



Horse or Cart First? Psychological Treatment of Substance Using Individuals with PTSD

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+ Outline

- Background
- Aim
- Emotional Processing
- Methods
 - Participants & Recruitment
 - Design
 - Procedure
- Results
- Discussion



+ Co-occurring SUD-PTSD



- **High co-morbidity rates between post traumatic stress disorder (PTSD) and substance use disorder (SUD).**
 - SUD is estimated at 21-42% within PTSD population
 - 8-25% in those without PTSD
 - Increases up to 75% in clinical populations (Jacobsen et al., 2001)
- **Patients with both PTSD and SUD have a more severe clinical profile than those with either disorder alone.**
 - Worse physical health, interpersonal problems.. poorer well being (Schafer & Najavits, 2007).
 - High-co-morbidity with other psychiatric disorders, past suicidal ideation and attempted suicide (Mills et al., 2006).
 - High levels of impulsivity, self-destructive behaviour and vulnerability to re-victimisation (Fullilove et al., 2003).



Horse or Cart First?

Which disorder to treat first?



- Commonly held belief is that addressing PTSD in early treatment would “open Pandora’s box” and worsen progress in addiction treatment (Hien et al, 2004).
- **Current UK NICE guidelines for PTSD recommend:**
 - trauma-focused CBT or eye movement desensitisation reprocessing (EMDR). **BUT**
 - *“for PTSD sufferers with drug or alcohol dependence, healthcare professionals should treat the drug or alcohol problem first”* (Guideline, 2.3.7.4).
- **WHY?**
 - *“substance (ab)use prevents emotional processing and may even exacerbate the PTSD symptoms”* (Ehlers, 1995).

caution when using trauma-based exposure techniques with co-morbid SUD-PTSD (Coffey et al., 2006).



+ BUT...



- Evidence for the NICE recommendation was rated as a C grade.
- Little or no direct empirical evidence to suggest that individuals with co-morbid SUD-PTSD cannot benefit from trauma-focused treatment
- Increasing support to advocate the benefits of an integrated approach to the treatment of co-morbid PTSD/SUD client groups (Triffleman, 2000; Brady et al., 2001; Najavits et al., 2005; Coffey et al., 2006).
- Contradicts UK dual diagnosis 'best practice' guidelines that recommend an integrated treatment model (DOH, 2002)



STUDY AIM:



- To examine the evidence for the NICE guideline by

Investigating Emotional Processing in Substance Use Disorder and Post-Traumatic Stress Disorder.

- To discuss treatment implications for co-morbid SUD-PTSD



Emotional Processing



- “Emotional Processing” originally defined by Rachman in the 1980s as:
 - *“a process whereby emotional disturbances are absorbed, and decline to the extent that other experiences and behaviour can proceed without disruption”* (Rachman, 1980 p. 51).
- Rachman later revised and applied the concept to PTSD in 2001.
 - *“the critical sign of unsatisfactory emotional processing is the persistence or return of **intrusive signs of emotional activity** (e.g., obsessions, flashbacks, nightmares, pressure to talk), **inappropriate expressions or experiences of emotions** that are out of context or out of proportion, and **maladaptive avoidance**. The indirect signs of incomplete emotional processing include an **inability to concentrate** on the task at hand, **restlessness, irritability and heightened arousal**, which is characteristic of PTSD.”*
- Emotional processing has been well documented in relation to PTSD and is central to all main theoretical and treatment models of PTSD
 - Foa & Kosak, 1996; Foa & Riggs, 1993; Foa & Rothbaum, 1998; Brewin, 2001; Ehlers and Clark, 2000)
- Abnormalities in emotional processing also discussed within the addiction literature (e.g. Verdejo-Garcia et al., 2006; 2007).
 - associated with alterations in the limbic system as well as the orbitofrontal cortex (OFC) in lesion and imaging studies (Dom et al., 2005).



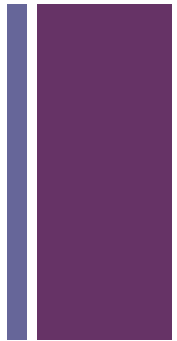
Assessing Emotional Processing



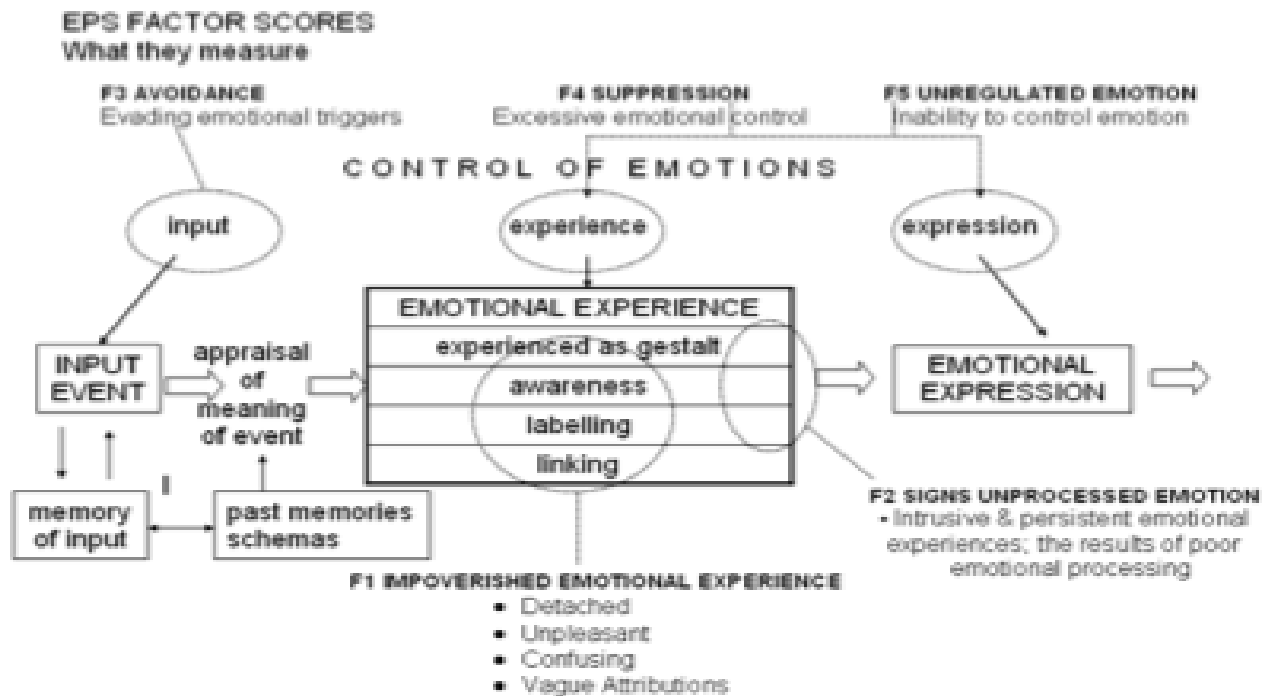
- Previous studies have explored emotional processing in individuals with PTSD using the **International Affective Picture System (IAPS- a set of emotional-evocative photographic images)** to assess 2 forms of emotional abnormality:
 - **Numbing**
 - **Heightened negative emotionality.**
- **IAPS** most widely used tool for the study of emotion in the laboratory (Wolfe et al., 2009).
- Previous PTSD studies reported mixed results e.g.
 - **Bosnian study- emotional numbing and heightened negative emotionality** for unpleasant stimuli (Spanic-Mihajilovic et al., 2005).
 - **Vietnam combat veterans study - heightened negative emotionality** to unpleasant images only (Wolf et al., 2009). **question the sensitivity of the IAPS rating protocol - Recommended increasing sample of photos and to include trauma-related images.**
- Previous SUD studies reported mixed findings:
 - evidence for both **emotional numbing and heightened negative emotion** (e.g. Aguilar de Arcos et al., 2008)
 - evidence for **heightened negative emotion only** (e.g. Verdejo-Garcia et al., 2006).
 - **SUD may be a vulnerable at-risk group for PTSD and emotional processing difficulties** (e.g. Chambers et al., 2003)



Emotional Processing Scale (EPS-25): The Five Factor Model



Baker et al., (2007) have developed a model of EP and a psychometric assessment tool that yields five main domains





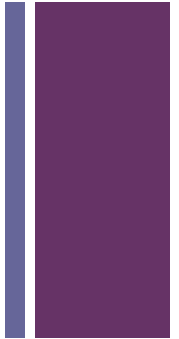
Emotional processing and co-occurring SUD/PTSD



- The role of emotional processing in co-occurring SUD-PTSD had not been examined.



Participants and Recruitment



- 90 participants, 7 excluded for incomplete data.
 - Of the remaining 83 participants
 - Group 1 (N=36): Individuals with co-occurring **SUD/PTSD**
 - Group 2 (N=21): Individuals with **PTSD** (without SUD)
 - Group 3 (N=26): Individuals with **SUD** (without PTSD)
- Participants were recruited from the **SLAM Addictions Division** and the **Traumatic Stress Clinic, Camden and Islington NHS**

+ Measures



■ Screening Measures

- Traumatic Screening Questionnaire (Brewin et al., 2002)
- Alcohol Use Disorders Identification Test (AUDIT, Piccinelli et al, 1997)
- Severity of Dependence Scale (SDS, Gossop et al, 1995)

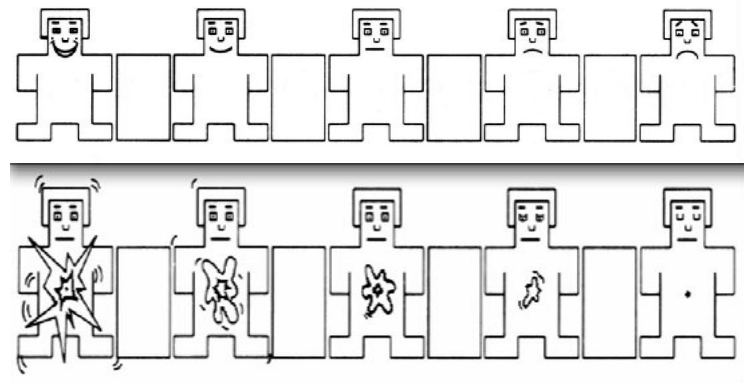
■ Experimental Measures

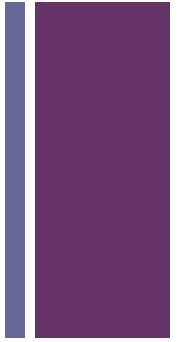
- Brief Symptom Inventory: BSI (Derogatis, 1992)
- The Maudsley Addiction Profile: MAP (Marsden et al, 1998)
- Posttraumatic Stress Diagnostic Scale: PDS (Foa 1995; Foa, Cashma, Jaycox & Perry, 1997)
- Emotional Processing Scale: The EPS (Baker et al., 2007) is a 25-item scale that yields five factors suppression, unprocessed emotion, unregulated emotion, avoidance, impoverished emotional experience.



Procedure

- Screening telephone call to facilitate grouping
- Participants completed a questionnaire pack and a 25 minute computerised emotional processing task (IAPS)
- Participants are compared on self-ratings of “valence” and “arousal” in response to negative, positive and neutral photographic images.
- Using the **SAM-rating scale**, a 9-point self-assessment manikin (Bradley and Lang, 1994).
- 42 Slides
 - 21 standard
 - 21 selected by research group (trauma & SU related)
 - Example on next slide



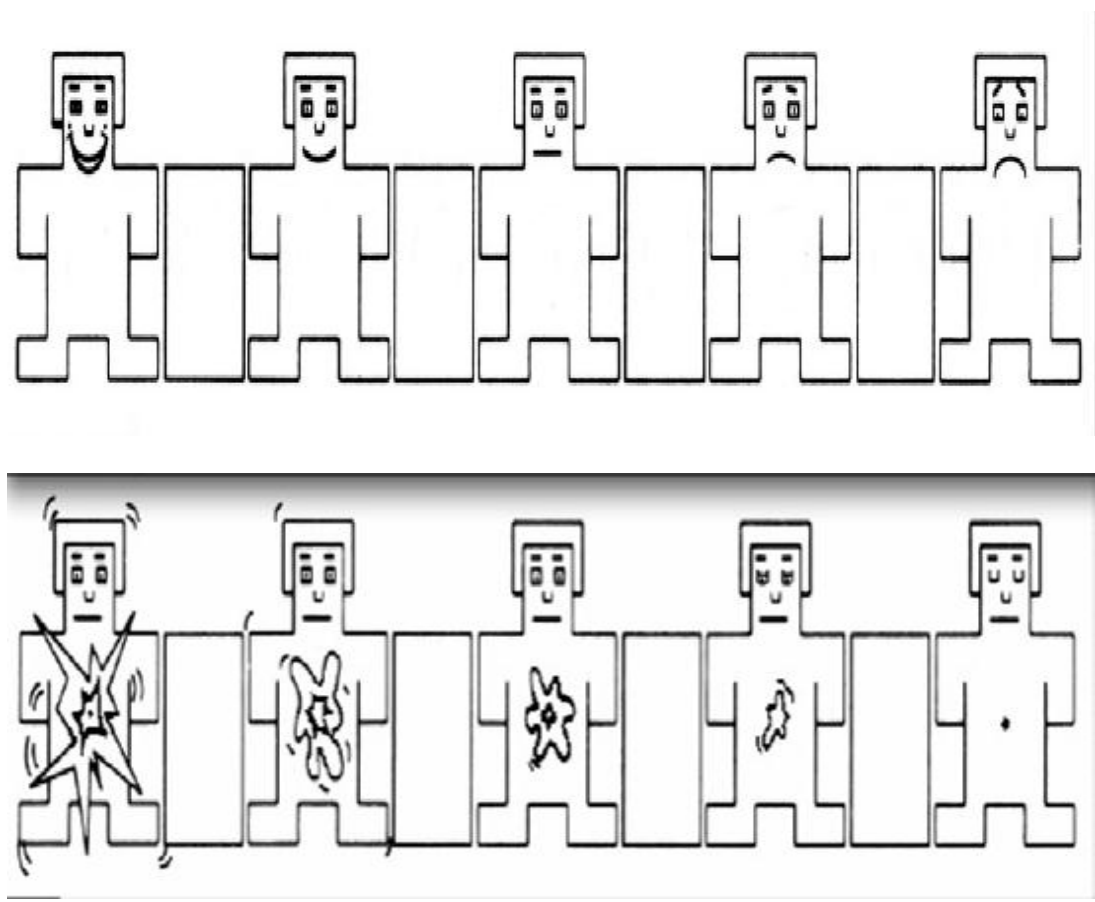


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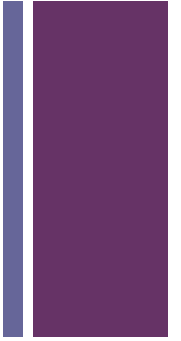


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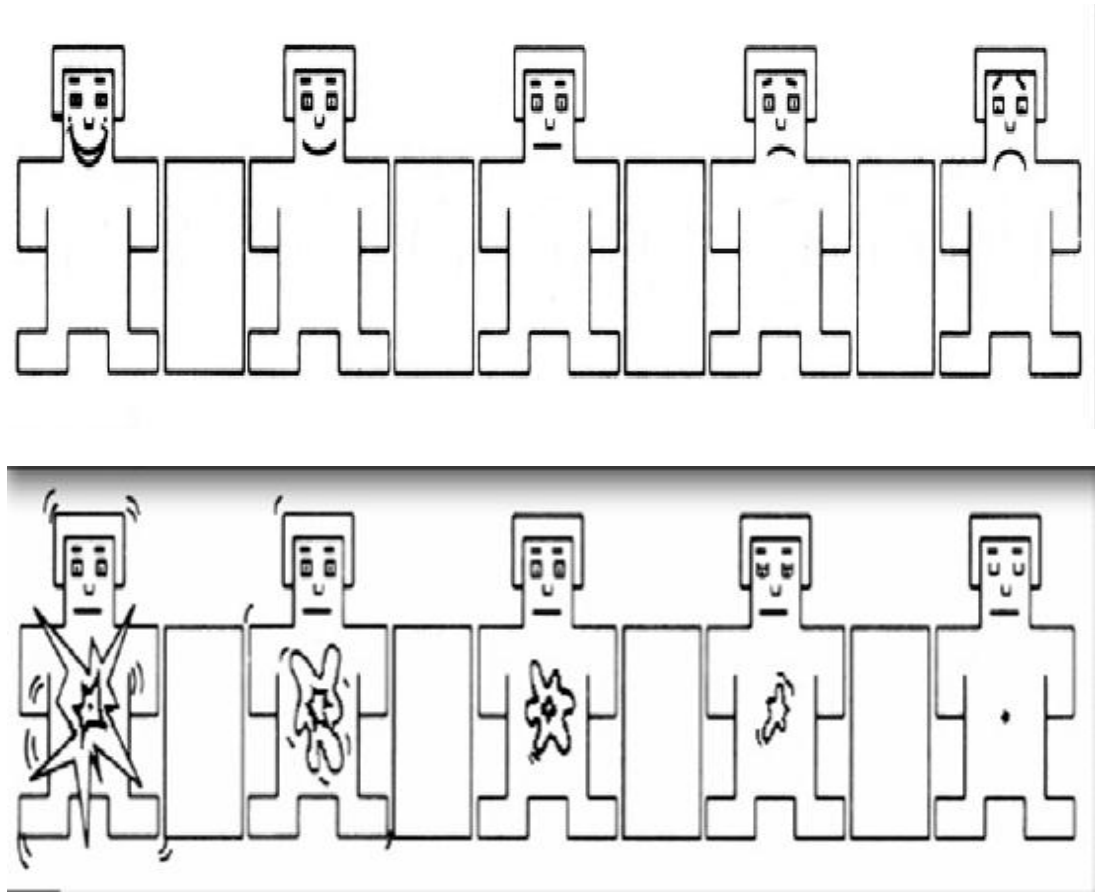


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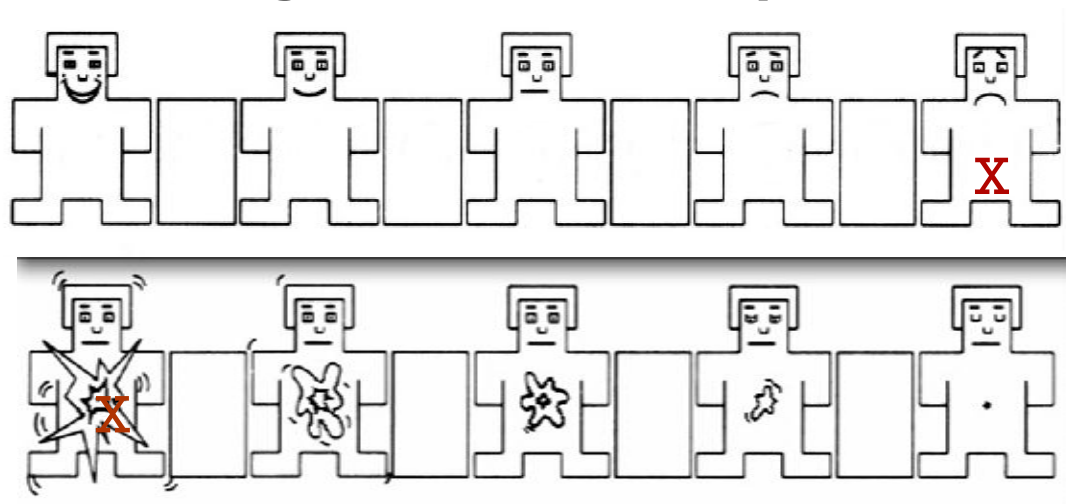




The International Affective Picture System (IAPS): Self Assessment Manikin (SAM)



- An excessively high “arousal” and low “valence” response to unpleasant stimuli indicates evidence of :
 - **Heightened Negative Emotionality.**

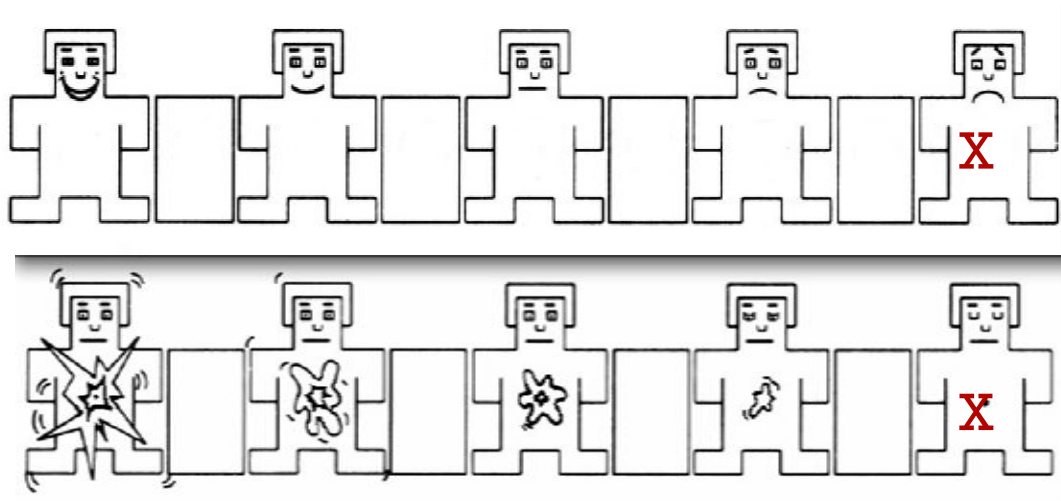




The International Affective Picture System (IAPS)



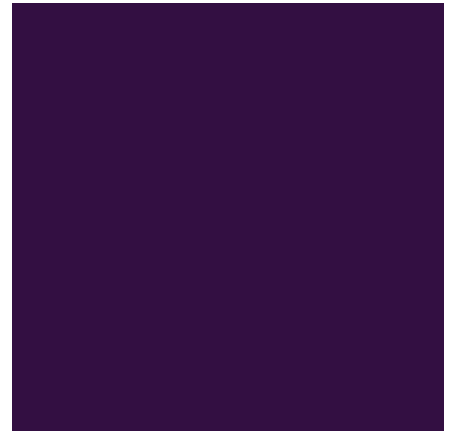
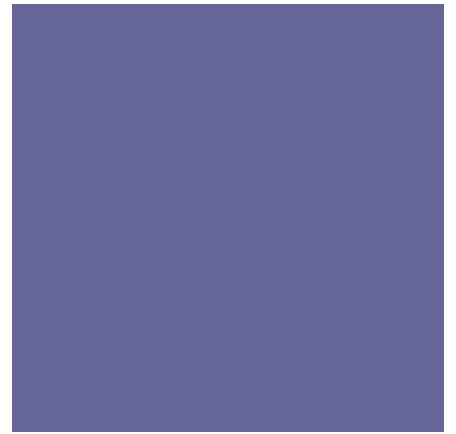
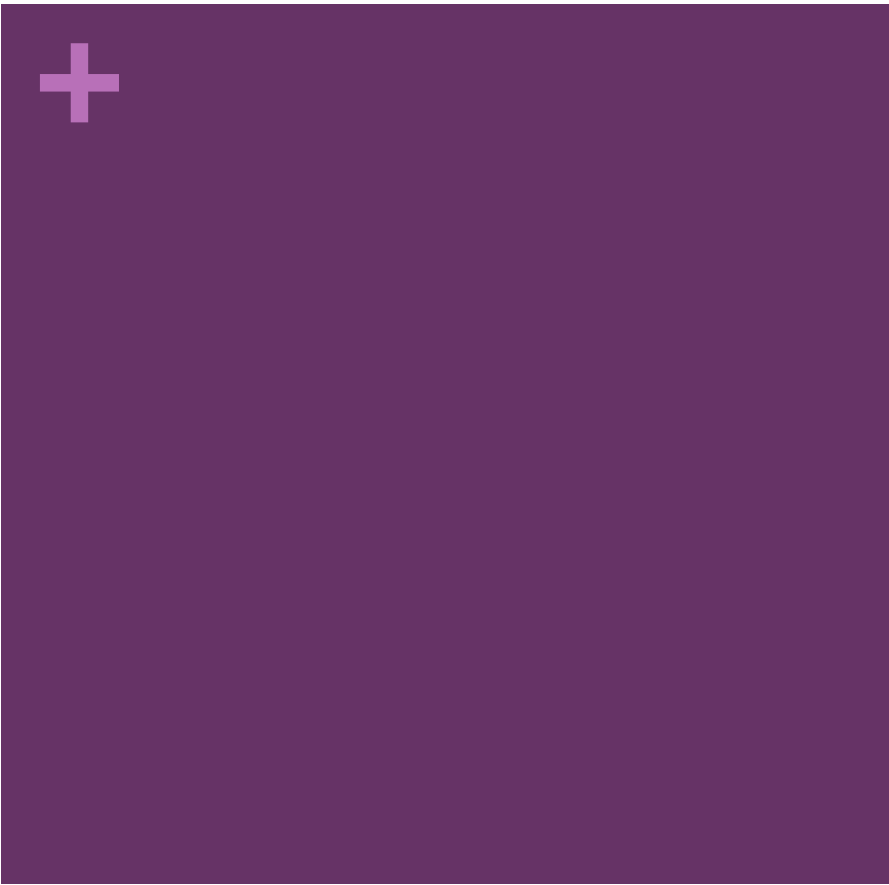
- Low “arousal” and low “valence” to pleasant stimuli indicates a low emotional response and evidence of:
 - **Emotional Numbing.**



+ **Debrief and follow up.**



- 5-minute debrief by the research investigator informing them of the purpose of the research.
- 10-minute progressive muscle relaxation exercise.
- Follow up telephone call within a week of their participation.



Results

+ Results: PTSD Symptom Severity

All participants within the SUD-PTSD-group fulfilled DSM-IV criteria for PTSD with above threshold scores on the PDS.

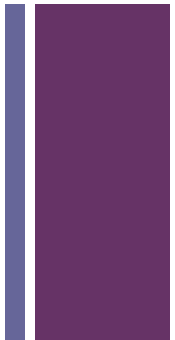
- 6 participants in SUD-PTSD group had a formal diagnosis of PTSD.
- PTSD-group significantly higher number of intrusive symptoms compared to the SUD-PTSD-group.
 - these two groups **did not differ on avoidance and arousal symptoms or on the impact of symptoms on daily functioning.**

PTSD symptom severity (PDS and TSQ)	SUD-group (N=15) Median (lower- upper quartiles)	PTSD-group (N=21) Median (lower- upper quartiles)	SUD-PTSD group (N=36) Median (lower- upper quartiles)
PDS symptom dimensions			
Re-experiencing symptoms	0.0 (0-0)	13.0 (10.5-13)	8.5 (5-12)
Avoidance symptoms	0.0 (0-0)	15 (10-17.5)	13 (8-17)
Arousal symptoms	0.0 (0-2)	10 (8-12.5)	10 (8-13)
No. of areas of daily functioning affected (PDS)	0 (0-0)	7 (5.5-7.5)	7 (5-9)
Total PDS symptom severity	0 (0-3.0)	38.00 (31.5-42.0)	30.50 (26.0-39.0)
Total TSQ screening symptom severity	0 (0-2)	10 (8.5-10)	9 (7-9)

Figure 1. PTSD symptom severity as measured by the PDS & TSQ.



Results: SUD Symptom Severity



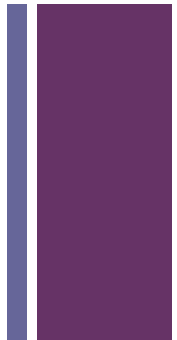
MAP Items (B-D)	SUD- group Mean (N)	PTSD-group Mean (N)	SUD-PTSD group Mean (N)
B. Substance use in last month			
Alcohol mean (units)	261.26 (N=21)	2.38 (N=3)	129.49 (N=24)
Heroin (grams)	7.75 (N=5)	-	5.1 (N=9)
Crack (grams)	24.18 (N=7)	-	29.08 (N=14)
Cocaine (grams)	0.0385 (N=1)	-	0.68 (N=3)
Cannabis (oz)	1.48 (N=11)	-	2.94 (N=14)
Prescribed & Illicit benzodiazepines [*] (tablets)	120.19 (N=7)	-	100.83 (N=8)
Prescribed methadone (mls)	1153.3 (N=12)	-	1785.48 (N=23)
Prescribed diamorphine (mls)	4628.57 (N=4)	-	2000 (N=2)
Other (N=2)		-	(N=3)
C. Risk Behaviour in last month			
IV use	10.2 (N=8)	-	18.1 (N=6)
Shared IV use	0.12 (N=1)	-	0.25 (N=1)
Sex with more than one sexual partner	0.42 (N=1)	0.06 (N=0)	0.39 (N=1)
Unprotected Sex	0.1 (N=2)	0.00 (N=0)	0.52 (N=4)
D1. Total health symptom severity - Mean (SD)	14.5 (8.6)	17.83 (8.44)	18.36 (8.3)
D2. Total psychiatric symptoms severity - Mean (SD)	15.5 (8.9)	21.28 (7.4)	22.81 (6.78)

Figure 2. SUD symptom severity as measured by the MAP.

- SUD and SUD-PTSD groups did not differ significantly on the MAP for monthly substance use or for risk behaviours symptom severity



Results: Psychiatric symptom severity



BSI symptom severity	SUD-group Mean (SD)	PTSD-group Mean (SD)	SUD-PTSD group Mean (SD)
BSI sub scales			
Somatisation	8.71 (6.07)	12.28 (7.81)	11.5 (6.58)
Obsessive Compulsive	9.96 (7.03)	14.89 (4.73)	13.78 (5.98)
Interpersonal Sensitivity	4.04 (4.32)	6.89 (3.56)	7.81 (3.91)
Depression	8.46 (6.68)	12.33 (5.28)	13.16 (6.36)
Anxiety	8.33 (6.30)	13.5 (4.73)	12.44 (5.39)
Hostility	3.67 (4.0)	5.17 (2.73)	6.28 (3.86)
Phobic Anxiety	3.92 (4.27)	10.16 (3.90)	8.47 (5.75)
Paranoia	5.75 (4.72)	8.94 (4.83)	8.56 (5.19)
Psychoticism	4.46 (4.21)	7.42 (4.71)	8.47 (4.93)
Additional Items	5.88 (4.01)	8.67 (3.36)	8.21 (3.25)
BSI Total	63.42 (44.48)	100.75 (31.88)	98.75 (37.60)

Figure 3. Psychiatric symptom severity as measured by the BSI.

- Both PTSD and SUD-PTSD groups scored higher than the SUD group on the total BSI
- **no significant differences between the SUD-PTSD and PTSD groups on psychiatric symptom severity.**

+ Results: EPS-25

Emotional Processing Scale (EPS-25)	SUD-group Mean (SD)	PTSD-group Mean (SD)	SUD-PTSD group Mean (SD)
EPS-25 Dimensions			
Suppression	23.8 (12.9)	28.15 (7.97)	30.15 (10.46)
Unprocessed	24.1 (11.46)	31.4 (7.88)	30.71 (7.75)
Unregulated	16.7 (10.92)	21.85 (8.29)	25.13 (7.4)
Avoidance	20.94 (9.74)	26.63 (10.71)	27.06 (8.57)
Impoverished	22.0 (8.43)	26.15 (9.47)	26.21 (8.85)
EPS-25 Total	101.40 (41.4)	128.78 (33.34)	133.16 (28.21)

Figure 4. Severity of emotional processing dysfunction as measured by the EPS-25.

- Evidence of emotional processing dysfunction for all three groups on the EPS-25
- Both PTSD and SUD-PTSD groups displayed significantly more emotional processing difficulties on the EPS-25 than the SUD-group.
- There were no significant differences between the SUD-PTSD and PTSD groups on the EPS-25 total or symptom dimensions.



Results: IAPS

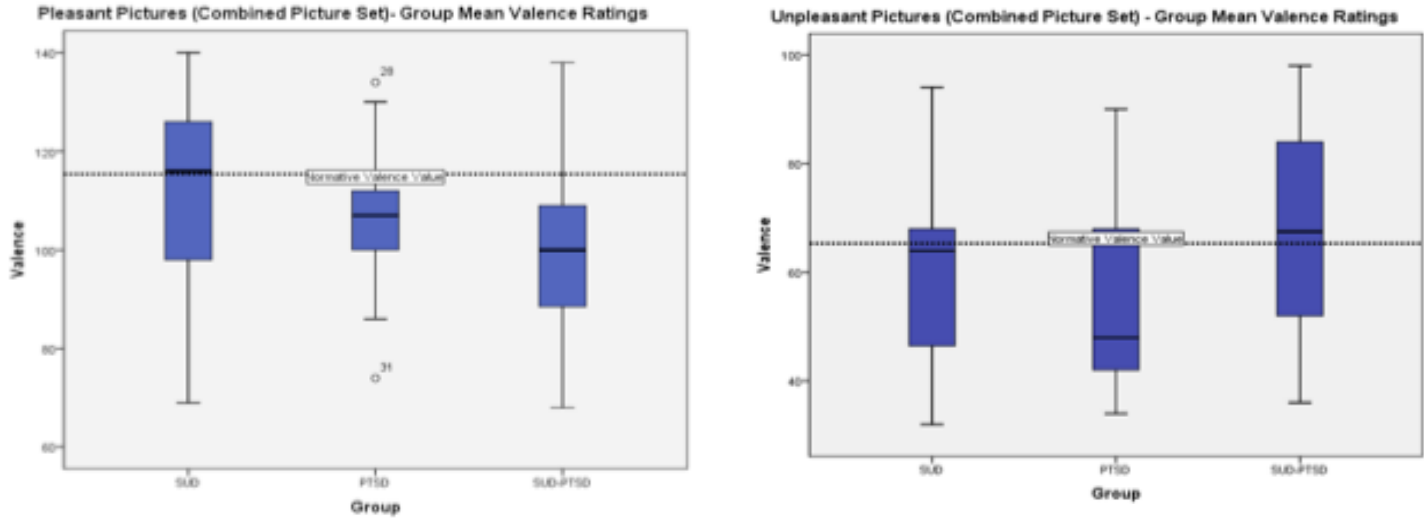
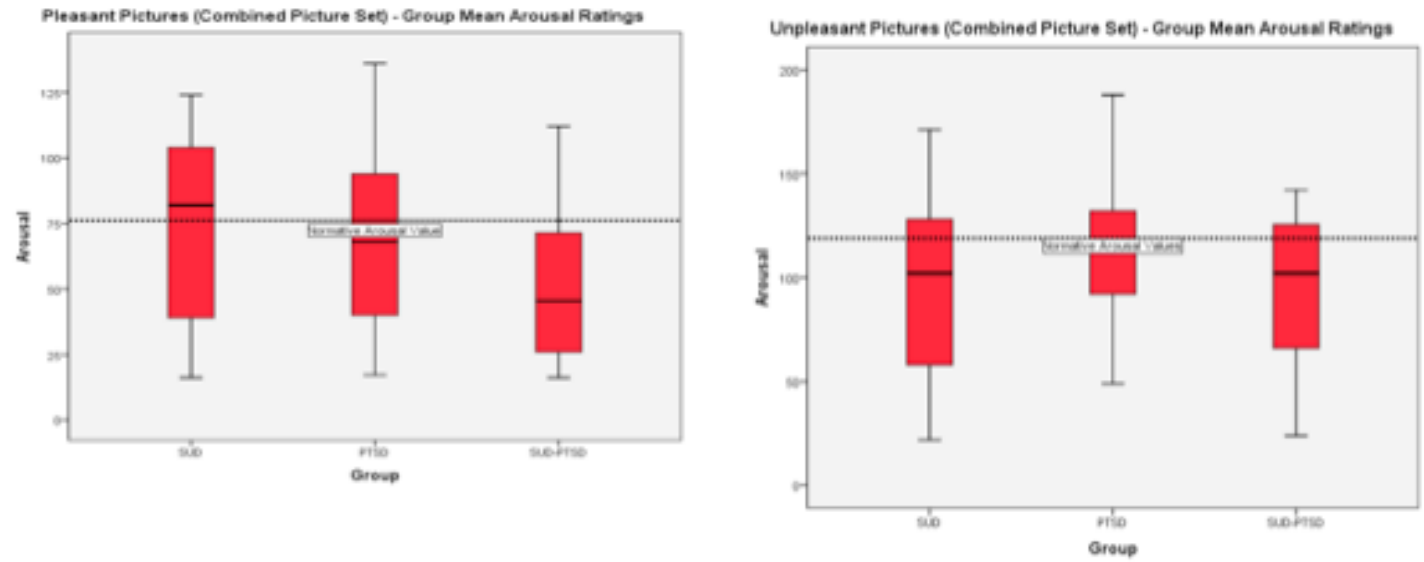


Figure 5. IAPS Task. Results: Valence (above) and Arousal (below) ratings to pleasant (left) and unpleasant (right) pictures.



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Results: IAPS

SUD-PTSD and PTSD groups significantly **lower valence and arousal to pleasant pictures** than SUD & normal population



Emotional Numbing & Positive Blunting?

PTSD group lower valence to unpleasant stimuli than normative values and SUD-PTSD group



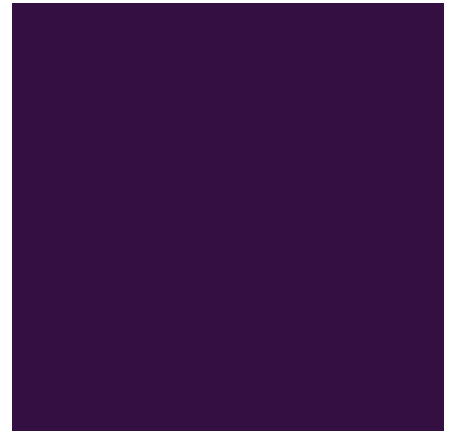
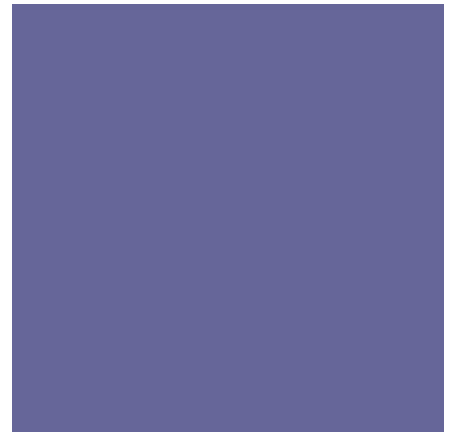
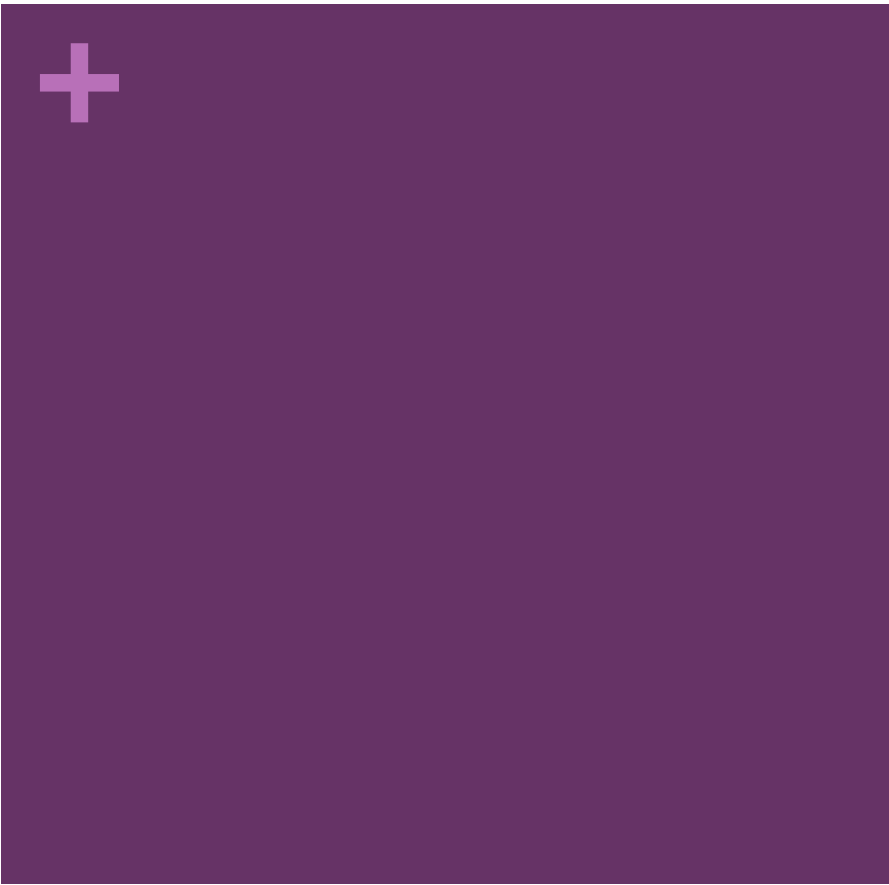
Heightened Negativity?

Both SUD-PTSD and SUD lower arousal to **unpleasant pictures** than normal population



**Emotional Numbing/
Negative Blunting**





Discussion

+ Summary of findings



- A minority of individuals with SUD-PTSD who fulfilled DSM-IV criteria for PTSD had a formal diagnosis of PTSD or were receiving treatment for PTSD.
 - more routine assessment and treatment of PTSD within addiction services.
- Overall both the SUD-PTSD and PTSD groups appear to be equally affected by the impact of PTSD symptoms on their daily living and psychiatric symptom severity
- The SUD-PTSD and PTSD groups presented with similar emotional processing difficulties
- Evidence of **emotional numbing** but no evidence of **heightened negativity** found within the SUD-PTSD group which was the rationale behind withholding trauma-focused treatment (Ehlers & Steil, 1995).

+ Limitations



- Sizeable proportion of those recruited from the trauma services were refugee clients.
 - significant differences between the PTSD and SUD-PTSD groups in relation to trauma type and symptom severity, as a high number of participants in the PTSD-group were survivors of torture.
- Conclusions in relation to group differences confounded by group differences in trauma type and trauma symptom severity?

+ Treatment Implications



- UK dual diagnosis 'best practice' guidelines recommend an integrated treatment model for SUD-PTSD (DOH, 2002).
- Current UK guidelines for PTSD recommend that patients with dual diagnosis (SUD-PTSD) are not offered trauma-focused treatment until they are substance free (NICE, 2005).
 - Anticipated emotional processing impairments appear to be a central reason for why trauma-focused treatment is withheld amongst co-morbid SUD-PTSD populations (e.g. Ehlers and Steil, 1995).
- Present findings show relatively little difference between the SUD-PTSD and the PTSD groups on emotional processing dysfunction
 - doubts are raised about the appropriateness of NICE recommendation.
- Little evidence to suggest that substance use would prevent emotional processing in those with SUD-PTSD.



Case Studies- Untreated SUD-PTSD



- *Nikki reported that she had been sexually abused by her step-father between the ages of four-fourteen years until she had been placed in care. She was sexually molested whilst in care and ran away from care and lived on the streets. Nikki was introduced to heroin when she was 16 years old and hadn't ever stopped using in the past 15 years. She described experiencing recurring nightmares that her step-father was raping her. In her dreams she described seeing her Mum standing by the door watching them. Nikki reported that her mother had known about the abuse. However as she was so young at the time she couldn't remember if her Mum really had watched them or whether this was part of her nightmare. Nikki reported she had been experiencing the same nightmare for years. She reported that whenever she has tried to stop using (heroin) the nightmares had increased and become more vivid and she would wake up sweating.*
- *Duncan reported that his 14yr old daughter had been stabbed on her way home from school. She had been robbed by another youth for £1.30 and died from the stab wound. Duncan was with his daughter as she died (fifteen years ago) and he still experienced re-occurring nightmares about his daughter dying in his arms. He described that in his dreams he feels as though it is happening all over again. Duncan reported that he has three other children who are grown up with their own children. He fears (and sometimes experiences nightmares that his other children will be killed in the same way. Duncan started drinking heavily after his daughter's death. His wife separated from him and he lost his job and custody of his other children (although he is back in contact with them). Duncan reported that he had tried to stop drinking a few times for the sake of his other children and grandchildren however every time he had tried to stop he reported that the nightmares had got worse and he would relapse.*



Case Study- Parallel Treatment for SUD-PTSD



- *Tamsin reported that she had been an alcoholic for 8 years and she had completed an alcohol detox six months prior to the assessment. She reported that she was still using cannabis on a daily basis but that she was trying to reduce her cannabis use gradually with the help of the drug and alcohol service. Tamsin reported that she had tried to stop drinking and smoking cannabis on numerous occasions but each time she had tried to stop she had relapse because her intrusive trauma memories and PTS symptoms increased. Tamsin reported that although her PTSD symptoms had again increased since reducing her substance use she felt that receiving specialist treatment for her PTSD had meant that she was learning other ways of coping with her symptoms rather than using substances to block out the painful trauma memories. She also reported that she felt this was the first time in her life she had felt she had a safe space to talk about her traumatic experiences.*

+ Future Research



- Within the USA increasing evidence to advocate the benefits of an integrated approach to the treatment of co-morbid PTSD/SUD client groups (Triffleman, 2000; Brady et al., 2001; Najavits et al., 2005 (seeking safety); Coffey et al., 2006).
- Future interest to conduct an integrated treatment trial for co-morbid SUD-PTSD
 - include assessment of emotional processing difficulties whilst individuals are involved in trauma-focused treatment.
 - determine with greater certainty what emotional processing difficulties arise for these three client groups
 - evaluate whether they interfere with the effectiveness of trauma-focused treatments.

+ The End...



■ Thanks for listening!

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