Attention Deficit Disorder or Attachment Deficit Disorder?

Bozhena Zoritch

Consultant Paediatrician
Ashford and St. Peter’s Hospital
Chertsey, Surrey

bozhena.zoritch@asph.nhs.uk
Eppur si muove
And yet it moves
Galileo Galilei
The Road to Harm is Paved with Good Intentions – The Patient Experience Matters
What is attachment?

- Collins dictionary and thesaurus
  fondness, affection, bond, devotion, liking, tenderness, LOVE

And the opposite is

- animosity, antipathy, aversion, distaste
  loathing, hostility, HATRED
• Bowlby frustrated with psychoanalytical theory

“Innate process which, in adequate rearing environment, leads to a stable sense of attachment security”

Foundation for later social relationship
Hermes – god with ADHD

“I care about sleep and my mother’s milk and having wraps around my shoulders and warm baths” — Homeric Hymns
God of thieves and travellers, inventor of music and guide of souls
Attachment - core principles

- Emotional **attunement**
- “Internal working model”
- Dynamic
- “Instinct” related to parent’s own early parenting
- Physical and **emotional availability** of the parent – how much is good enough?
- What factors in a parent and a child affect the **quality** of attachment?
- Any other variable? – **resilience**, other relationships
- **Attachment style** is not attachment disorder
What happens to the child?

- Perception of relationships
- Forming relationships
- Self perception
- Adaptability
- Transition to independence
- Development
- Physical health
Secure attachment (55 %)

Parenting
Well attuned, breaks effectively repaired

Child’s perception of relationship
Valuable, attention worth seeking and readily achieved

Developmental implication
Competent in functioning independently and in using relationship to learn, loveable self
Secure adult

- Can integrate cognitive and affective information in order to form close relationships
- Can predict appropriate rewards and make accurate decisions
Insecure attachment (45%) - not necessarily abnormal

Strange Situation categories – attachment styles in normative population

- Anxious – Ambivalent (9%)
- Avoidant (16%)
- Disorganised (19%)
Anxious attachment (child)

Parenting
Inconsistently attuned, unpredictable

Child’s perception of relationship
Valuable but unreliable, dependant on approval for self esteem

Developmental implication
Attention seeking, anxious to please, maximise negative emotion

Lots of social contacts, seeks intimacy and closeness, although anxious
“Preoccupied” state of mind (adult)

- Preoccupied with own feelings and perspective
- Behaviour organized around fear and anger
- Distant
- Tends to use cognitive information
Avoidant attachment

Parenting
Non-attuned, often aggressive

Child’s perception of relationship
Unhelpful or frightening, attention feels unsafe

Developmental implication
Social learning impaired, may select non-personal abstract skills e.g. computing, minimises negative emotion

Self reliant and independent
“Dismissive” adult

- Dismisses own feelings, intentions and perspectives
- Likes rules
- Parenting less warm and responsive
- Can lead to child’s emotional neglect
Disorganised attachment (19%)

Parenting
Abusive and neglectful

Child’s perception of relationship
Confusing, unhelpful,

Developmental implication
Problem living independently and in relationships, can’t integrate, fear of abandonment
Reactive attachment disorder (RAD) – severe and rare

Inhibited type
- excessively inhibited, hyper vigilant, ambivalent

Disinhibited type
- indiscriminate sociability
- inability to exhibit appropriate selective attachments

Poor prognosis in building relationships, emotional development and intimacy
Reactive attachment disorder (RAD) and ADHD

Children raised in institutions – RAD and ADHD common

Study of RAD children and controls with non-institutional but ‘pathogenic care’
(Pinto, 2006)
- 64% RAD children have ODD or CD
- 12% RAD children have ASD
- 68% RAD children have ADHD
Implies association – not causality

How to discriminate between RAD and ADHD? (Follan, 2011)
“cuddliness with strangers,” “comfort seeking with strangers”
Child with ADHD can evoke ADHD symptoms and hostility in non-biological mother.
Asking about attachment

- Parental childhood attachment
- Closeness
- Stranger awareness
- Attention seeking behaviour
- Stress regulation
- Body signals (eating pattern, toileting)
- Play
- What is he/she good at?
Attachment and ADHD – complex relationship

Parents with ADHD and environment for the child

How easy is it to parent if you are affected by ADHD?

Low threshold for treatment
How does ADHD in the child affect attachment?

- “Difficult temperament” in ADHD child can disturb the process of attachment

- Sleep problems, distracted behaviour and poor eye contact will affect parent-infant interaction

- Low threshold for treatment
Cross-sectional studies – imply association, not a cause

- ADHD associated with attachment insecurity
  Parents “unresponsive, unreliable and controlling,”
  (Clarke 2002, Finzi-Dottan 2006)

- Disorganized attachment of children with ADHD predicts ODD
  (Green, 2007)

- Only 7% of children with ADHD show secure attachment, insecure attachment mainly avoidant type
  (Strobe, 2013)
Prospective studies in mothers of children with ADHD
- beware of factors not accounted for

- Confirm association of disorganised attachment (DA) in a child with ODD and ADHD (Bohlin, 2012; Thorell, 2012)

- DA was associated with high maternal expressed emotion characterised by hostility, critical comments and intrusiveness (Green, 2007)

- High expressed emotion is typical of adult DA

- Anxious attachment common in mothers (Quiroga, 2007)

- Insecure and DA type attachment in mothers related to child’s severity of ADHD (Kissgen, 2009)
How reliable is the assessment of attachment in children with ADHD?
- this might be part of the problem

Methodology of assessment using attachment and non-attachment story stems

Children with ADHD are less coherent and more negative when interpreting narrative stories – this confounds attachment assessment (Scholtens, 2014)

Having ADHD leads to a child being more negative irrespective of quality of attachment – dark picture

Does cognitive deficit and conduct disorder affect assessment of attachment? – not necessarily
Parental attachment – prospective study
(measure of parent variables first)

Greater paternal sensitivity associated with less inattention and hyperactivity

Maternal intrusiveness related to attentional difficulties

Maternal positive regard – less inattention
(Keown, 2011)
In summary - Confounding variables

- Parental ADHD
- Parental insecure attachment
- Parental mental health
- Association, not causality
- Measure of attachment in children
Can anything be done if child with ADHD is insecurely attached?

- **Parent training – early childhood**
  to include parental sensitivity and behaviour training, video feedback programmes and long term psychotherapy (NICE, 2015)

Attachment based social skills training or parent training in ADHD does not add any extra value (Storebo, 2014, 2015)

- **Diagnosis and treatment of ADHD**
The chemical that binds us – oxytocin is the “molecule of parental love”

NEUROBIOLOGY OF ATTACHMENT
Human
- OXTR (rs53576, rs2254298, rs2268493 etc)
- CD38

Genetic level

Medial prefrontal (Anterior cingulate)
- Striatum, Amygdala
- Hypothalamus
- Brainstem

Neural level

Intermediate phenotype

Behavior level

- Social perception
- Trust, Empathy
- Ethno-centrism
- Autism

Animal (Prairie voles, Mice, Rats, Sheep...etc)
- OXTR knockout mice
- CD38 knockout mice

Treatment effect of exogenous oxytocin or its agonist

Prelimbic cortex
- Striatum, Amygdala
- Hypothalamus
- Brainstem

Pair-bonding
- Parental care
- Mate-guarding
- Monogamy
Oxytocin in women - raises in pregnancy

- Important in birth and lactation for humans and other mammals
- Breastfeeding stimulates production of oxytocin
- Prepares brain for long term child rearing
- Connects with the brain’s dopamine “reward” system
- Critical role in strengthening mother-infant bond
Fathers

- Father’s brain is sensitive to childcare experience as measured by oxytocin level, activation of parental brain network and brain plasticity (Feldman 2010).

- Primary carer fathers have similar brain activation and oxytocin level as primary carer mothers when exposed to infant related cues (Abraham, 2014).

- Administration of oxytocin to fathers led to increase of oxytocin in their child and improvement in social reciprocity (Weisman, 2012).
Vulnerability and resilience
(Feldman, Biological Psychiatry, September 2015)

- Genetic factors – some children and adults are more vulnerable to sub-optimal nurturing environment

- **Problems** in dopamine, oxytocin and serotonin receptor genes identified in adults with insecure attachment (Michalska, 2014)

- Extreme environment deprivation – blunted oxytocin response to rewarding event (Fries, 2005)

- **Depression, substance abuse and PTSD will effect brain plasticity**
  (Kim, 2015), dopamine and oxytocin system.
Maternal high risk oxytocin receptor together with poor maternal care associated with low level of child oxytocin (Feldman 2013)
Attachment difficulties – present and future approach

- **Address depression**
  Serotonin gene mutation more prevalent in the mothers of adults with ADHD

- **Good parent training strategies - avoid blaming the parents**

- **Can these be enhanced by synthetic oxytocin?**
  Helpful in men with attachment related difficulties
  Decreases hostility during father-child game
  Would work better in augmenting psycho-therapeutic intervention?
Intranasal oxytocin increases mother infant eye gaze in insecure mothers.
Oxytocin increases reward and amygdala response to infant faces in addicted mothers

Addicted Mothers (n=3)

Oxytocin > Placebo

DORSAL STRIATUM

AMYGDALA
Treatment for oppositional behaviour or conduct disorder in ADHD?
Oxytocin in children with ADHD (Sasaki, 2014)

Fig. 1. The serum levels of OXT in neurotypical controls and ADHD patients. The serum levels of OXT in ADHD (n=36) were significantly (P<0.001, t=-4.273, d.f.=56) lower than those of neurotypical controls (n=22). Kruskall-Wallis test, detected significant differences in OXT serum levels between the neurotypical controls and the drug naive ADHD and the drug medicated ADHD groups.
ADHD co-morbidity and oxytocin

- Callous-unemotional traits in children with ODD were associated with specific structure of oxytocin receptor gene and lower oxytocin (Dadds, 2014)

- Genetic variation in the Oxytocin receptor gene influences social cognition in ADHD (Gill, 2010)
CONCLUSION

- Milder attachment problems unlikely to lead to ADHD but will be a factor in ODD

- Parent training recommended in ADHD and ODD but difficult – could oxytocin treatment help?

- Many parents do excellent job in bonding with their ADHD children

- Professionals should show compassionate solidarity to families affected by ADHD
After diagnosis and treatment

- **Parent:** What I do notice I **handle him very differently** now. Once upon a time I’m sure I would have shouted and reacted in a bad way but now if I shout at Oliver he tries to shout back and that gets us nowhere.

- The other day Oliver was kicking off about something and I just sat with him **its fine, just calm down, take a deep breath.** Whereas once upon a time I would have been like for god sake put your shoe on. So, I have learnt that over time, obviously. That would be useful as a parent to understand worst case scenarios and **how you should behave as a parent.**

**Parent:** Like **when he was wrecking my room I did not know what to do,** I had to leave and go next door and cry and said can you please go and calm him down as he is not listening and I don’t know what to do. **Now I would know what to do.**
Social relationships –
the most important quality of life outcome
in ADHD
All you need is love?

- It is complicated......