

Sleep & Dreams

The last lecture

Lecture objectives

1-Is to learn students about **physiology** of sleep.

2-Is to teach you about the **significance of dreams**.

Introduction

Dreaming indicate that we think while we sleep.

We can remember dreams because we form memories.

Because some people walk in their sleep, Sleep is not entirely quiescent.

Parents are awakened by their babies cry as they are not entirely insensitive to environment during sleep.

Because some people can decide to wake at a given time, Sleep is not entirely plan less.

The normal range of sleep required in normal adult people is between 6 to 9 hours .People who have below or above that range are less healthy physically and mentally and have lower life span.

Stages of sleep

1- **Stage 1** is the lightest, low voltage less regular & decreased in amplitude.

2- **Stage 2** is characterized by **spindles** that is short runs of rhythmical responses of **12-16 HZ** & occasionally **K-complex** that is sharp raise & fall in amplitude of whole EEG.

3- **Stage 3** & **Stage 4**

are characterized by **DELTA waves** that are slow waves of **1-2 HZ**. They tend to occur during **1st part** and to disappear in the last part of night and in elderly.

NREM sleep is characterized by absence of eye movements, decreased heart rate & respiratory rate, muscle relaxation, decreased brain metabolic rate by 25-30%, less dreams which are neither visual nor emotional.

4- **REM sleep** is characterized by rapid eye movements (**10-20/second**), increased heart rate, increased brain metabolic rate, complete paralysis appearance of dreams that are visually vivid with emotional and illogical features & it occur in the last part of night.

Stage 1 for 30 minutes, stage 4 for 30-40 minutes, stage 2 for 30-40 minutes then lastly REM

Sleep theory

Dale Edgar & **William Dement** have proposed an **opponent-process model of sleep & wakefulness** in which brain possesses two opponent processes.

1-**Homeostatic sleep drive** is physiological process that strives to obtain the amount of sleep required for a stable level of day time alertness.

2-**Clock-dependent alerting process**: process in brain that arouses us at a particular time each day. It is affected by exposure to light that lead to stop secretion of melatonin which is a hormone that induce sleep.

Dreams

Dreaming is an alerted state of consciousness in which picture stories are constructed based on memories & current concerns or on fantasies and images

Lucid dreams are dreams in which events seem so normal i.e. lacking the bizarre & illogical characteristics of most dreams.

Theories of dreaming

A-**Psychoanalytic theory**: Freud in 1900 in his book *The interpretation of Dreams* stated that **dreams provide a royal road** to knowledge of the unconscious activities of the mind. Dreams are disguised attempt at wish fulfillment i.e. repressed unacceptable wishes, needs or ideas in unconscious are expressed symbolically to avoid guilt or anxiety.

Dreams content

Latent content is the unconscious and unacceptable thoughts, wishes & feelings that threaten to awake the dreamer.

Manifest content is what is recalled by the dreamer.

Dream work is an unconscious mental operations by which the latent content is transformed into manifest dream content.

Mechanisms of dream work

1-**Condensation** by which several unconscious thoughts, wishes or feelings is transformed into one manifest dream image like a man, women or any other neutral object.

2-**Displacement** by which less acceptable object to ego is diverted to more acceptable object to ego. e.g. murderous wishes toward mother is diverted as murderous wishes toward insignificant person.

3-**Symbolic representation** by which highly charged idea or object plus innocent image connected with object are represented as symbols that either a simple concrete or sensory image

B-**Evan** believed that dreams are reflection of information processing that brain is doing while a sleep.

C-**Recent Theorists** believe that dreaming is a cognitive process which reflect the individuals conceptions, concerns& emotional preoccupations