Clinic Cases in Paediatrics:

An Outpatient Clinic Manual

SECOND EDITION

Edited by
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Chapter 9

Developmental trauma and adverse childhood experiences

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Introduction

While it is possible to practise paediatrics in a medical vacuum, taking a more holistic view not only is of greater benefit to the child and family but can also provide greater satisfaction to the doctor. The essence of holistic medicine in general and paediatrics, in particular, involves not just thinking about a particular disease on a microscopic level, but widening the focus to include the impact on the child, their family, and the wider society. And beyond this, thinking about the factors that can improve personal and communal well-being.

Two inter-related concepts that have become bedrocks of child health are paying attention to trauma and attachment issues, especially in early childhood and awareness of adverse childhood experiences (ACEs).

Genetically, we are, as humans, almost entirely identical, sharing 99.9% of our DNA with each other. Each of us continuously changing, influenced by nature and nurture, acting kindly or otherwise towards us. In turn, how we behave has an impact on the people and society around us.

There is an eternal tension between each individual and the wider society. Different eras and different cultures have placed different emphasis on the relative importance of the rights and needs of individuals compared with those of the wider group. This balance tends to shift over time. The paradox is that we all need a wide group of people to flourish as individuals and there are times when we need to suppress our own desires for the benefit of the larger group, but a successful society needs individuals to flourish and therefore needs considerable flexibility. As Rabbi Hillel (who lived around the time of Jesus) famously said, "If I am not for myself, who will be for me? If I am only for myself, what am I? And if not now, when?"

Adverse childhood experiences

We have known for some time, thanks to the Barker hypothesis, that antenatal factors such as nutrition can have lifelong implications in the as yet unborn child. It is also well described that poor nutrition in the first few months of life can have a long-term impact of neurodevelopment. More recently, there is a growing awareness of the devastating long-term impact of social adversity on children.

Adverse childhood experiences describe episodes in a child's life which are associated with significant trauma. Essentially undermining the child's sense of safety, stability and bonding. These can be extremely specific events, such as episodes of abuse but more often are chronic in nature, such as growing up in an environment with violence, mental health issues, drug issues, poverty, etc. Emotional deprivation or threat is usually more pervasive than physical danger but is similarly toxic.

When assessing a situation, it is helpful to identify features in a child's life that offer hope and support- so-called protective factors and those are that represent threat – risk factors. Unfortunately, too many children are burdened with numerous risk factors and few protective ones. In vulnerable children, it is enlightening to identify any protective factors and essential to try to increase these. It can be helpful to consider these factors in the individual themselves, within the wider family and then the wider community. For example, excellent community support may offer some counterbalance to failings within the family.

Not surprisingly, the more protective factors that are identified in a child's life the greater the likelihood of them thriving and flourishing, building resilience which is essential for successful life. Conversely, people with the fewest protective factors, and therefore the least resilience, are more likely to experience more adversity, with increasing adversity likely to reduce what protective factors are present, leading to a downward spiral of despair and dysfunction.

Toxic stress from ACEs negatively affects brain development, immune function and stress-response systems which impact attention, decision-making and learning. Children growing up with toxic stress can, as they grow up, have difficulty forming healthy and stable relationships. They may also have unstable work histories struggling with finances, jobs, and depression throughout life. These effects can also be passed on to their own children.

The effects of adverse childhood experiences are cumulative with the impact manifesting in all areas of health and well-being. For example, exposure to ACEs is associated with an increase in physical health issues such as cancer, diabetes and cardiovascular disease, mental health conditions and suicide.

Resultant behaviours increase the risks of limited educational achievement, criminality, drug and alcohol abuse, involvement in abusive relationships, sexual exploitation, teenage pregnancy, poverty and poor employment and other factors that predict poor life outcomes.

As with most serious conditions prevention is better than cure. Once the problems have become established, they are normally entrenched.

The Centers for Disease Control and Prevention identifies various prevention strategies. These come broadly under the headings:

- Strengthen economic supports to families
- Promote social norms that protect against violence and adversity – making them unacceptable
- Ensure a strong start for children
- Teach skills – personal and interpersonal as well as life skills
- Connect youth to caring adults and activities
- Intervene to lessen immediate and long-term harms

While most of these are at a societal level, paediatricians can signpost and support, and perhaps even become politically involved to advocate for changes that will provide dividends for the wider society as much as for individuals themselves.

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Developmental trauma

It is probably most useful to view the impact that ACEs have on children through the prism of understanding developmental trauma. The challenge that every baby provides its family is to create an environment that transforms an entirely dependent, vulnerable individual into an independent resilient one. This process requires the child to feel contained, a pervasive feeling of physical and emotional safety and security, yet able to explore and expand its horizons. Doing this successfully requires patience, every new experience requiring significant consolidation to make it feel comfortable. Crucially in order to develop positive relationships – the cornerstone of successful living – there is no substitute for experiencing these, particularly from the primary caregivers, and this demands high levels of constancy.

Any interruption or distortion of this process is likely to cause developmental trauma. The injury that it causes will depend on many factors, including the nature of the particular trauma such as separation, detachment, abuse, when the trauma occurs in a child's life, and how protracted the trauma is.

Different areas of the brain are responsible for different responses and activities. Basically, the brainstem is involved in primitive survival. When the brainstem is activated or more correctly over activated, this leads to the well-described responses of fight, flight, or freeze. The midbrain or amygdala is associated with feelings and empathy and the cortex with rational thought.

The neuro-migratory theory of brain development proposes that as the brain develops from brainstem to cortex, each of these areas is susceptible at the time of the greatest development. In addition, a higher level is unable to function normally unless there is equilibrium in the levels below. For example, an overactive brainstem will prevent sound functioning of the midbrain and cortex. This would translate as a child feeling so threatened that their ability to empathise or rationalise would be severely impaired.

Understanding this provides an explanation for what is often considered difficult or challenging behaviour in children. Often this behaviour is simply responding in a developmentally appropriate fashion, trying to protect themselves from a perceived ongoing threat. Children may dissociate or freeze, either trying to wish themselves somewhere else or appear invisible. Alternatively, they may 'act out' agitated, confrontational and violent. Unfortunately, it is easy to respond to these behaviours on merit either medicalising or punishing, this results in an escalation of the endangered behaviour and the inappropriate response. What these children really need are understanding and downregulating.

Behaviours shown by these children vary but not surprisingly are often interpreted as challenging and thought of as problems themselves rather than a near inevitable result of the child's life experience – Sula Wolff, an early champion of child psychiatry, famously said that behind every problem child is a child with a problem.

A host of behaviours are more common in children who have suffered trauma and attachment issues, these adaptive behaviours can be both internalising and externalising, including hypervigilance and classic attention deficit hyperactivity disorder (ADHD) type behaviour or more dissociating and distracting showing more autistic type behaviours, difficulty focussing can impact learning and school performance and their behaviour in addition to never having learnt about safe relationships can impact their social skills. Older children are more likely to have issues with drugs, alcohol, self-harm, poor relationships and to face a life of disappointment.

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A common example is the highly agitated young person who may present to hospital. Because they may be deemed to be posing a threat to themselves or others they may be sedated or restrained and isolated in a punitive environment where all reasonable distractions and signs of normality have been removed. Most children in this situation feel a total lack of containment or control, many will have a history of physical or sexual abuse and all of them will feel a need to be hypervigilant. Both physical and chemical restraints are likely to be antagonistic. Ideally, some form of de-escalation should be tried first.

Another common example is the presentation of medical symptoms which are frequently persisting and often perplexing. These are often said to have somatising or conversion disorders. It is hard to know the level of insight that the young person and family have as to the complex cause of their symptoms, and families may be variably amenable to exploring deeper psychological issues. For various complex reasons, they are often less responsive to psychological intervention – essentially people that can psychologise do not need to somatise. This is a highly complex area and there are multiple benefits associated with displaying and maintaining physical symptomatology.

From theory to practice

In practice, there is a challenge between taking physical symptoms seriously and investigating appropriately, but also knowing when to stop these and challenge the family to confront alternative causes for the symptoms. The longer children are enrolled in a medical pathway the more difficult it is to disengage from this.

How each person reacts to their environment and life experiences are controlled and modified by various different factors. It is always important to try to identify and engage so-called 'protective factors'. These may be in the children themselves – their personality, intelligence, understanding past experience, etc. the wider family – positive relationships with other family members or the wider community – positive relationships and interactions through wider community especially school which may provide a place of safety, and mentors and role models.

ACEs are devastating on an individual level and pose a public health time bomb. Improving relationships and showing kindness are the mainstay of treatment – with prevention being many times better than attempting to cure.

On an individual level, there are a number of screening tools that can reveal what a person's life is really like, and whether they need help and support or are at significant risk of self-harm. As with have many of these tools, what starts out very simply becomes a bit more complicated over time. What started out as 'HEADS' has evolved to 'HEADSSS' or 'HEADSED'. These aim to provide a vehicle for discussing a young person's life. Most young people are happy to talk about these things and are usually pleased rather than upset about being asked. It is important for a paediatrician to be comfortable discussing all of these subjects with their patients. These include:

- Home – including Do they have one? Where and with whom do they live? Is there constancy? and, What is the home environment like? Is there any violence in the home?
- Education and employment – Are they in school? What is school like? Do they have unmet needs? Is there any bullying?
- Activities – What activities are they involved in out of school? What are their peer relationships like?

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- Drugs – Are they involved in drugs?
- Sex – Are they sexually active, and if so, is it a healthy relationship? Have they been groomed or exploited? What is their sexual orientation?
- Suicide/Self-harm – How do they feel about themselves? Are they self-harming? Have they contemplated suicide? and, How is their general emotional well-being?
- Safety – Are they physically and emotionally safe? Do they engage in risk taking behaviours?

Asking these questions will provide a picture of the young person's life and may hopefully indicate areas where change may be possible. It is very easy to focus on the negative rather than the positives in a child or young persons life. It is powerful to start any discussion with what they believe are there strengths and what are the good things that are happening in their lives. It is easy to think of medicine in a very orthodox manner as quite simply the treatment of physical disease. Increasingly medicine is about trying to treat the whole person who may have no physical disease at all. As doctors we do not have the ability to resolve all of these problems. We do have the ability to show kindness which is an incredibly powerful medicine. Much as we are trained and experienced in the prescribing of pharmaceuticals, we need to be aware of the social therapeutics needed for these young people.

Additional resources for parental support

1. Centers for Disease Control and Prevention. Fast Facts: Preventing Adverse Childhood Experiences. USA: CDC, 2023.
2. Lyons S, Whyte K, Stephens R, et al. Beacon House Developmental Trauma Close Up. UK: Beacon House, 2020.
3. Perry BD, Szalavitz M. The Boy Who was raised as a dog. New York: Hachette Book Group, 2017: 448.
4. Perry BD. Born for Love: Why Empathy Is Essential-and Endangered. United States: Harper Collins, 2011.

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SECOND EDITION

Clinic Cases in Paediatrics: An Outpatient Clinic Manual is an essential guide to support mastering the complexities of outpatient paediatric care and office paediatrics, with 100 chapters covering the whole spectrum of paediatric presentations. Each clinical case begins with an authentic referral letter from a "General Practitioner" leading to a structured approach to the management of the child/young person exploring differential diagnoses and management.

This manual offers a practical, case-based approach to support clinical skills and decision-making which will be helpful to anybody who sees children in an outpatient or office setting or is preparing for professional examinations.

- Fully updated and expanded for the second edition
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ISBN 978-1-78779-181-7