



## Summary

Posttraumatic stress disorder (PTSD) is a psychiatric disorder which is mostly triggered by traumatic events such as natural disasters, assault, war, or grave illnesses. The unpleasant emotional experiences caused by the psychological shock can lead to detrimental long-term or permanent effects that bring on changes in cognitive processes like planning or concentration, and can also cause memory loss. Hence, there is a need for medical practitioners and researchers to comprehend the relation between cognition and emotion. Furthermore, current cognitive models related to PTSD assume that the majority of mental activities responsible for information procession are directed on detecting threats as well as interpreting stimuli as dangerous. Ultimately, it damages other cognitive functions since it restricts a person's attentional focus. The primary aim of this paper is to identify how cognition-emotion relationship is responsible for changes in functional brain activity leading to attention and memory deficit or loss, aphasia or language impairment, disorders in information processing, storage, encoding, and retrieval. In conclusion, guidance that might help to develop better treatment for PTSD will be offered.

### PTSD and language impairment/Aphasia

#### Introduction

Posttraumatic stress disorder (PTSD) advances after a person is exposed to disturbing events for an extended period. Such traumatic events can include fatal accidents, military conflicts, grave illnesses, different kinds of assault, or natural calamities. The principal signs and symptoms of post-traumatic stress disorder include changes in cognitive processes, for instance, concentration/attention, planning, memorizing, as well as problem-solving. Hence, it is not surprising that emotional stimuli easily catch the attention of people; besides, they are influential in determining how information is processed, encoded, stored, and retrieved. Nonetheless, excessive amounts of stress can impact the mental functioning, especially if a person is suffering from a psychiatric disorder. Besides, a PTSD patient persistently tries to forget the harrowing events through avoiding any form of reminders and exercising vigilance to possible dangers in the surrounding.

The dominant cognitive theories of post-traumatic stress disorder focus on the relationship between cognition and emotion as the primary contributing factor towards worsening of the condition. According to these theories, psychopathology develops after cognitive systems responsible for processing information are disrupted by emotional stress (Foa & Kozak, 2012). For instance, anxiety might reduce a person's capability to process non-threatening information which increases the possibility to develop fears or phobias. Additionally, this might predispose a person to interpret some harmless stimuli as intimidating.

#### PTSD Clinical Definition

According to the American Psychiatric Association (2013), the present Diagnostic and Statistical Manual (DSM-V-TR) states that PTSD develops after a person is predisposed to Criterion A1 events that include a severe injury, threat to a person's life and so on. The person should directly face or experience the stressful event, get to know about the death of a very close person, or experience any other shocking event suitable for the Criterion A1. According to Friedman M. J., Resick, P. A., Bryant, R. A., and Brewin, C. R. (2011), the person usually

responses with extreme horror, helplessness, and fear.

Furthermore, post-traumatic stress disorder symptoms can be divided into three groups: B, C, and D. Firstly, the Group B entails undesirable flashbacks as well as disturbing memories of the event. The person re-imagines the distressing event regardless of being away from its place and circumstances; such symptoms can be profoundly unsettling. Secondly, Group C entails persistent evasion of locations and people that remind the patient of the painful event. Other symptoms include the inability to enjoy life in addition to emotional numbing. Lastly, Cluster D includes such symptoms as hypervigilance, hyperbolic responses, low levels of concentration in addition to temper tantrums, irritation, insomnia, memory loss, and language impairment.

The patient usually experiences such symptoms for over a month, which leads to adverse effects on occupational and social performance. PTSD's progression starts with the development of symptoms within six months of experiencing the harrowing event; nonetheless, there can be delays in the emergence of symptoms. Furthermore, acute PTSD is diagnosed in individuals who have symptoms for over three months. According to Boscarino (2008), chronic post-traumatic stress disorder is associated with other poor health factors like alcohol abuse, overweight/obesity, heart disease, etc. The prevalence rate of PTSD in the general population is projected to be almost 6-9%; however, the rates differ based on demographic composition and the kind of traumatic event a person is exposed to. For example, according to Tanielian and Jaycox (2008), the prevalence rates are higher (ranging between 11–21%) among first responders and military veterans.

## Memory Loss and PTSD

### Stages of Memory

According to the American Psychiatric Association (2013), memory refers to the processes and structures of storage and retrieval of information to help people draw past experiences to inform present decisions. Memory is critical for all people since it allows them to live in the present and think about the future. Furthermore, it is involved in processing a massive amount of information such as meanings, sounds, and images. Hence, in information processing, it covers three aspects: encoding, storage, and retrieval (Matlin, 2015).

### Memory Encoding

When information from sensory input comes to the memory system, it must be transformed into a form that allows the system to cope and understand it to allow its storage. The important techniques in encoding information include: semantic (meaning), acoustic (sound), and visual (picture). For instance, when one is looking at phone number or letters, it is considered as visual coding, whereas vocalizing the same to oneself is known as acoustic coding (of sound). Hence, a person holds the number in the short-term memory (STM) while attempting to reproduce it verbally. According to Sternberg (1999), the semantic coding (of the meaning) is considered as the principle encoding system in long-term memory; nonetheless, information in LTM can also be coded both acoustically and visually.

### Memory Storage

The aspect covers the nature of memory and different aspects of it: the sort of information retained, the capacity and duration of the process, and where the data is stored. The manner in which one keeps the information impacts the way it is retrieved. For example, when it comes to Short Term Memory (STM), the majority of adults hold from 5 to 9 items for almost 0-30 seconds (Matlin, 2005).

## **Memory Retrieval**

Memory Retrieval entails recalling information from the storage. Mostly, if a person cannot remember something, it can be attributed to his/her inability to retrieve it from storage. Information stored in STM is usually retrieved easily.

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