

Trauma: Introduction

Psychological Trauma

A posttraumatic reaction is a normal reaction to an abnormal event.

A **psychological trauma** (Greek τραύμα = „wound“) is an injury to the soul by an overwhelming event.

A trauma arises from the discrepancy between

- the subjectively experienced threat to oneself or others and
- the individual coping strategies.

1889 Pierre Janet (Paris): First scientific treatise on traumatic stress

It was **not until 1980** that the diagnosis Post Traumatic Stress Disorder (PTSD) was introduced into the DSM-III in the US.

Types of Trauma

Shock Trauma: a singular event like an accident, an attack, natural disaster

Developmental Trauma: Arises during childhood as a result of neglect, ill-treatment, emotional or sexual abuse, or when a child frequently witnesses violence

Primary traumatisation: by something which happens to someone directly and personally

Secondary traumatisation: by caring for / dealing with people who are traumatized (affects mostly people working in health care, social workers, psychotherapists, family, relatives and friends)

Non-intentional/accidental trauma: traumatic events which happen unintentionally and/or by nature.

Examples: traffic accidents, earthquakes

Man-made trauma/intentional trauma: brought upon purposely by other people.

Examples: war, abduction, torture, sexual abuse, physical abuse.

Transgenerational trauma

Passing on of trauma to the next generations by

- direct biological transmission of traumatic experiences (epigenetic)
- negative bonding experiences (f. ex. by the way infants are cared)
- explicit narratives like stories that are told in the family or folktales
- implicit narratives (unspoken of, yet knowledge of it is unconsciously registered)

Trauma and the Brain

Since the beginning of the nineties we have neuroimaging studies on PTBS => giving evidence of the change in information processing in the brain after a trauma.

Regular Processing of Information

Information registered through the senses reaches the thalamus in form of electrical impulses. Here the input gets filtered, combined and passed on.

From the thalamus there are two routes:

1. Fast track to the **amygdala** (“smoke detector”) which does a rough examination: Important?
Dangerous?
2. Slow track to the **cerebral cortex**: conscious awareness of the sensory input and further processing

In case the amygdala identifies a threat:

1. It activates the preprogrammed emergency plans => stress hormones are released. Thus, all reserves are being mobilized to prepare for fight or flight.
2. The amygdala activates the cerebral cortex so it can analyze the information and initiate a conscious action. In this process we have a feeling or emotion.
3. The hippocampus ("secretary of the brain") transfers the structured information, marked with a date and time stamp, to the long-term memory. This process results in an explicit memory.

Processing of information in case of trauma

(Note: Dissociative information processing is not discussed here.)

Malfunction of the thalamus

- Input from the senses passes through the thalamus unfiltered, transfer of information to the cerebral cortex is impaired.

Malfunction of the hippocampus

- The experience cannot be stored in the autobiographic memory
- Instead: It is saved by the amygdala as fragmented sensory impressions which are associated with preprogrammed emergency plans (implicit memory)

Reduced functioning of the medial prefrontal cortex ("emotion control center")

- Inability to inhibit or modulate the emotional reactions induced by the amygdala. Loss of control of emotions and actions.

Reduced functioning of the motoric speech center (Broca's region)

- "Speechless horror", making it hard or even impossible to verbalize the experience

In case of trauma, the amygdala stores much incoming information and the cerebral cortex is unable to access this (implicit memory). They are reactivated by trigger stimuli. And if triggered, involuntary memories in form of images, smells or physical sensations (intrusions) appear or one re-experiences the trauma with all related emotions and stress reactions, as if the trauma were happening right here and now (flashback).

Loss of control of emotions and actions => one feels helplessly at the mercy of such emotions and feelings => evasive behavior, suppression by alcohol, drugs, medication and general emotional numbness

Posttraumatic Disorders

After a traumatic event, when one is safe again and gets social support (which is most important!) => with passing of time posttraumatic symptoms often spontaneously disappear (without any therapy).

In case of:

- continuing danger
- lack of social support
- earlier traumatizations
- traumatizations of parents or grandparents (refer to: transgenerational trauma)
- lacking recognition as a victim by society
- man-made trauma

there is a higher probability for developing trauma related disorders.

Possible posttraumatic disorders

PTSD (Posttraumatic Stress Disorder) - diagnosis as per the ICD-10 and DSM-5

- intrusions (involuntary and stressful memory flashes, flashbacks (re-experiencing of the trauma) and nightmares)
- continuing physical arousal (hyper arousal)
- evasive behaviour and general emotional numbness

If the above symptoms last over four weeks after exposure to a traumatic event.

Or

Complex PTSD: diagnostic description of the effects of a developmental trauma or a long-term trauma like torture or war (not yet part of the ICD-10 or DSM-5; introduction into the ICD-11 planned).

Aside PTSD symptoms, always disorders with respect to emotional control, in relationships and self-perception.

Or

Especially brought about by childhood traumatization:

- higher risk to develop a variety of psychological disorders (eating disorders, dissociative disorders, dissociative personality disorder, borderline personality disorder, phobias, anxiety, panic disorders, addictions, affective disorders)

and

- higher risk to develop a variety of physical and psychosomatic disorders (ACE study) (chronic fatigue, chronic pain disorders, cardiovascular diseases, autoimmune diseases)

Trauma Therapy

Methods and Techniques (list incomplete):

Somatic Experiencing® - Peter Levine, Sensomotoric Psychotherapy - Pat Ogden, Psychodynamic Imaginative Trauma Therapy (PITT®) - Luise Reddemann, Ego-State Therapy, Eye Movement Desensitization and Reprocessing (EMDR), Brainspotting, Hypnosis, Narrative Exposition Therapy (NET), Cognitive Behavioural Therapy, Meridian Tapping Techniques, Matrix Reimprinting, Trauma Buster Technique (TBT), Neurofeedback, Trauma-sensitive Yoga, Tai-Chi, Qigong, Theater Work Therapy, Drumming, Dance Therapy, Art Therapy

In Germany only cognitive behavioural therapy and EMDR are covered by regular health insurance.

Principles of influencing the fear memory

- Increasing the control of the cortical centers (watchtower) over the amygdala, f. ex. by reassessment of the situation (reframing)
- Reprogramming through repetitive experience that the fear causing stimuli are not a threat in the present situation, f. ex. by reading out loud a "trauma script" several times

- Finding a coping option (active coping): f. ex. by completing the interrupted protective or fight reaction (like done in Peter Levine's Somatic Experiencing[®]) or by creating an imagined alternative scenario (like done in Matrix Reimprinting and in the last step of the TBT process)
- Memory Reconsolidation by creating two interfering signals (as done in all meridian tapping techniques: recalling of a stressful/traumatic situation and simultaneous tapping of acupoints which has proven to reduce the level of stress)