



CONCEPT OF MEDHA, BUDDHI, MANAS AND MEMORY PROCESSES IN AYURVEDA.....REVIEW

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ABSTRACT

Memory is the means by which we draw on our past experiences in order to use this information in the present. Memory covers three important aspects of information processing that are encoding, storage and retrieval. Due to encoding, information is gained from the outside world through our senses in the form of physical and chemical stimuli. *Buddhi* (intellect) is the powerful entity which gains knowledge by reading, listening or repeating it. *Medha* (retention power) retains the knowledge for a longer period and whenever needed it recalls the

same. In *Ayurveda*, *Buddhi* and *Manas* are more related to the memory process. According to *Charaka*, *Manas* (Mind) is the important sense organ and it has many functions. *Smriti* (memories) helps in recollection of past experiences. The *Ayurvedic* philosophy of *Buddhi*, *Manas*, *Atma* (soul) definitely plays a major role in the processes of memory and cognition.

KEYWORDS: *Buddhi* (Intellect), *Medha* (retention power), *Manas* (Mind), *Atma* (soul), Memory process.

INTRODUCTION

Mind and Intellect are among the events on which man always becomes unsuccessful in achieving a definite conclusion. Now it is required to interpret and conclude those ancient concepts of *Medha* and *Manas* in terms of modern medical and psychological science. *Ayurveda* is the holistic medical science. The term “*Ayu*” is the combination of *Sarira* (body), *Indriya* (senses), *Sattva* (mind) and *Atma* (soul). *Medha* has an effect on the happiness or sorrow of

“Ayu” and is essential for fulfillment of motive of Ayurveda. It averts an individual from indulging into *Pranajaparadha*.^[1]

In *Ayurvedic* science *Medha* (retention power), *Buddhi* (Intellect) and *Manas* (Mind) is more related with the concept of *Smriti* (memories). *Acharya Charaka* describe the list of *Atmaja bhavas Dharanam, Dhriti, Buddhi, Smriti*. *Acharya Sushruta* mentioned *Gnyana-vignyana* in *Atmaja bhavas*.^[2] word *Dharanam* means retention of knowledge for longer period by *Manas*. Thus *Medha* is included in *Atmaja bhava* which is manifest during gestation. *Manas* is the important factor in the process of retention of knowledge it also combine an external environment with the brain through different *Gyanendriyas* (Sense organs).^[3]

Memory is the procedure of maintaining information over time. In human beings, the brain is the centre of the nervous system. It allows them to gather information (sensory system), process on that information (motor system), and store the information for future reference (memory), thus effectively making life possible. It is a large complex organ having an 100 billion neurons passing signals to each other via as many as 1,000 trillion synaptic connections.

It continuously collect and analyzes sensory information and gives a response to all bodily actions and functions by controlling it. It is also centre of higher order thinking, learning and memory, and gives us the ability to think, plan, imagine, speak, dream, reason and experience emotions.^[4]

TYPES OF MEMORY

1. Sensory Memory

Sensory memory is the first stage after information gets to a sense organ. It is large, accurate, but very small, lasting about a second. It is a temporary storage buffer between sensory input and the next stage, short term memory. Each sensory memory briefly holds the information coming through its sense organ (e.g. eye, ear, etc.) visual sensory memory, or iconic memory, lasts about ½ to 1 second ; auditory sensory memory or echoic memory, lasts up to 2-3 second.^[5]

2. Short Term Memory

Short term memory is about the same as what you notice at any given moment, which is the content of your conscious experience. It is the smallest part of memory, because it can not

hold much information at any one time. Its size can be estimated by measuring memory span. Normal memory span is ± 7 items. Short term memory recodes information by linking new information to information already stored and available in long term memory. Recoding is one of several active control processes that short term memory carries out.

The term working memory is often used for short term memory; the central executive part of the prefrontal cortex at the front of the brain appears to play fundamental role in short term memory.^[6]

3. Long Term Memory

A long term memory is anything you remember that happened more than a few minutes ago. Long term memory can last for just few days, or for many years. Long term memory are not all of equal strength. stronger memories enable you to recall an event, procedure, or fact on demand. long term memory is not static, either. You do not imprint a memory and leave it as if untouched. Instead you often revise the memory over time perhaps by merging it with another memory or incorporating what others tell you about the memory. As a result, your memories are not permanent, and are not always reliable.^[7]

There are many different forms of long term memories. The two major subdivision of are explicit memory and implicit memory. Explicit memory are those that you consciously remember, such as an event in your life or a particular fact. Implicit memories are those that you do thinking about, like riding a bike.

Encoding

Encoding is the first stage of memory. As the term suggest, this is the stage of memory which accumulates all the information from the surrounding and encodes or stores it in our brain. The information we take from the world around us is processed in three different forms.

- Visual (picture)
- Acoustic (sound)
- Semantic (meaning)

These different forms are how we take in the information. We either consume information as a picture, a sound, or we make it meaningful. These three different forms are termed as visual, acoustic, and semantic accordingly. Encoding can also be defined as the process used

to remember the information. We retrieve information in the same form we take it in because of this process.^[8]

Storage

This stage deals with nature of the memory where the information is stored, time duration of the memory, the amount of information that can be stored, and type of memory. The manner in which information is stored directly affects the way in which information is retrieved. The information is stored in two main parts of memory. Short term memory and long term memory. Miller stated in 1956 that most adults are capable of storing within 5 to 9 items in their short term memory and he called it the magic number 7 plus or minus 2. There is limited number of slots in short term memory however he didn't specify the amount of information that can be stored in each memory slots. This gives the idea that more than one information can be related and chunked, one upon another. Long term memory have capacity unlimited and information stored can last a whole life time.^[9]

Retrieval

Retrieval is the process of recalling stored information from memory. It is getting information out of long term memory and returning it to conscious mind. There are two main methods of retrieving memories.

- Recognition
- Recall

Recognition is the association of something with something previously experienced. It involves comparing new information with information stored in memory. The recognition process is initiated as a response to sensory cue. Recall is the retrieval of information from memory without a cue. It involves remembering a fact, event, or other information that is currently physical present.^[10]

Ayurvedic Concept of Manas And Buddhi

Manas in *Sanskrit*, means to think, believe, imagine, suppose. It is the internal organ for perception. Link to *Atma* (soul), mind, sense organ and their objects gives the knowledge. *Atman* (soul) is the basis of all experience, while *Manas* (mind) is only instruments of experience. According to *Ayurveda*, it is atomic and iternal. *Manoarthas* which are of two types.^[11]

- ***Indriya Sapeksha Karma***

The function performed with the conjugation of *indriyas* (senses) are *Indriya sapeksha karma*.

- ***Indriya Nirpeksha Karma***

In this type the function which are obtained only with the conjugation of *Manas* (mind) and *Atma* (soul). *Indriyas* do not have role to perform. *Dharna* (concentration), *Samadhi* (deep absorption), *smriti* (memories), *yoga* etc. are some examples of *Indriya Nirpeksha karma*.^[12]

Acharya Charaka described five functions of Manas (Mind)

- *Chintya* (Thinking)-Thinking of what to do & what not to do.
- *Vicharya* (Analysis)- If we do it, will it be beneficial or not.
- *Uhya* (Speculation)- Find out probabilities.
- *Dhyeya* (Goal)- Goal setting
- *Samkalpa* (Decision)- Of doing various activities to achieve a goal.^[13]

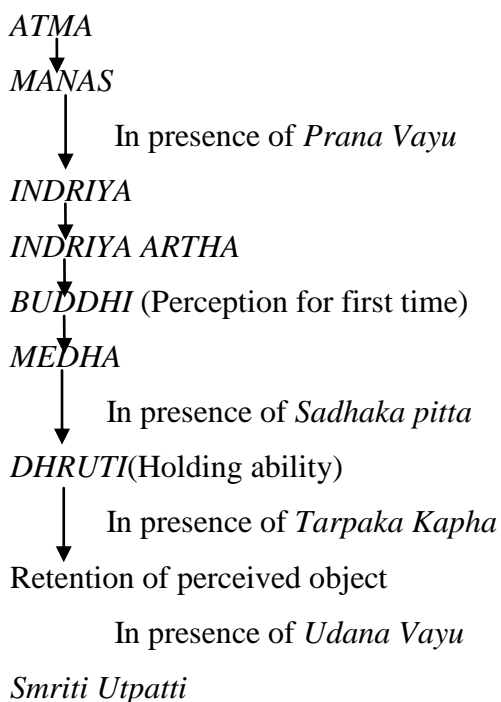
DISCUSSION

We make and store memories by forging new neural pathways to the brain from things we take in through our five senses. The stimuli that nerve cells detect, such as hearing, testing are called sensory memories. That sensory information flows along the nerve cells as an electrical impulse. As that impulse reaches the end of a nerve, it activates neurotransmitters, or chemical messenger. Those neurotransmitters send the message across the space between nerve cell called synapses and move it along to the neurons, or brain cells. To turn short term memories into long term ones, the brain cells would consolidate the information. During this process that neural pathways strengthen because of the brain's plasticity. Long term memory retrieval requires revisiting the nerve pathways the brain formed. The strength of those pathways determines how quickly recall the memory. To reinforce that initial memory, it must move multiple times across the nerve cells, retracting its steps.

Maharshi charaka has described eight causative factors of *Smriti*. Because of these eight factors the recollection of things happened which seems to be forgotten, back in the memory. In Ayurveda *Buddhi* (intellect), *Medha* (power of retention of knowledge), and *Smriti* (memories) are important steps of memory process.

Almost same memory process is conducted by human brain. Sense object conjoins with senses and senses with *Manas* (mind) for the cognition. *Buddhi vyapar* follows just after it. *Buddhi* performs by reasoning and logic and reacts accordingly. Retention of perception takes place under the area of *Medha*. In Ayurvedic classics the word '*Medha*' has been used mainly in 2 ways viz. *Grahan shakti* (grasping power) and *Dharan shakti* (retention power).^[14] When any stimulant comes in mind recollection happens with the help of *Smriti*. Thus in humans also if the knowledge or experiences are not encoded and retained properly then all the efforts of recalling would be in vein. So, *Smriti* wants systematic interpretation and retention.^[15] In this way *Smriti* is caused when encoding, retention and recollection of the experiences unites. In which *Buddhi* (intellect) helps in encoding, *Medha* (power of retention of knowledge) in retention and *Smriti* (memories) facilitates recollection.

PROCESS OF MEMORY



Doshas are the functional characteristics of our body. *Vata* is the main *Dosha* which stimulates the mind for its normal functioning and also control its activities. The main *Dosha* involved for the production of *Smriti* is *Udana vata* situated in *Moordha* and *Ura*. Other than this *Prana Vata* situated in *Ura* maintains the proper function of *Buddhi*, *Manas* and *Indriya*. *Sadhaka Pitta* situated in *hrudaya* is responsible for the proper functioning of *Medha*.^[16] *Tarpaka kapha* situated in head provides nourishment and protection to the centres of sense organs in the brain it help in production of *Dhruti*.

CONCLUSION

Mana is vital Indriya in the process of memory. *Buddhi* (intellect), *Dhriti* (Retention) and *Smriti* (memories) are the words used as the synonyms of *Medha* (Power of retention of knowledge). *Acharya Charaka* has stated to examine the *Medha* by inference of *Grahana Shakti* (grasping). The subject is critically analyzed by logic and reasoning and then is understood by *Dhi*. This entire process of memory can be taken as *Smriti vyapar* that can be considered as grasping, retaining and recalling. These are the distinct stages of the Memory process.

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