

STARTTS Clinical Master Class
31st March 2021

Treatment of PTSD and Addiction in Traumatised Adults

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NSW Service for the Treatment
and Rehabilitation of Torture
and Trauma Survivors



Outline:

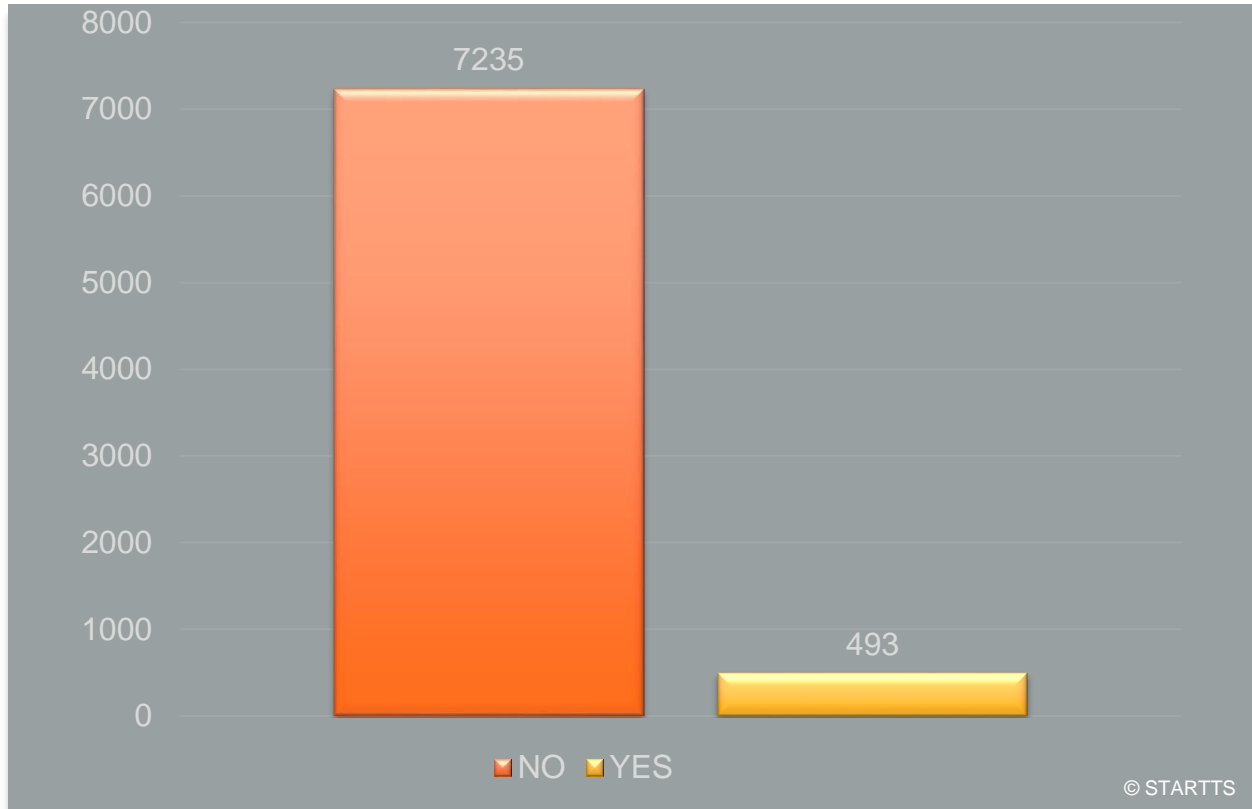
- Refugee trauma and addiction
- Trauma, brain dysregulation and addiction
- EEG profiles in addiction
- Treatment implications
- Role of brain regulation strategies (neurofeedback)



Refugee trauma, PTSD and addiction

STARTTS client data 2018-2019

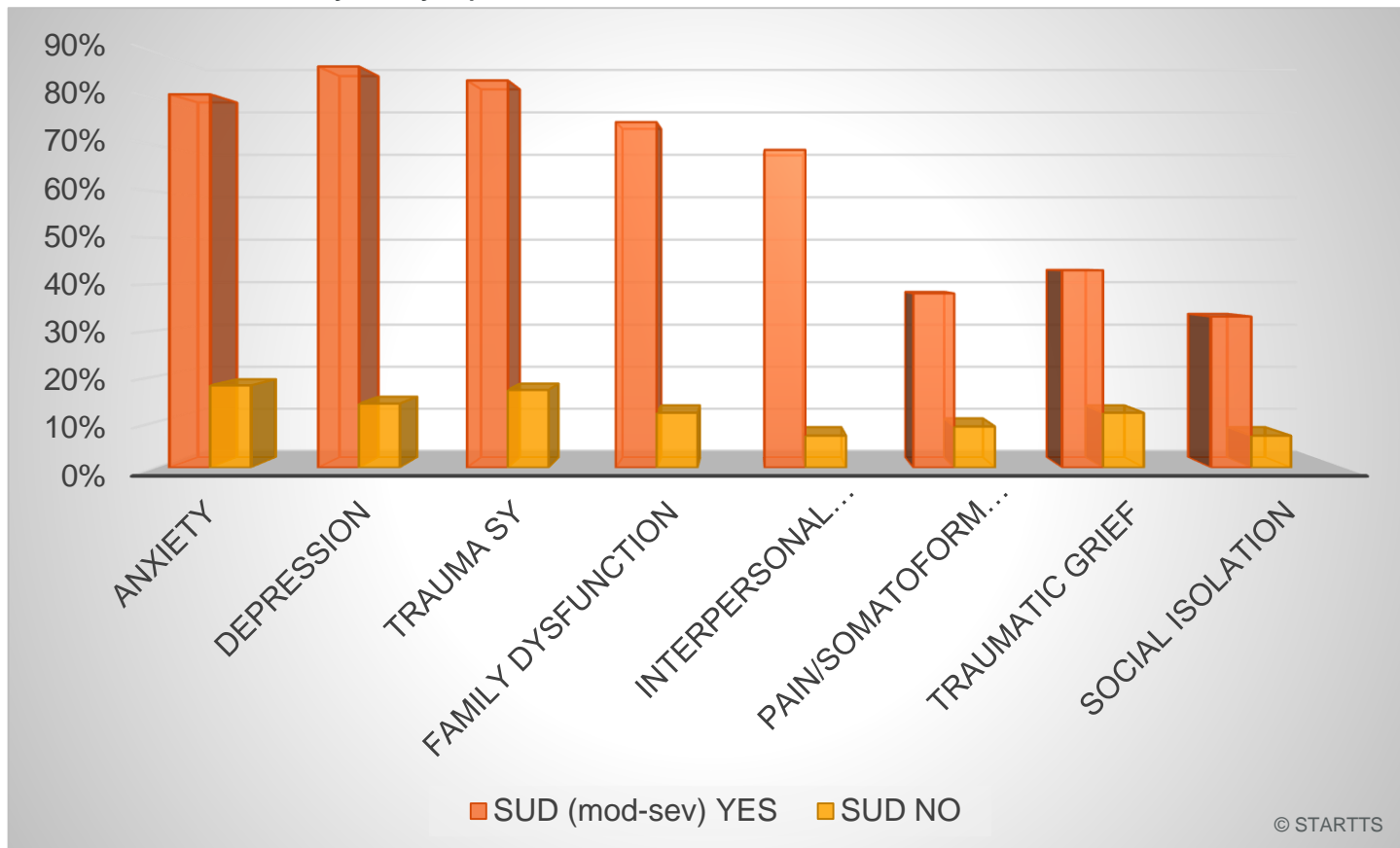
Number of clients with substance use/addictive behaviours



Refugee trauma, PTSD and addiction

STARTTS client data 2018-2019

Differences in severity of symptoms between clients with and without substance use disorder:



Treatment options for refugee trauma, PTSD and addiction



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Where do we start?

What do we treat first?

How to best prioritize and integrate treatment components?

What is the best way to address the client's self-destructive behaviour and severe symptomatology?

How do we handle a dysregulated client?

Should we first focus on trauma or addiction treatment?

Emotion dysregulation in trauma and SUDs



- Emotion dysregulation as a potential mechanism underlying the relationship between trauma and the development of SUDs (Wolff, 2016)
- Dysfunctional behaviours such as deliberate self-harm, risk-taking and substance abuse could be seen as efforts to regulate an autonomic nervous system which is readily triggered into extreme states by reminders of the original traumatic events (Corrigan, 2010).
- Therapeutic shift towards emotion regulation/brain modulation (Nicholson, 2016)

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EEG profiles and addiction

- Jay Gunkelman & Curtis Cripe looked at the divergent EEG patterns (EEG profiles) in addiction (N=30)
- Two different neural factors underlie the prevalence of addiction cases, likely representing separate pathophysiologic drives for addictive behaviours:
 - (a) CNS over-arousal (n = 21)
 - (b) cingulate issues/obsessive-compulsive (n = 9)



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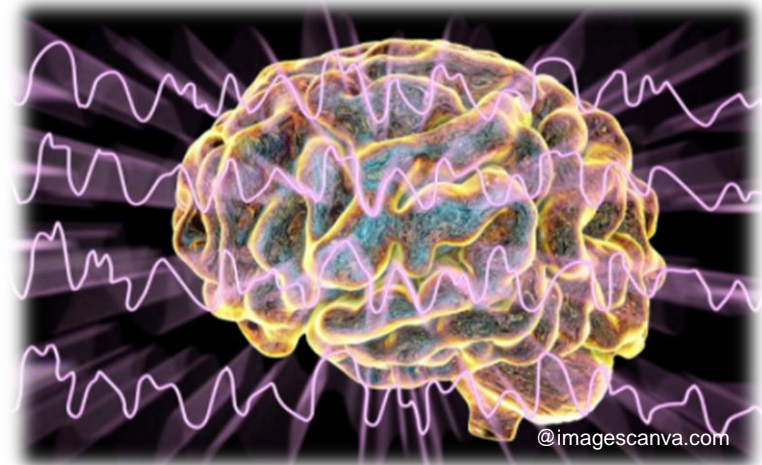
EEG profiles and addiction

CNS over-arousal based drives were attributed to the following brain profiles:

- low-voltage fast EEG
- faster alpha frequencies
- beta spindles

Cingulate-based obsession-and-compulsion-based drives were attributed to anterior midline divergences:

- Excess Alpha
- Excess Theta
- Excess Beta spindling



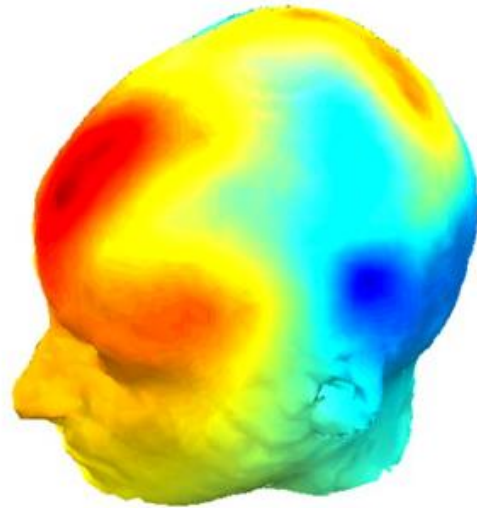
Additional EEG patterns and addiction

- Third neural factor that underlies the prevalence of addiction cases, likely represents a separate pathophysiologic drive for addictive behaviours related to the addiction to stimulants and compulsive gambling.
- Impulsivity has been recognized as a characteristic of individuals addicted to drugs, along with sensation seeking and poor decision making (Ersche et al., 2010)
- Neural correlates include amygdala over-responsiveness to reward (Kasanez et al., 2010) and weakened control of the reflective VMPC (Volkow et al., 2004)

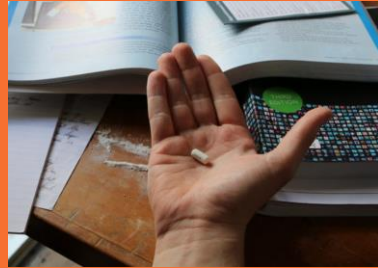


Additional EEG patterns and addiction cont

- EEG in gambling disorder clients with high impulsivity score showed decreased theta absolute power, and decreased alpha and beta absolute power in the left, right, particularly midline fronto-central regions (Lee et al., 2017).



Impact of drugs on nervous system – what is your drug of choice?



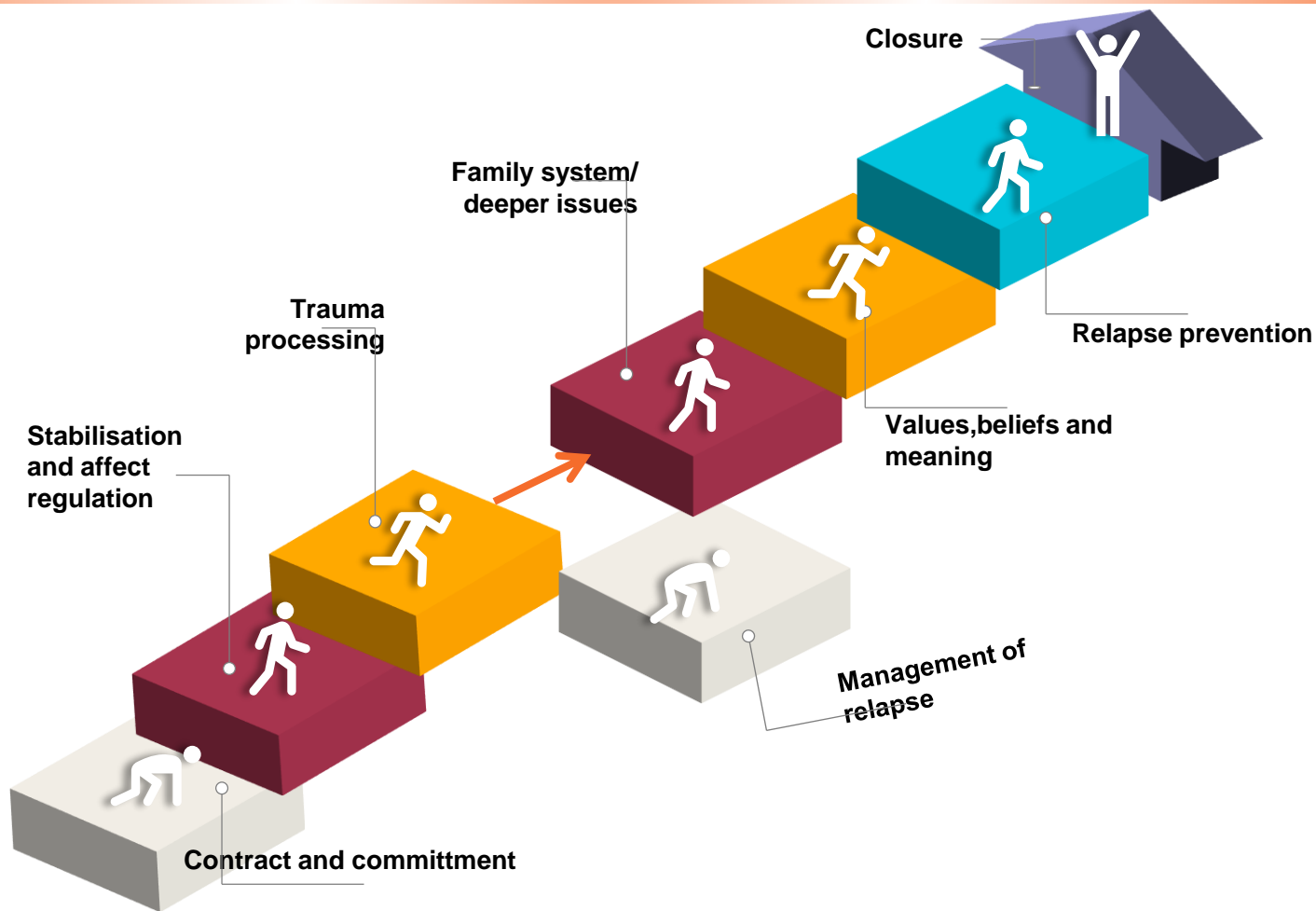
Increase in HiBeta
Power and peak
Alpha frequency
up to 2Hz faster
Withdrawal:
reverse effects +
theta and alpha
increase frontally

Ritalin
(Methylphenidate)-
Dopamine Reuptake
Inhibitor frontal Theta
profile decrease in Delta
and Theta increase in
Low Beta with a more
pronounced posterior
Alpha increase

Increased frontal
Alpha, with
increased frontal
interhemispheric
hypercoherence
leading to the
alterations in sensory
gating

In the low voltage fast
type EEG (anxious,
nervous, chronic
alcoholics), the initial
alcohol exposure causes
the occurrence of Alpha.
At higher levels, alcohol
causes slowing to occur,
with the depressant
effect.

Trauma and addiction treatment phases



RECOGNITION

- Acceptance of the problem
- Psychoeducation
- Referral to D&A
- Detox

DENIAL

- I don't drink that much
- Dope is good for your health



COMMITMENT

- Regular attendance
- Communication with D&A
- Building therapeutic alliance

TREATMENT PLAN

- Client's expectations
- Treatment goals
- Timeline

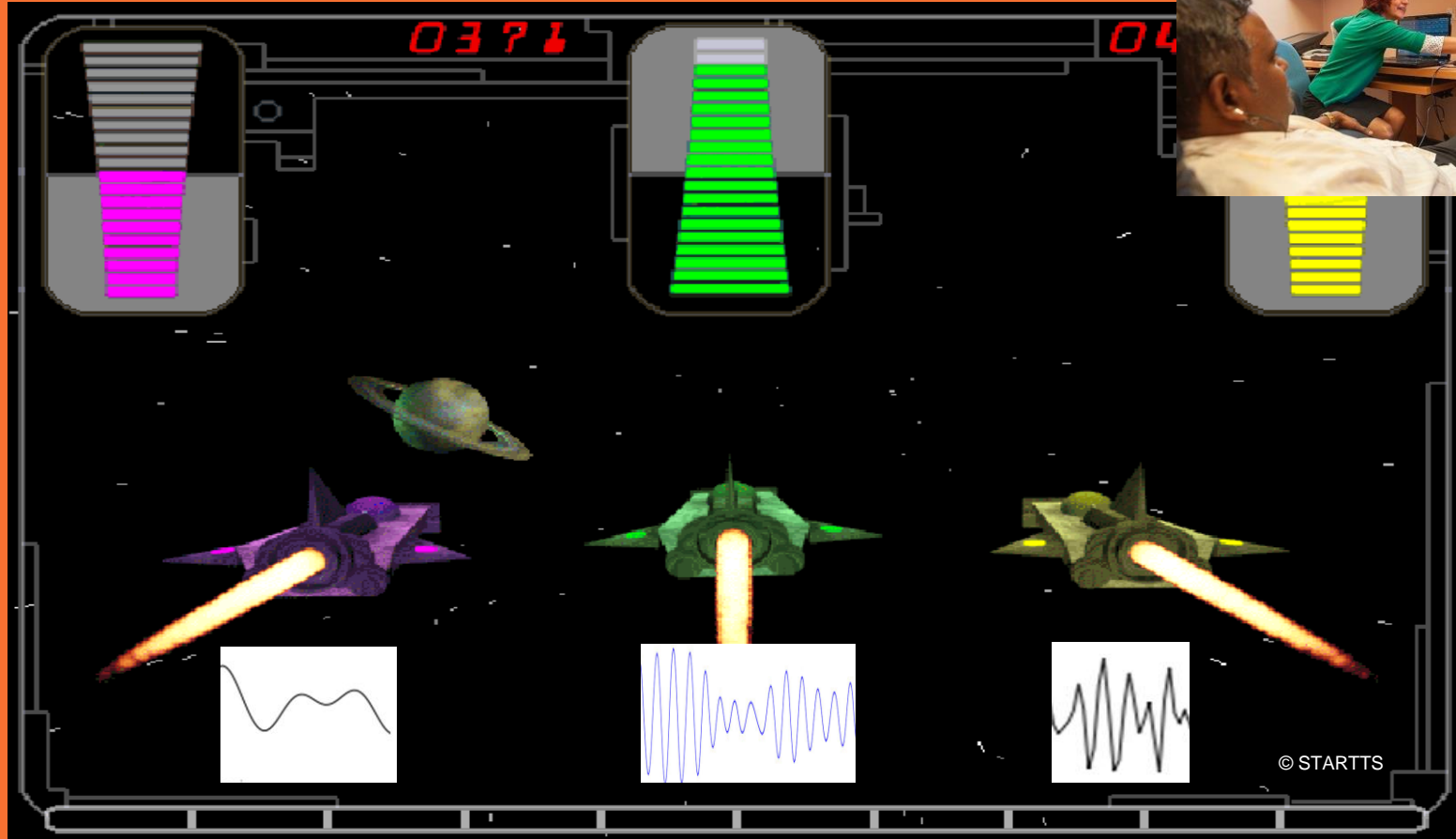
Stabilisation and affect regulation

Neurofeedback: technique of operant conditioning which directly changes brain function, in particular the timing of specific regulatory networks in the brain.

Frequently used protocols:
C4-A2; Cz-A2/A1; C3-C4
T3-T4; T4-P4; T5-T6; FPO2
Fz-A1



Brainwave training – client's screen





Alpha/Theta training (Pz-A2) (Peniston & Kulkoski, 1989)

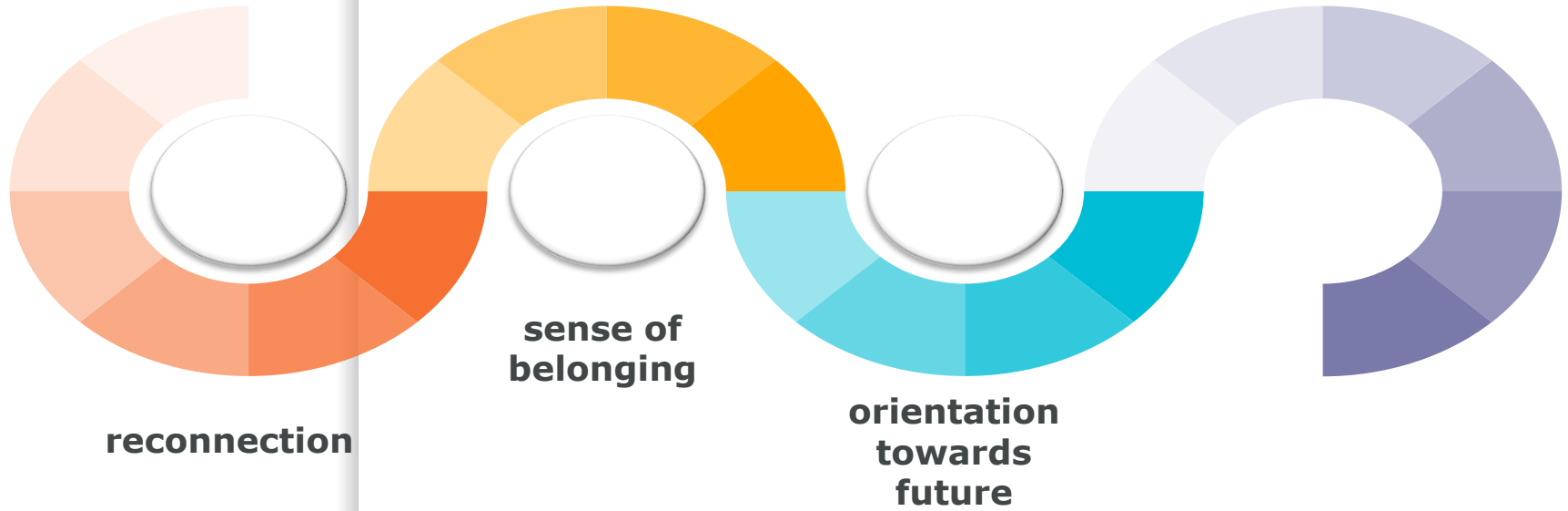
- Guided relaxation
- Visualisation of desired outcomes
- 40 min A/T
- Body scan
- Processing of experience
- Grounding

Role of therapist

**Management of
relapse:
work with
family
system/deeper
issues**



Values, beliefs and meaning

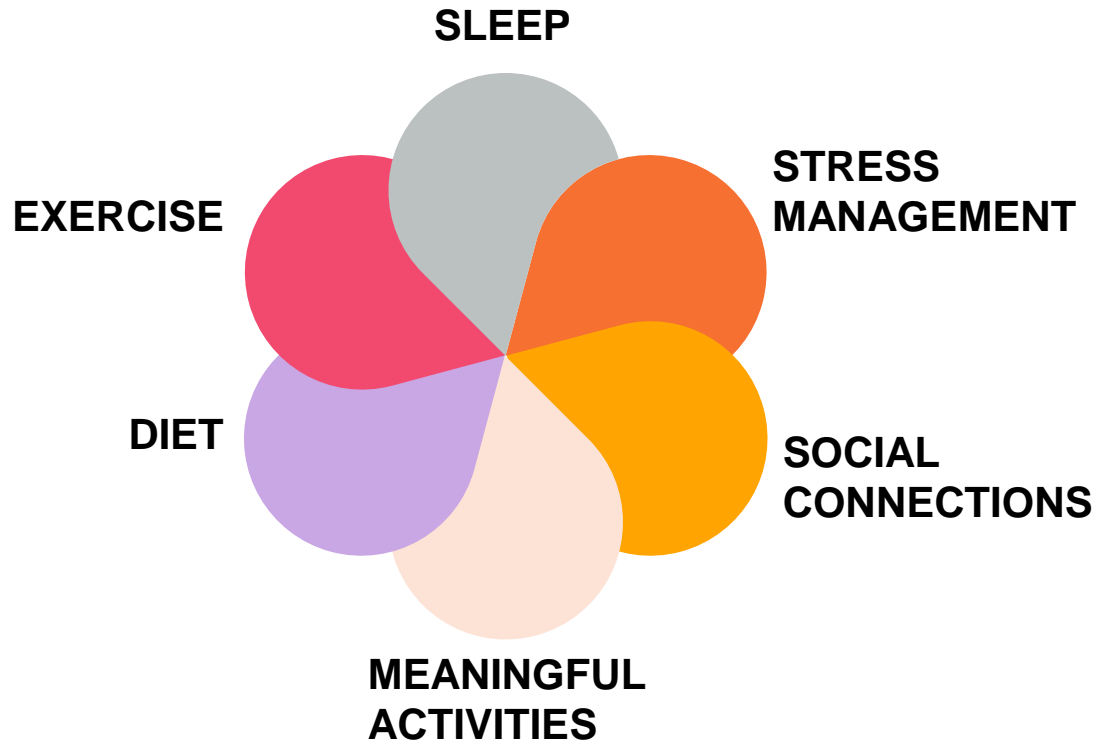


reconnection

**sense of
belonging**

**orientation
towards
future**

Relapse prevention and closure



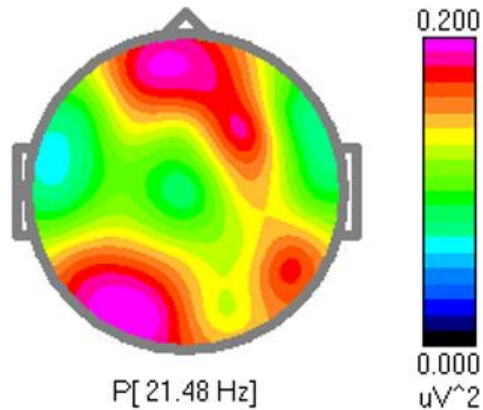
Neurofeedback in addressing PTSD and SUDs

47 y.o. male, developmental and war trauma
Complex PTSD,
SUD (alcohol)

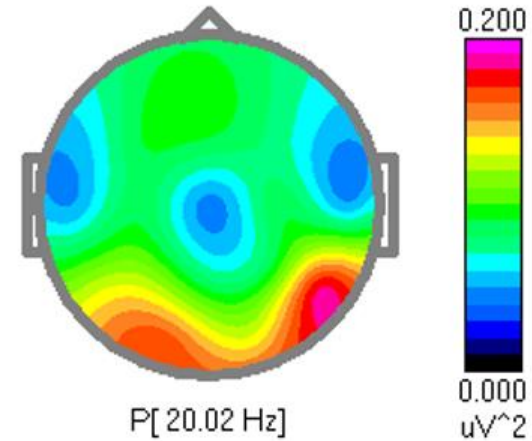
Eyes open neurofeedback (T4-P4, FPO2)
Eyes closed alpha-theta neurofeedback

Other Interventions:

Narrative therapy



PRE TREATMENT



POST TREATMENT

Conclusion

- Relationship between PTSD and addiction
- Integrated, stage oriented approach to treatment
- Role of neurofeedback and neuroscience driven approaches
- Role of psychotherapy/trauma informed therapy



Thank you for your time

If you have any questions about this presentation please don't hesitate to contact us at:

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