Partnering for Resilience: Learn, Empower, and Connect to Address Toxic Stress

American Academy of Pediatrics
Section on Pediatric Trainees
2016-2017

Learning objectives

1) Review vicarious trauma
2) Discuss a clinical vignette
3) Learn about adverse childhood experiences, toxic stress, and resilience.
4) Discover ways to get involved with the 2016-2017 SOPT Advocacy campaign.
5) Explore optional activities related to the clinical vignette.
Vicarious Trauma

**Definition:** The emotional residue of exposure that may come from working with families experiencing trauma and hearing their stories.

Self-care is key!
Vignette
Neonatal Intensive Care Unit

NICU call

You have just returned from a vaginal delivery for a 30 year old G2P2 woman who delivered at 32 weeks. The cause of her preterm labor is unknown.

The baby is doing well in the NICU. The dad is at bedside and seems anxious.

You are now sitting down to review her records.
**Mother’s chart**  
**Prenatal history**  
- Normal prenatal labs  
- No medical problems during pregnancy  
- 20 week ultrasound is normal except for mild asymmetric intrauterine growth restriction.  
- Received complete prenatal care, except has two “no-show” appointments.  
- A few OB notes described the mother as looking “sad.”

**Mother’s chart**  
**Labor and Delivery**  
- Started contracting immediately after preterm rupture of membranes. No preceding illnesses or fevers. GBS negative.  
- Was given one dose of betamethasone but her contractions increased and she delivered shortly thereafter.  
- Rupture of Membranes: 4 hours

She is recovering well. However one of the nurses expressed concerns that she is overly anxious and thinks she noticed bruising on her face.
Group discussion

Think about a differential diagnosis for preterm labor.

Also consider what questions you might ask the family to better assess what is happening.

Broad differential

Placental pathology
Maternal etiology
Fetal etiology

Some social factors to consider:
• Domestic violence
• Maternal depression
• Poverty
• Race/Ethnicity
• Substance use
• Trauma
• Maternal stress and anxiety
Upon further questioning you learn

Over the course of the pregnancy, her partner has become more controlling. He frequently yells at her and would not let her eat particular foods for the “health of the baby.” He also would not let her see her friends as he thought “they were a bad influence.”

She becomes tearful when she tells you that immediately prior to the delivery he pushed her and she fell on her face. She feels like it is her fault that she delivered early. She states he has not pushed her before.

In your mind, you wonder if domestic violence (DV) can be associated with preterm labor. You also are thinking about how to respond and what resources may be available for this family.
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Overview of the campaign

October to February: LEARNING about toxic stress and resilience

March to July: EMPOWERING families in clinic.

August to October: CONNECTING families experiencing toxic stress with resources.
Campaign activities

1) **Bi-monthly text messages** related to the campaign.
2) **Film screening** of the documentary “Resilience”
3) **Webinars** by topic experts.
4) **Legislative day of action** in February 2017
5) **Connecting with a community partner** day of action in August 2017.
6) **Quarterly newsletters.**
7) **Funding** available through the CATCH program.
8) **Opportunities** for leadership throughout the year!

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Call to action video
Question 1: What is the Adverse Childhood Experiences Study?

The Original Kaiser-CDC ACEs Study

<table>
<thead>
<tr>
<th>ACE Category</th>
<th>Women Percent (N = 9,367)</th>
<th>Men Percent (N = 7,970)</th>
<th>Total Percent (N = 17,337)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABUSE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Abuse</td>
<td>13.1%</td>
<td>7.6%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td>27%</td>
<td>29.9%</td>
<td>28.3%</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>24.7%</td>
<td>16%</td>
<td>20.7%</td>
</tr>
<tr>
<td><strong>HOUSEHOLD CHALLENGES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother Treated Violently</td>
<td>13.7%</td>
<td>11.5%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Household Substance Abuse</td>
<td>29.5%</td>
<td>23.8%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Household Mental Illness</td>
<td>23.3%</td>
<td>14.8%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Parental Separation or Divorce</td>
<td>24.5%</td>
<td>21.8%</td>
<td>23.3%</td>
</tr>
<tr>
<td>Incarcerated Household Member</td>
<td>5.2%</td>
<td>4.1%</td>
<td>4.7%</td>
</tr>
<tr>
<td><strong>NEGLECT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Neglect¹</td>
<td>16.7%</td>
<td>12.4%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Physical Neglect¹</td>
<td>9.2%</td>
<td>10.7%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>
Cumulative ACES & Mental Health$^{1,2}$

![Graph showing prevalence of different disorders with ACES 0 to 4 categories.](image)

$^1$Data from the National Comorbidity Survey-Replication Sample (NCS-R).


Cumulative ACES & Chronic Disease$^1$

![Graph showing prevalence of chronic diseases with ACES 0 to 4 categories.](image)

Question 2: Defining Toxic Stress

1) How do stress responses differ?
2) What determines whether an adverse childhood experience may be associated with a toxic stress response?
Characterizing Stress Responses

<table>
<thead>
<tr>
<th>STRESS RESPONSE</th>
<th>Physiologic STRESS in Childhood</th>
</tr>
</thead>
<tbody>
<tr>
<td>DURATION</td>
<td>Brief</td>
</tr>
<tr>
<td>SEVERITY</td>
<td>Mild/moderate</td>
</tr>
<tr>
<td>SOCIAL-EMOTIONAL BUFFERING</td>
<td>Sufficient</td>
</tr>
<tr>
<td>LONG-TERM EFFECT ON STRESS RESPONSE SYSTEM</td>
<td>Return to baseline</td>
</tr>
</tbody>
</table>

**Question 3:** How does toxic stress affect the developing brain?
**Hypothalamic-Pituitary-Adrenal Axis Changes**

- Our stress response is developed for **short term threats** requiring brief bursts of energy.
- If we face chronic, relentless stressors it can lead to an **overactivated** Hypothalamic-Pituitary response.
- When the HPA axis is overactivated in childhood, there are long term **inflammatory and immunologic consequences**.

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**Brain Structure**

- Hypertrophy and overactivity of the **amygdala**
- Inhibition of neurogenesis in the **hippocampus**
- Neuron and neural connection loss in the hippocampus and **prefrontal cortex (PFC)**

**Brain Function**

- May affect the way emotions are processed, and predispose to stress responses.
- May affect working memory and learning.
- May affect decision making, impulse control, and judgement.
Epigenetic changes

- Toxic stress responses can include changes in gene expression, such as which genes are turned on or off.
- This may be transmitted from parent to child.
- Studies show that epigenetic changes may be reversible if trauma is addressed.

Question 4: What are the potential health consequences of toxic stress?
Clinical Manifestations in Childhood

- Hyperactivity
- Depression
- Chronic pain
- Insomnia
- Lack of appetite
- Overeating
- Anxiety
- Enuresis
- Developmental delay
- Problems in school

Adult Morbidities Associated with Toxic Stress in Childhood

<table>
<thead>
<tr>
<th>Alcoholism and alcohol abuse</th>
<th>Liver disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>Intimate Partner Violence</td>
</tr>
<tr>
<td>Depression</td>
<td>Sexually transmitted diseases</td>
</tr>
<tr>
<td>Fetal death</td>
<td>Smoking</td>
</tr>
<tr>
<td>Illicit drug use</td>
<td>Suicide attempts</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>Unintended pregnancies</td>
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</table>
Question 5: What is Resilience?

The shift from *reactivity* to *resourcefulness* in moments of stress and crisis.
The Science of Resilience

What has been shown to help?

Primary prevention by
• Prenatal/home visiting programs.
• Early education and intervention.
• Support for the caregiver, focused on their needs.

Early support for families facing adversities:
• Conversations with trusted and well-trained healthcare providers.
• Connections to local resources.
• Policies focused on breaking intergenerational stressors.

Treatment for children already impacted by trauma/toxic stress
• Trauma-focused cognitive behavioral therapy,
• Parent-child interaction therapy.
• Child parent psychotherapy.
Case Example: Head Start, Trauma Smart
Parent-child interactions

• Consistently shown to be linked to improved child health and development

• Parents who themselves have experienced trauma may find it difficult to bond with their children.

• Empowering parents is a critical component of our job as pediatricians.
Partnering for Resilience

**Learn** about the science behind toxic stress, clinical manifestations of toxic stress, and resilience.

**Empower** families to harness their incredible resilience and empower clinicians to talk about toxic stress and resilience.

**Connect** families with community-based resources and leverage community partners.

Group discussion

How will our program participate in the Partnering For Resilience campaign this year?
“It is easier to build strong children than to repair broken men.”

Frederick Douglass (1817–1895)
Contact Us: pfrcampaign@gmail.com

Advocacy Campaign Tri-Chairs:

Maya Ragavan
Ryan Hassan
Sarah Maxwell

https://www.facebook.com/AAPSOPT
https://twitter.com/AAPSOPT

References

• Early Childhood Adversity, Toxic Stress, and the Role of the Pediatrician: Translating Developmental Science into Lifelong Health. http://pediatrics.aappublications.org/content/129/1/e224


• The Science of Early Life Toxic Stress for Pediatric Practice and Advocacy: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4074672/

• The Center for the Developing Child at Harvard University. http://developingchild.harvard.edu/

• The Center for Youth Wellness. http://www.centerforyouthwellness.org/

• Futures Without Violence: https://www.futureswithoutviolence.org/

• Adverse Childhood Experiences Study: https://www.cdc.gov/violenceprevention/acestudy/

• National Child Traumatic Stress Network: http://www.nctsn.org/
Special Thanks

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- Julie Raymond
- Barb Miller
- SOPT executive board

Back to the case

How may domestic violence (DV) during pregnancy affect the health and wellbeing of the survivor and her fetus?

What are some reasons why it may be challenging for DV survivors to talk to healthcare providers about the violence?
Domestic violence and pregnancy

Homicide is the 2nd leading cause of traumatic death for pregnant women.

DV is associated with multiple prenatal effects including:

- Small for gestational age/low birth weight neonate (Alhusen et al., 2014).
- Preterm labor (Harville et al., 2010)
- Perinatal death (El Kady et al., 2005; Coker et al., 2004)
- Substance use and smoking during pregnancy (Cheng et al., 2015)

In-utero and intergenerational effects

Multiple studies assessing in-utero genetic effects of DV:

For example:

- Analyzed the methylation status of an HPA regulator gene in 25 mothers and their children (Radtke et al., 2011).
- The presence of gene methylation in the child was significantly associated with exposure to DV during pregnancy (p < 0.05).
- The presence of gene methylation in the mother was not significantly associated with exposure to DV during pregnancy (p= 0.7).
The voice of a DV survivor

“When his father is yelling at me he balls up tight and I tell him [partner] to stop because he is stressing my baby out. And I swear the moment he [partner] leaves us, I take a deep breath, rub my belly, and he moves a bit.” (Alhusen & Wilson, 2015)

Domestic violence in clinic

• DV survivors often describe challenges discussing the violence with their healthcare providers.

• Studies have shown that a conversation with a trusted health care provider can empower women to leave abusive relationships (McCloskey et al., 2006).

• Multiple resources are available in communities to support and empower DV survivors.
Know your online resources

• Futures Without Violence: http://www.futureswithoutviolence.org/
• Health Cares About IPV: http://www.healthcaresaboutipv.org/specific-settings/pediatric-health/
• Look to End Abuse Permanently (LEAP): http://www.leapsf.org/html/pediatric.shtml
• National Traumatic Stress Network: http://www.nctsn.org/

Connect with a community partner

Please divide into groups and find an organization in your community that empowers DV survivors and their families.

Share your organization with the larger group. If you have time, create a list to share with your program.