real sound of running water.

- ***Reflex Auditory hallucinations*** is the experience of a stimulus in one sense modality producing a sensory experience as a reflex in another modality. For example, the feeling of cold in one's spine on hearing a fingernail scratch a blackboard.

e.g. one patient described hearing his own reflection and said that when attempting to carry out some action he could hear himself doing so.

- ***Extracampine hallucinations:*** rare disorder in schizophrenic patents in which the patient has a hallucination that is outside the limits of the sensory field, they could by visual or auditory as in the following examples.

e.g. a patient sees somebody standing behind them when they are looking straight ahead* or hear somebody's voice talking to him while the patents in London and the other person lives in Liverpool.

*(ينظر الى الامام ويقول انه يرى شخصا ما يسير خلفه-وهذا خارج مجال الرؤية لديه)

The content of voices heard differs from one patient to another, usually patients who suffer from schizophrenia hear violent voices with bad content these abusive voice will noise the patient and make him complain from them, but rarely the content of these voices is friendly and reassuring, and in chronic conditions the patient will cop with these friendly voices.
Patients suffer from depression will hear **depressive hallucinatory voices** which are abusive for the patient, but unlike schizophrenic patient the patient here will not complain the voices and try to **justify them**, e.g. the voices will tell the patient that he is loser and the patient will say "yes these voices are right, I'm loser".

- ***Organic Auditory hallucinations:*** here the patient will hear single words and not a dialog as in schizophrenia (organic auditory hallucinations are caused typically by a physical wrong in the brain).

In young educated* male patients the onset of voices will be **acute** with **violent content**, this will end with patient **suicide** (its very common in the first five years of the disease).
*educated: as the patient knows who bad the disease is.
Sometimes the patient **manages to ignore** the voices, usually by distraction technique; when the patient starts to hear the voices, he should distract them by turning the TV on or by reading a newspaper, this will success in some patients but others will fall to distract the voices. Some patients will try to attribute these voices to different sources, like saying these voices are coming from the TV.

❖ ***Visual Hallucinations:***

A visual hallucination is a perception of an external visual stimulus where none exists, its more common in organic psychosis, if **50 years old** patient present to your clinic with **visual hallucination without previous history of psychotic disorders** you must rule out **organic pathology** (especially temporal lobe epilepsy).
Some patients experience visual and auditory hallucinations of a dead loved one, like seeing that the dead person is sitting beside him and talk to him. (the doctor mentioned the name of this phenomenon, but I didn't understand the word as the voice is too low).
Visual hallucinations are of two forms:

- ***Elementary visual hallucinations***; in the form of flashes of light
- ***Organized visual hallucinations***; in the form of visions of people, objects or animals and can describe them in detail.

Patients who experience visual hallucinations are: in acute organic state, delirium, acute alcohol withdrawal & bromide intoxication, and as mentioned previously for elderly with clear history you must rule out organic etiology.

❖ ***Olfactory Hallucinations:***

An olfactory hallucination (phantosmia) makes you detect smells that aren't really present in your environment.

- Mostly **associated with delusion** of poisoning; Some patients claim that they smell gas and that their enemies are poisoning them by pumping gas into the room.
- Some patients who suffer from depression or schizophrenia smell a foul odour emitted from there body (while in reality there is no such thing), sometimes these believes is reinforced by people action coincidentally (like putting hanky on their noses).
- Sometimes the patient believe that he doesn't emit a foul odour, but he believes that people think that he emits.
- Sometimes olfactory hallucinations will be present as a part of epileptic shock; e.g. the patient say that he smells unpleasant odour such as burning paint or rubber and this as an indication that the epileptic shock is about to begin.
- In some cases, olfactory hallucinations will be a part of dysmorphophobia; excessive dislike of a part of one's body, here the patients believe that they emit unpleasant odour or there is a problem in their noses.

❖ ***Gustatory Hallucinations:***

Hallucinations of taste occur usually in schizophrenic patient with delusions of poisoning, e.g. the patient experience gustatory hallucinations by believe that the food taste abnormal and its poisoned by his enemy, or the patient may wait until all his family eat from the food then he will eat to ensure that it is safe. These patients may stick to canned food to make sure that nobody has manipulated with their food and poison it.
In sever cases of delusion of poisoning the patient won't eat except from the food that he prepares, and they rarely go to restaurants.

❖ ***Tactile Hallucinations:***

This may take the form of **small animals crawling over the body**, mostly in patients with acute organic state. In **cocaine psychosis** (cocaine toxicosis) this type of hallucination commonly occurs.

schizophrenic patients rarely experience a specific type of tactile hallucinations called “sexual tactile hallucinations”, in male schizophrenic patients they will feel forced erection as they try to extract his semen, while in female schizophrenic patients these hallucinations are associated with many problems as she feels that she was raped, and in some cases she report that her parent or brother (close relative) has raped her and this is associated with legal problems related to Incest.

Hallucinations of deep sensations

- Some patients may complain of twisting and tearing pains.
- In patients with parietal lobe disorders (sever psychosis) they will experience contralateral desensation or reduplication, read the following example to understand the idea:

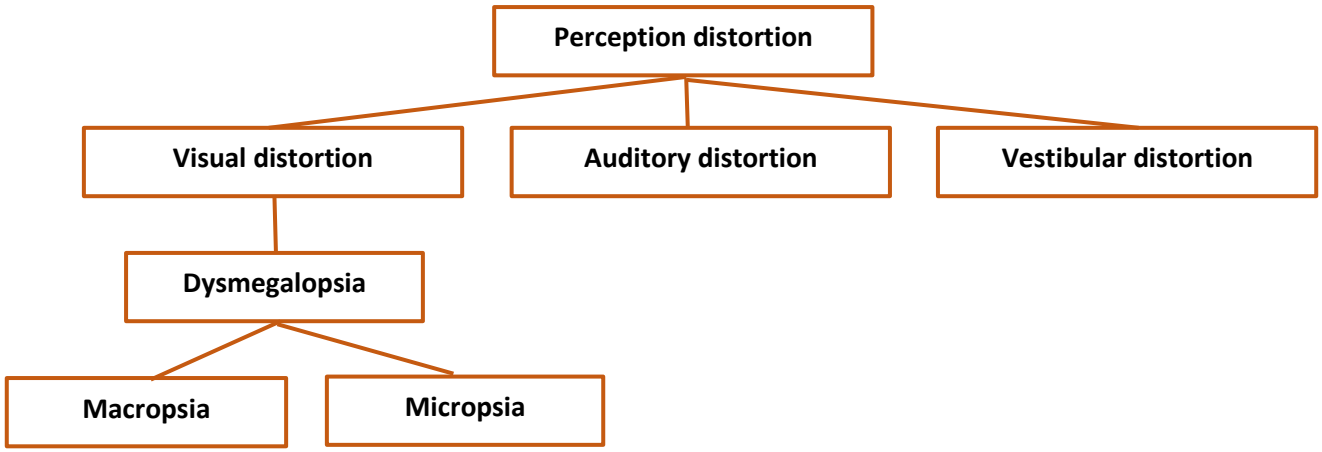
e.g. a patient with right parietal lobe injury may loss the sensation of his left arm and think that it is not for him it is for someone else (similar to what we took in CNS physiology), or he may feel that he has two left arms or two left legs (reduplication).

We end our talk about deception, Now we'll discuss the distortion…

Perception distortion (sensory distortion):

Remember the definition: there is a constant real perceptual object, which is perceived in a distorted way

It can be classified into three categories:



Dysmegalopsia

It refers to a change in the perceived size of an object. Micropsia is a visual disorder in which the patient sees objects as smaller than they really are. The

opposite kind of visual experience is known as macropsia or Megalopsia (objects as larger than their real size).
The terms macropsia and micropsia have also been used to describe the changes of size in hallucinations (***Lilliputian hallucinations***), this type of hallucinations similar to Alice in wonderland as objects appear either smaller or larger than reality.
Also, visual distortion may be experienced in delirium state (usually due to alcohol intoxication), so if a drunk patient present to emergency, then you note him appears as picking up small thing from the bed then mostly he has delirium.

The last thing that we will talk about is "Phantom limb phenomenon"

- Its mostly due to organic psychosis
- In this case the patient feels that he has a limb and may feel sever pain from which in fact they are not receiving any sensations either because it has been amputated or because the sensory pathways from it have been destroyed.

Final Note: if a patient present to you with one of these hallucinations don't forget to do drug screening (alcohol, cocaine,…), as the patient won't tell you for sure and it may not appear on him.

This sheet was written from section 1 record only as there is no slides for this lecture
Sorry for any mistake
Best of luck