Childhood traumatic experiences and neurodevelopmental disorders – ‘double jeopardy’?

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Something we all know…

**ABUSE**
- Physical
- Emotional
- Sexual

**NEGLECT**
- Physical
- Emotional

**HOUSEHOLD DYSFUNCTION**
- Mental Illness
- Incarcerated Relative
- Mother treated violently
- Substance Abuse
- Divorce

*Felitti et al*

Slide credit: Prof. Helen Minnis
The ACEs load

Risk Factors for Adult Depression are Embedded in Adverse Childhood Experiences

Source: Chapman et al, 2004

Slide credit: Prof. Helen Minnis
Risk Factors for Adult Heart Disease are Embedded in Adverse Childhood Experiences

Source: Dong et al., 2004
The bigger the child’s load, the higher their risk
Implications of ACEs research

Phase 1
Trauma Aware
Recognition & Awareness

The Four Rs of Trauma-Informed Care
- Realize
- Recognize
- Respond
- Resist Re-traumatization

This image is adapted from Advance Education and Mental Health Services Administration (2013). SAMHSA's concept of trauma and guidance for a trauma-informed approach K12 Digest no. 2013-444. HHS Publication no. (SMA) 14-4944. McCammon, M. O. Substance Abuse and Mental Health Services Administration.
The practical implications of the emerging findings in the neurobiology of maltreatment for looked after and adopted children: recognising the diversity of outcomes

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Abstract
The cutting-edge scientific research that is emerging regarding the neurobiology of maltreatment and neglect is highly relevant for thinking about adopted and fostered children. Knowledge about the science has many areas, from child care proceedings to the mental health of children and young people. However, the science is complex and it is not yet clear what is a valid summary of the rapidly expanding literature to guide practice. There is some concern from the scientists themselves that the research cannot be translated into practice.

The purpose of this article is to review some of the more recent research findings, and to consider the potential consequences of maltreatment. A narrative is developed that pays due attention to the findings, while drawing out practical implications for professionals working with looked after and fostered children. In particular, the notion of differential susceptibility to adversity and the importance of considering the inter-relatedness of the biological systems affected and the interplay with environments over time. The article reviews the research and identifies areas for further research.

Practitioner Review: Twenty years of research with adverse childhood experience scores – Advantages, disadvantages and applications to practice

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Background: Adverse childhood experience (ACE) scores have become a common approach for considering childhood adversities and are highly influential in public policy and clinical practice. Their use is also controversial. Other ways of measuring adversity - examining single adversities, or using theoretically or empirically driven methods - might have advantages over ACE scores. Methods: In this narrative review we critique the conceptualisation and measurement of ACEs in research, clinical practice, public health and public discourse. Results: The ACE score approach has the advantages – and limitations – of simplicity: its simplicity facilitates wide-ranging applications in public policy, public health and clinical settings but risks over-simplistic communication of risk/cause, determinism and stigma. The other common approach - focussing on single adversities - is also limited because adversities tend to co-occur. Researchers are using rapidly accruing datasets on ACEs to facilitate new theoretical and empirical approaches but this work is at an early stage, e.g. weighting ACEs and including severity, frequency, duration and timing. More research is needed to establish what should be included as an ACE, how individual ACEs should be weighted, how ACEs cluster, and the implications of these findings for clinical work and policy. New ways of conceptualising and measuring ACEs that incorporate this new knowledge, while maintaining some of the simplicity of the current ACE questionnaire, could be helpful for clinicians, practitioners, patients and the public. Conclusions: Although we welcome the current focus on ACEs, a more critical view of their conceptualisation, measurement, and application to practice settings is urgently needed. Keywords: Adversity; child abuse; early life experience; social work; social psychiatry.
Could it be temperament?

Differential susceptibility
Some children are, temperamentally, more sensitive to the environment than others.

Slide credit: Prof. Helen Minnis
Why is stress calibration so important?

"children have evolved ... to respond in biologically adaptive ways to harsh and unsupportive family environments, not just to loving and supportive ones"
Equifinality

Predictors 1

Predictor 2

Predictor 3

Predictor 4

Outcome 1
Multifinality

Psychosis
Depression
Healthy functioning
Reactive attachment disorder
We had noticed that some maltreated children – especially those with attachment disorders – had multiple diagnoses.

Kočovská, 2012

Minnis, 2013
…and a specific example of ESSENCE

MAPP
Maltreatment Associated Psychiatric Problems

Minnis, 2013

“Non-optimal psychosocial factors appear to interact with [minor neurodevelopmental problems] in the moulding of psychiatric disorders.”

Gillberg, 1983
PARENT REPORTS ON AUTISM SYMPTOMS (ASSQ) IN 6200 CHILDREN AGED 7-9 YEARS DATA FROM (LARGE GENERAL POPULATION) BERGEN CHILD STUDY

ASSQ score (Range 0-54, here shown 0-42)
Study 1: Maltreatment-associated neurodevelopmental disorders: a co-twin control analysis

Do children exposed to maltreatment have an increased neurodevelopmental disorder (NDD) load compared to children not exposed to maltreatment?

The Child and Adolescent Twin Study in Sweden (CATSS)

• $N = 13,052$ (49.6% females) aged 9
Maltreatment-associated neurodevelopmental disorders: a co-twin control analysis

• Do children exposed to maltreatment have an increased neurodevelopmental disorder (NDD) load compared to children not exposed to maltreatment?
Yes!

Maltreated children are nearly **ten times** as likely to have 3 or more neurodevelopmental problems

Slide credit: Prof. Helen Minnis
• **Is CM a risk factor for an increased NDD load when controlling for familial effects?**
Childhood Maltreatment

Genetic Factors

Watch Lisa Dinkler and Helen Minnis explain https://www.youtube.com/watch?v=o1cW8Pzzu4U

Slide credit: Prof. Helen Minnis
Think...could ASD, ADHD, Tourettes, Learning disability be in the mix?

Especially if trauma is in the mix

Use standardised tools and other colleagues to explore these (consult with SLT, OT, psychology)

ALWAYS involve informants

Psychotherapy likely to be more effective if you treat BOTH neurodevelopmental disorders and psychiatric disorders
1. **Clinicians should be aware of**

   • increased risk for maltreatment in children with multiple neurodevelopmental disorders

   • increased risk for (multiple) neurodevelopmental disorders in maltreated children

2. treatment strategies focusing on “trauma” unlikely to have an effect on the amount of neurodevelopmental disorders

3. Need for assessment for neurodevelopmental disorders in children and adults with “trauma-related disorders”
• Could your patient with “treatment-resistant depression” have Autism?
• Could your patient with Borderline Personality Disorder have ADHD, complicated by PTSD and an Attachment Disorder?
• Could your patient with trauma-related symptoms have Tourettes?
Thank you!

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