Psychological Early Intervention

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MOOC 1 – Unit 3 Stress responses: biopsychosocial perspective

Chapter 3

Follow-up Stress Phase

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MOOC 1 – Unit 3

Stress Responses: Biopsychosocial Perspective

Chapter 3 : Follow-up Stress Phase

Introduction

3.1 Neuropsychology of follow-up stress phase

3.2 Immediate reactions

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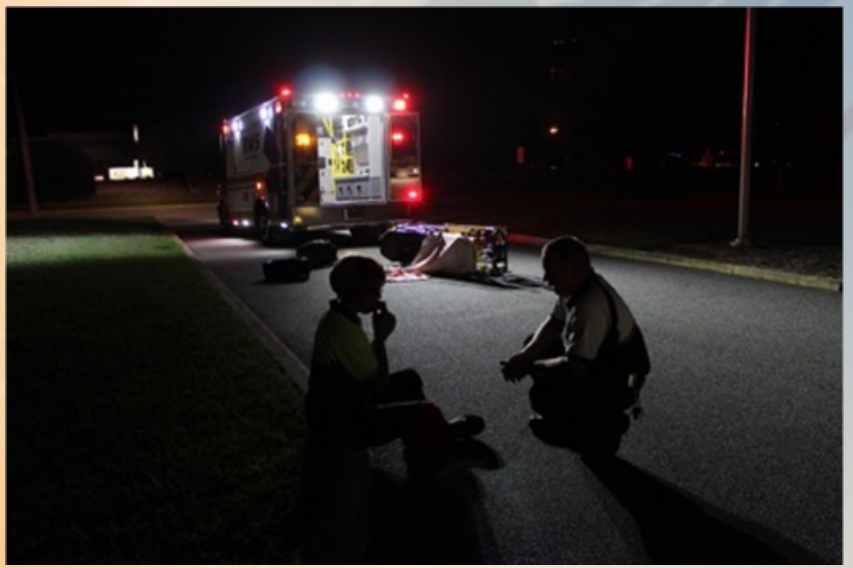
Chapter 3: Follow-up Stress Phase

Introduction

The **lifetime prevalence of traumatic events** is relatively high (**70-80%**). **Most people** recover after trauma **with some set of acute reactions** (immediately after trauma) and **are able to bounce back to normal** even without some specific clinical intervention. But in **some people**, **trauma can cause troubles** even after **months or years** since surviving trauma (e.g., about 8% lifetime prevalence of PTSD).



MONTHS, sometimes even YEARS after trauma

Chapter 3: Follow-up Stress Phase

3.1 Neuropsychology of follow-up phase

In the follow-up phase of stress, the **persistence of the HPA axis with the production of cortisol** is important. Cortisol affects all neurons in the brain but has the greatest effect on glucocorticoid and mineralocorticoid receptors, which in turn affects the immune, cognitive, metabolic, and other physiological processes**, leading to changes in physiology and behaviour**. When there is an over-exposure to stressors, lasting from hours to days, it **is possible to observe structural changes**.

Chapter 3 : Follow-up Stress Phase

3.1 Neuropsychology of follow-up phase

Continuing stress or dysregulated (disrupted) stress reaction can lead to these most frequent changes (Sapolsky, 2000; Einchenbaum, 2001; McEwen, 2007; Kim et al., 2015; Godoy et al., 2018):

→ **atrophy** of the **hippocampus**

→ **hypertrophy** of the **amygdala**

→ **atrophy** of **prefrontal cortex**

→ **hyperactivation** of the **locus coeruleus-norepinephrine system**

→ **changes** in the **orbitofrontal cortex**

Chapter 3: Follow-up Stress Phase

3.1 Neuropsychology of follow-up phase

Atrophy of the hippocampus

→ impairment in learning, spatial and episodic memory.

Hypertrophy of the amygdala

→ leads to anxious behaviour, the increased experience of feelings of danger, fear, and anxiety, the effect on fear conditioning, and the effect on higher aggression and impulsivity.

Atrophy of prefrontal cortex

→ leads to impairment in attention set-shifting but also a learning disorder, specifically in the extinction of conditioned fear.

Hyperactivation of the locus coeruleus-norepinephrine system

→ causes this system to be activated out of proper context which can lead to hyperarousal, loss of concentration, restlessness, and impaired focused attention.

Changes in the orbitofrontal cortex

→ reduce the desire for reward stimuli. In this way, they could contribute to anhedonia.

Chapter 3: Follow-up Stress Phase

3.2 Immediate reactions

These are the most common reactions (symptoms) during the follow-up stress phase:

a) emotional reactions: Irritability and/or hostility; Depression; Mood swings, instability; Anxiety (e.g., phobia, generalized anxiety); Fear of trauma recurrence; Grief reactions; Shame; Feelings of fragility and/or vulnerability; Emotional detachment from anything that requires emotional reactions (e.g., significant and/or family relationships, conversations about self, discussion of traumatic events or reactions to them).

b) physical reactions: Sleep disturbances, nightmares; Somatization (e.g., increased focus on and worry about body aches and pains); Appetite and digestive changes; Lowered resistance to colds and infection; Persistent fatigue; Elevated cortisol levels; Hyperarousal; Long-term health effects including heart, liver, autoimmune, chronic obstructive pulmonary disease.

SAMHSA - Substance Abuse and Mental Health Services Administration. (2014). Trauma-Informed Care in Behavioral Health Services. Treatment Improvement Protocol (TIP) Series 57. HHS Publication No. (SMA) 13-4801.

Chapter 3: Follow-up Stress Phase

3.2 Immediate reactions

These are the most common reactions (symptoms) during the follow-up stress phase:

c) cognitive reactions: Intrusive memories or flashbacks; Reactivation of previous traumatic events; Self-blame; Preoccupation with the event; Difficulty making decisions; Magical thinking: belief that certain behaviours, including avoidant behaviour, will protect against future trauma; Belief that feelings or memories are dangerous; Generalization of triggers (e.g., a person who experiences a home invasion during the daytime may avoid being alone during the day); Suicidal thinking.

d) behavioural reactions: Avoidance of event reminders; Social relationship disturbances; Decreased activity level; Engagement in high-risk behaviours; Increased use of alcohol and drugs; Withdrawal.

e) existential reactions: Questioning (e.g., "Why me?"); Increased cynicism, disillusionment Increased self-confidence (e.g., "If I can survive this, I can survive anything"); Loss of purpose; Renewed faith; Hopelessness; Re-establishing priorities; Redefining meaning and importance of life; Reworking life's assumptions to accommodate the trauma (e.g., taking a self-defense class to reestablish a sense of safety).

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3.3 Complex reactions

→ Reactions in the follow-up stress phase also tend to combine in a **more complex cluster of symptoms**;

→ The most common trauma-related complex reaction in follow-up stress phase is **PTSD**;

→ PTSD is **DSM-5** and **ICD-11 diagnosis**

→ PTSD has **high comorbidity with other mental disorder** – mainly with **depression** (more than 50%), **anxiety** (more than 50%), **alcohol use disorder** (about 40%) and/or **substance use disorder** (about 35%).

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3.3 Complex reactions

PTSD

→ is a mental disorder represented by **20 PTSD symptoms** sorted into 4 clusters (**1. Intrusion symptoms**: e.g., nightmares; **2. Avoidance**: e.g., avoidance of trauma-related thoughts or feelings; **3. Negative alterations in cognitions and mood**: e.g., inability to recall key features of the trauma; **4. Alterations in arousal and reactivity**: e.g., heightened startle reaction) (APA, 2013).

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3.3 Complex reactions

PTSD

→ **Assessment**: PTSD Checklist (DSM-5) (PCL-5) (Weathers et al., 2013); International Trauma Questionnaire (Cloitre et al., 2018) – reflect the clinical picture of PTSD according to ICD11.

→ **Immediate needs**: manage PTSD symptoms; manage possible comorbid symptoms (e.g., substance abuse or depression); symptom-specific management (e.g., sleep, pain) (NCPTSD, 2017).

For a quick screening of symptoms of traumatization, more broadly than PTSD symptoms, you can use GPS (Global Psychotrauma Screen; Olf et al., 2021): https://www.global-psychotrauma.net/gps

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3.3 Complex reactions

Intervention for PTSD

→ **trauma-focused psychological therapy** (cognitive-behavioural therapy or eye movement desensitization and reprocessing in addition to in vivo exposure) seem to be the most effective treatment for ASD and PTSD (Forbes et al., 2007; Bisson et al., 2010; Kline et al., 2018; Karatzias et al., 2019; Mavranezouli et al., 2020; Tran & Gregor, 2016).

→ also, other trauma-focused treatments can be used, e.g., **Dialectic Behaviour Therapy**; **Cognitive Processing Therapy**; **Skills Training in Affect and Interpersonal Regulation**; **Emotion-focused therapy with imaginal confrontation**; **Written Accounts**; **Narrative exposure therapy** (Ehring et al., 2014; Nosè et al., 2017), or in the virtual **environment - Virtual reality exposure therapy (Deng et al., 2019).**

→ Individual sessions yielded larger effect **sizes than pure group treatments (Ehring et al., 2014).**

→ Cognitive-behavioural therapy-based intervention seems also to be effective in the **application during early psychological intervention** with the **prevention of PTSD** symptoms development in the follow-up stress phase (McNally et al., 2003; Oosterbaan et al., 2019; Roberts et al., 2019; Short et al., 2020).

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3.3 Complex reactions

Except for recommended complex intervention for PTSD, these techniques are useful to apply:

1. **Stimulus discrimination;**
2. Different **psychoeducation metaphors** (e.g., Linen Cupboard metaphor; Film Projection metaphor; Intrusive Thoughts Brain metaphor, Factory metaphor);
3. **Nightmare Exposure and Rescripting;**
4. **Other trauma healing techniques** (e.g., Emotional/Therapeutic letters; Tapping).