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**Biological differences in individuals with Highly Superior
Autobiographical Memory (HSAM)**

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Abstract :

Highly superior autobiographical memory is abbreviated as HSAM.

Hyperthymestic syndrome or hyperthymesia .

It is a memory related phenomena or abnormality which is characterized by the ability to accurately recall an exceptional number of experiences and their associated dates from events occurring throughout much of one's lifetime.

Individuals have the ability to concentrate deeply, blocking out distractions in the environment around them. The source of this ability has only begun to be explored . Alternatively, they can be easily distracted by their memories and lose focus on things going on around them. Also They're more likely to daydream and fantasize.

Introduction:

Individuals who have Highly Superior Autobiographical Memory (HSAM) demonstrate the ability to recall accurately vast amounts of remote salient autobiographical events without the explicit use of mnemonics . HSAM is readily distinguishable from other forms of exceptional memory such as that found in mnemonists. One technique for producing strong memories is through overt intensive memorization of material and or use of mnemonic techniques. In contrast, HSAM individuals report that they do not rehearse their experiences or use mnemonic techniques with the explicit intent to create strong memories, unlike many memory experts. Interestingly, although they have exceptional autobiographical memory, they are no better than control subjects at laboratory memorization tasks .Therefore, the study of individuals who have strong and lasting memories of ordinary daily experiences provides a novel perspective from which to investigate memory encoding, storage, and retrieval . The aim of this report is to demonstrate the biological differences between normal population and individuals with HSAM.

Discussion:

Having HSAM has advantages and disadvantages , anxiety and depression have been found to be a common theme among them which is linked to nonstop, uncontrollable, and automatic. ability of those individuals to remember some events or accidents for example loss of a family member . Surprisingly People with HSAM did not score higher on routine laboratory memory tests or when asked to use rote memory aids. Yet when it came to public or private events that occurred after age 10½, they were remarkably better at recalling the details of their lives. The ability is not the same as a so-called photographic memory, which allows people to vividly recall details from a scene they've only observed for a short time; nor is it the same as a talent held by competitive memory athletes who use mnemonic devices to remember long strings of data, for example.

An MRI study conducted on that Both the temporal lobe and the caudate nucleus were found to be enlarged. The hippocampus, located in the medial

temporal lobe, is involved in the encoding of declarative memory (memory for facts and events), while the temporal cortex is involved in the storage of such memory. The caudate nucleus is primarily associated with procedural memory, in particular habit formation, and is, therefore, intrinsically linked to obsessive-compulsive disorder. It has been speculated that a defective frontostriatal circuit could be responsible for the observed executive function deficits in hyperthymia. This circuit plays a crucial role in neurodevelopmental disorders. Given the parallels in some aspects of behavior, also having more robust white matter linking the middle and front parts, hyperthymic individuals' abilities possibly stem from atypical neurodevelopment

conclusion :

It's not yet understood why some people have HSAM. Although . By obtaining structural MRI scans and assessing laboratory memory tests. the results identified nine structures as being morphologically different than those of people who have typical memory function. However, it's not known if these differences caused the HSAM or if they occurred because of the person's greater use of areas of the brain associated with memory. Ongoing research on memory will increase our understanding of HSAM's causes.

References :

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