

Affect Regulating Child Approach for Neurobiological Disorders

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Received: November 21, 2017; Published: December 12, 2017

Introduction

Affect dysregulation is known as a transdiagnostic attribute of psychopathology of children with neurobiological developmental disorders and stressor- and trauma related disorders. Interactive temporal and affective regulation in arts therapies enhances the affect regulating capacity of the child, improves self-regulation and thereby diminishes emotional and behavioural problems. The organizing principles of art and music elements are matched with principles of temporal and affective synchrony of mutual regulation, to enhance affect regulation. Synchrony is in origin applied to the study of parent-infant interactions and suggested as a model for intersubjectivity. The operative elements of the affect regulating child approach seems to be the combination of staging the therapy process whilst intervening with temporal synchrony and affective matching concurrently in the relationship as well as in art and music improvisation. This paper aims to connect the clinical model of affect regulating in art- and music therapy with neurobiological developmental theory in the field of research concerning the implicit nonverbal coordination of affective relationship between child and adult [1].

Affect regulation symptoms in brain function domains

Children with underdeveloped capacity of affect regulation experience difficulties with self- regulation and dealing with social behaviours and emotions. The child is hampered in her or his daily functioning at home and at school. Weak self -regulation shows itself in over- regulation and/or under-regulation. Over-regulation leads to internalizing and under- regulation leads to externalizing [2]. Krueger and Eaton [3] establish a link between internalizing and emotional problems, and between externalizing and behavioural problems. To understand these problems in terms of cerebral functioning a recent classification framework of research domain criteria (RDC) [4], shows five brain domains in which the regulational problems of the child can be defined.

The figure below shows how to translate categorical terminology (DSM) into Research Domain Criteria (RDC) of the brain into developmental terminology.

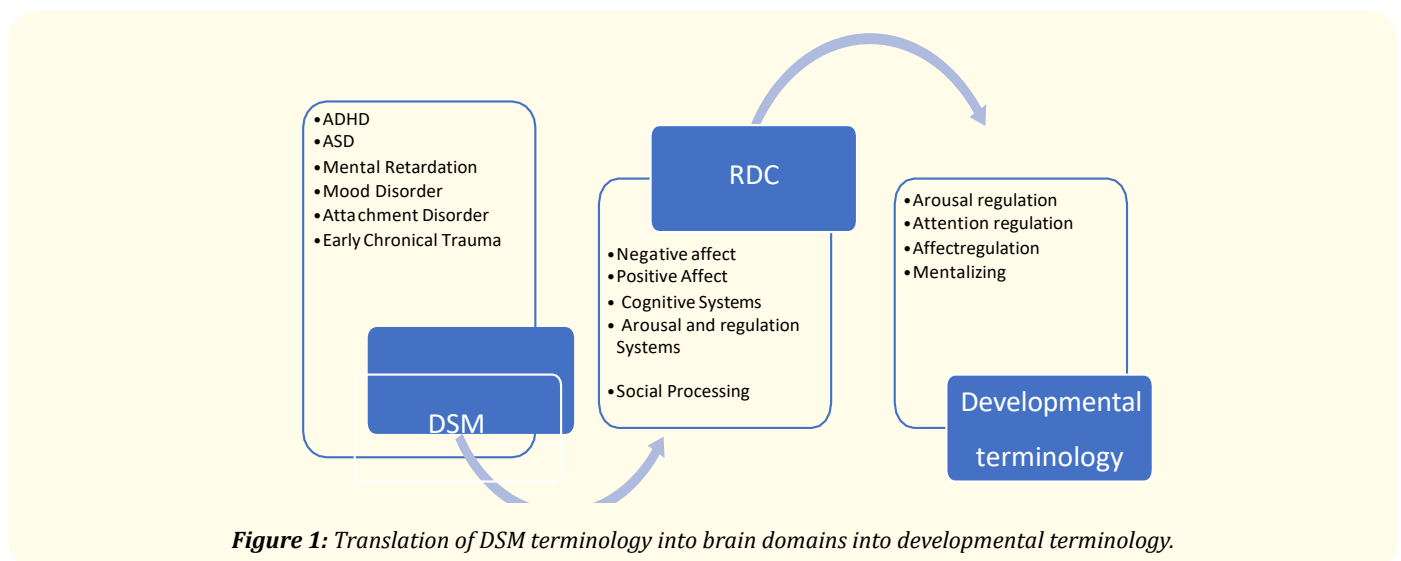


Figure 1: Translation of DSM terminology into brain domains into developmental terminology.

RDC's	Normal properties of brain function and deviant self-regulation	
Negative affect	Normal	Acute fear, Potential dread (fear), Constant threat/stress, tension symptoms, Loss, Aggression/frustration.
	Deviant	On the affective level the child has trouble noticing tensions and feelings (affects), allowing his affects and allow to regulate them.
Positive affect	Normal	Taxation of reward, Willingness to make effort, Predicting a reward, Sensitivity to reward, Routine behaviour.
	Deviant	The child has difficulty distinguishing different degrees of positive and negative affect.
Cognitive systems	Normal	Attention, Perception, Conscious cognitive control (executive functions), Working memory.
	Deviant	In terms of cognition, the child has difficulty to focus and share attention. It is easily distracted and finds it difficult to schedule.
Arousal and regulation systems	Normal	Tension, Circadian rhythms, Sleeping and waking state.
	Deviant	The child struggles to regulate internal tensions her- or himself. It has difficulty distinguishing degrees of tension. It is over-attentive, overregulated or introverted underregulated
Social processing	Normal	Affiliation and bonding. Social communication. Perception and understanding of the self. Perception and understanding of others.
	Deviant	In terms of social processing the child has trouble mentalizing, understanding her- or himself and also noticing the perspective of the other. Regarding affiliation and bonding the child struggles to initiate seeking help from adults in situations of increasing tension. The child has troubles experiencing support in the closeness of a adults. In social interaction with peers, the child has difficulty with attunement and communication.

Table 1: Deviant behaviour in brain domains (RDC) indicative for affect regulating intervention.

In order to do justice to the versatility of affect regulation, phasing in regulation stages is required in treatment in which first regulation of arousal takes place and then selective and jointed attention and finally the focus on basic mentalizing affects [5].

Dimensional aspects of affect regulation

The child’s affect regulation as fundamental base for self-regulation develops in the first years of life in relation to a responsive caregiver. Children born with neurobiological disorders or children with trauma-and stressor related disorders are less able to deal with stress [6]. These children quickly experience their own feelings too intense. In case of high intensity, even positive feelings can be experienced negatively.

Besides the assessment of the affect category in which the affect can be placed, two other dimensions are involved: firstly the intensity of the feeling and secondly the degree of pleasantness [7]. Both intensity of feelings and degree of the pleasantness (hedonic tone) are addressed by regulation with art and music, because art and music both has time bound properties of form, movement, force, contrast, direction, dynamic graduation and intention just like the organization of human communication.

John is a boy 11 years old with ADHD. Dominant social behaviour and frequent high irritation level. John cannot stop his actions when finishing is required by parents of teacher and gets very angry at school or at home. In the session he tries to remember his piano melody of the previous session. At least he finds his little melody and repeats it while therapist synchronizes his tempo and tone pitch with chords on guitar. The therapist is preparing an intervention while playing along together, to address his trouble to finish an action in a attuned way. He did not catch her signal of becoming gradually softer, because he is playing too loud and too fast focused on his own rhythm. With the onset of her decrescendo he is not expecting the end of the music. When the therapist has finished, he plays on, suddenly noticing that he is playing alone. After talking about what kind of cue he needs to stop, John wants to do it again. Therapist propose that she likes to hear him first getting softer while improvising together exchanging reciprocally the role of leading and following, activating to interact from two perspectives. He agrees to be the first one getting softer as signal of coming something to an end. He initiates his own tempo, while exchanging melody motives with the therapist who revers the melody line while synchronizing his tempo and at least she synchronizes the affective dynamics of his decrescendo. He is positively surprised when ending together. Now the therapist ask him to follow her finishing when he hears the music going softer. His attention is increasing, his stress is lowering. When the session is over, he seems proud when he tells his father to get in control because he was able to finish a jointed action.

Table 2: A boy with ADHD learns to finish by temporal and affective synchrony in music.

Synchrony a neurobiological component of social affective learning

The interpersonal experiences in the actual situation of improvising with art and music is connected by the neurobiological component of synchrony.

As Feldman [8] highlighted in its focus on the temporal and organizational features of the dyadic system, synchrony describes a time-bound, coregulatory lived experience within attachment relationships that provides the foundation for the child's later capacity for intimacy, symbol use, empathy, and the ability to read the intentions of others.

Synchrony is relevant for a modal perception because the temporal aspects of the interactive flow such as the rhythmic repetitions, the ongoing match of affective states, and the sequential mirroring of the infant's communicative signals can be transformed into a variety of sensory and behavioural modalities that preserve the intensity, shape, and rhythms of the original message. Three types of timed relationships between parent and child are assessed: concurrent, sequential and organized in an ongoing patterned format and the development of each is charted across the first year. Viewed as a formative experience for the maturation of the social brain, synchrony impacts the development of self-regulation, symbol use, and empathy across childhood and adolescence [8].

The three types of synchrony above mentioned are used by the therapist as mirroring, varied in concurrent or sequential form, and as exchanging dialogues in an ongoing patterned format in arts and music improvisation. In interactive interpersonal communication the mirror neurons system gives us not only information about movement and its dynamics, (slow- fast, gradually-suddenly, etc) but also completed with signalling about the intentions of the other. Iacoboni, *et al.* [9] explored how intention is decoded in the brain. The results showed that all conditions activate areas belonging to the mirror neuron system. Furthermore, compared to the action effortless, and does not require any inferential process [10].

Results of the affect regulating child intervention are positive in ROM Measuring (CBCL).

2017-03 RESULTS of affect regulating intervention in art and music improvisation. Pilot research Wijntje van der Ende Child psychiatry practice Deventer, The Netherlands				
2014/2015/2016. Number of clients: 10. Positive results 8 clients. Average duration 11 month.				
Therapy period	Gender and age of client	Duration of treatment	Disorder comorbidity	Results
				+ ± -
2014-02 / 2014-12	Girl 15 year	10 month	Trauma Attachment	+
2014-06 / 2015-04	Boy 11 year	10 month	ADHD	+
2014-10 / 2016-02	Boy 8 year	16 month	ASD	+
2014-11 / 2015-11	Girl 9 year	12 month	Depression Attachment	+
2015-02 / 2016-03	Boy 13 year	13 month	ADHD, Trauma	+
2015-09 / 2016-11	Boy 9 year	14 month	ADHD	+
2015-12 / 2016-09	Girl 8 year	9 month	ADD Anxiety	+
2015-12 / 2016-02	Boy 14 year	3 month finished	ASD Anxiety	-
2016-01 / 2016-06	Boy 8 year	6 month	ASS	+
2016-02 / 2016-05	Girl 12 year	3 month finished	ADHD	-

Table 3: Research pilot of results of the affect regulating child approach in psychiatry.

Conclusion

Affect regulating approach based on temporal and affective synchrony in music an art is used to enhance the self-regulating capacity of children with psychiatric problems. Interactive improvising with art materials and music instruments in real time seems to be a fruitful condition for interpersonal learning to read intentions of the other and of one's own intentions. The scientific knowledge of research on neurological brain activity concerning temporal and affective coordination in relationships is an inspiring resource to improve the theoretical underpinning of nonverbal affect regulating child approach. This paper tries to explain the neurobiological and artistic synchronizing of affect regulating principles with organizing principles of art and music elements to establish further clinical application. This innovative process of developing research is still open to other partners.

Bibliography

1. Ende WG van der, *et al.* Affect regulerende vaktherapie (2015).
2. Hill D. "Affect regulation Theory, A clinical model. Norton series on Interpersonal Neurobiology". New York: W.W Norton & Co (2015).
3. Krueger F and Eaton R. "Transdiagnostic factors of mental disorders". *World Psychiatry* 14.1 (2015): 27-29.
4. Insel T, *et al.* "Research domain criteria (RDoC): toward a new classification framework for research on mental disorders". *American Journal for Psychiatry* 167.7 (2010): 748-751.
5. Fonagy P, *et al.* "Affect regulation, mentalization, and the development of the self". New York: Other Press (2002).
6. Schuengel C, *et al.* "Supporting affect regulation in children with multiple disabilities during psychotherapy: A multiple case design study of therapeutic attachment". *Journal of Consulting and Clinical Psychology* 77.2 (2009): 291-301.
7. Meurs P, *et al.* "Affect interpretation and emotion regulation. I Feel Pictures Test". Leuven: Lannoo Campus (2008).

8. Feldman R. "Parent-infant synchrony and the construction of shared timing physiological precursors, developmental outcomes, and risk conditions". *Journal of Child Psychology and Psychiatry* 48.3-4 (2007): 329-354.
9. Iacoboni M., et al. "Grasping the intentions of others with one's own mirror neuron system". *Public Library of Science Biology* 3.3 (2005): e79.
10. Ammaniti M and Ferrari P. "Vitality affects in Daniel Stern's thinking-a psychological and neurobiological perspective". *Infant Mental Health Journal* 34.5 (2013): 367-375.

Volume 9 Issue 2 December 2017

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