Buffering Toxic Stress: A Biodevelopmental Approach to Screening and Community-Based Intervention

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Agenda

- Background
- Define types of stress (Positive, Tolerable, Toxic)
- Identify toxic stress
- Review of preliminary data supporting need for better screening and new innovations in screening
- Approaches to addressing toxic stress
  - What we know
  - Example
  - Attachment and Biobehavioral Catch-Up (ABC)
- Discussion/Questions

Background

DEFINE TYPES OF STRESS (POSITIVE, TOLERABLE, TOXIC)

IDENTIFYING TOXIC STRESS

INNOVATIONS IN SCREENING

Adverse Childhood Experiences

Adversity early in life has the potential for long-lasting impact on health and development throughout the lifespan. Adverse Childhood Experiences – or ACES – can lead to problems in brain development, later engagement in risky behaviors, chronic health problems, and can even lead to early death.

Reference: CDC, 2015
Types of Stress

In 2005 the National Scientific Council on the Developing Child introduced a scientifically grounded system of classifying the stress experience in order to differentiate between normative challenges that promote growth and development and challenges that may threaten child development.

- Positive Stress
  - Positive stress is the reaction to typical daily experiences that provide opportunities for growth and learning.
    - Challenge is introduced
    - Child becomes frustrated
    - Increase in heart rate, blood pressure, and stress hormones (adrenaline)
    - Caregiver provides guidance and support to child in completing the task
    - Child gains sense of mastery
    - Stress response subsides and body returns to normal state
    - Child learns adaptive responses to stressors

- Tolerable Stress
  - Tolerable Stress is the reaction to more serious stressors (community violence, frightening accident, illness, death of a loved one, etc.) and has the potential to damage the child’s brain structure if left unchecked.
    - These stressors subside over time or are buffered by supportive caregiver relationships.
    - Caregiver Support
      - Promotes feelings of safety.
      - Facilitates acquisition of coping and recovery skills.
      - Protects against escalation of tolerable stress to toxic stress.
Toxic Stress

- Toxic Stress is the reaction to chronic stressors that activate the body's stress response system (e.g., abuse, neglect, family relational problems, parental substance abuse, maternal depression, economic instability, chronic health issues, etc.).

- Toxic Stress occurs in the presence of stressors and absence of a stable and responsive adult or caregiver to offer buffering protection to the child.

- Ongoing activation of the body's regulatory/stress response system over time results in changes to the architecture of the brain.

- Changes to the brain can promote short-term effects on behavior and learning as well as long-term impairments and stress-related health and mental health problems.

Ecobiodevelopmental Framework

Impact of Early Adversity

Reference: http://developingchild.harvard.edu/resources/multimedia/interactive_features/ecdframework/

Source: http://www.lisc-chicago.org/news/2349
Toxic Stress Impact

- Disruption of the child’s stress regulatory system development as a result of toxic stress increases vulnerability to:
  - Inability to detect and respond to emotionally stressful stimuli such as distress cues of others.
  - Internalizing disorders (anxiety and depressive disorders).
  - Externalizing disorders (early onset aggression, oppositional defiant or conduct disorder, disruptive behavior disorder, antisocial behavior).
  - Chronic pain syndromes.
  - Immune-related disorders.
  - Cognitive deficits.
  - Disorganized attachment.


Toxic Stress Treatment

- Interventions that promote protective factors of attachment and sensitive parenting have been shown to:
  - Improve child stress regulatory capabilities.
  - Improve child coping skills.
  - Improve child social-emotional health.
  - Decrease incidence of disorganized attachment and increased secure attachment.
  - Improve child cognitive functioning.
  - Improve child management of challenging tasks and negative emotionality.
  - Reduce negative parenting attitudes and parenting stress.

Reference: Goldman Fraser et al., 2013.

Screening for Toxic Stress

CURRENT SCREENING TOOLS

GAPS

NEW INNOVATIONS
**Identifying Toxic Stress/Screening**

- Many types of screening tools exist.
  - Social-emotional health screening tools
    - Measure symptoms of toxic stress once they emerge.
    - Not prevention screening.
  - Trauma screening tools
    - Symptom focused.
    - Measure traumatic events.
    - Retrospective.
  - ACE Score
    - Not inclusive of all risk factors.
    - Does not include protective factors.
    - Retrospective.
    - Lack nuanced/degree of risk.
  - Risk/protective factors screening tools
    - Measure presence of risk/protection but not validated with a biological marker of stress.
    - May not measure the appropriate protective factors of attachment and sensitive parenting.

- **Identifying Toxic Stress/Screening**

  - No neurobiologically validated screening tool for identifying toxic stress currently exists.
  - ASQ-SE is widely used for identification of need for a referral for mental health assessment and serves as an often inadequate de facto proxy for toxic stress.
    - Of our current sample of 61 children, **no child** currently meets criteria for additional social-emotional assessment and support according to current screening practices.

- **Identifying Toxic Stress/Screening**

  - Children may not currently meet criteria for additional supportive services according to current screening practices but are facing a high level of risk.
    - The average child faces at least 5 major stressors in the areas of economic hardship, family health and mental health, and family relational factors.
    - 38% of caregivers meet the criteria for depression, a primary risk factor for toxic stress.
      - Impacts caregiver ability to be emotionally available to the child.
      - Increases risk of internalizing and externalizing disorders.
      - Threatening to attachment security and stress regulatory functioning. The impact is exponential when co-occurring with other stressors.
    - This level of risk is indicative of potentially toxic stress.
    - Therefore ASQ-SE in this case is not a good proxy for toxic stress screening.
      - Why? Not prevention focused, results may be an artifact of reporter bias, doesn’t consider family and environmental context.
Current Methods for Identifying Toxic Stress

- Observation
  - Symptoms of social-emotional disruption if present.
  - Recognize constellation of risk factors (presence and degree).
  - Awareness of parenting style and attachment characteristics.
- Integrate current risk screening/assessment into referral process.

New Innovations in Screening

- KU/Early Head Start research project
  - Develop a simple assessment of toxic stress risk and protective factors.
  - Provides detailed report of presence and degree of:
    - Household stressors of economic hardship, family health and mental health, family relations.
    - Protective factors of attachment characteristics (avoidant, resistant, contact-seeking, etc.) and sensitive parenting (intrusiveness, detachment, etc.).
  - Validate screening tool with biological marker of stress (child cortisol) and develop thresholds identifying toxic vs positive/tolerable stress.

WHAT WE KNOW

EXAMPLE
What We Know

- Protective factors of attachment and sensitive parenting have been shown to buffer against the impact of toxic stress.
- Short-term and targeted intervention has been shown to be more effective for targeting attachment and sensitive parenting than long-term, comprehensive approaches.
- Home-visiting, parent-focused approaches have been shown to be especially effective approaches for targeting these parenting behaviors.

References: Goldman Fraser et al., 2013; Van Ijzendoorn, Bakermans-Kranenburg, & Juffer, 2005

What We Know

- Children have more success when social-emotional and regulatory development tasks are mastered before proceeding to higher level tasks (neurosequential model).
- Early identification is important in order to capitalize on brain plasticity.
- Biobehavioral approaches that address the interaction between psychosocial, behavioral, and biological processes offer promising outcomes (Example: Attachment and Biobehavioral Catch-Up)

References: Garner, 2014; Goldman Fraser et al., 2013; Perry, 2009

Biodevelopmental Intervention Example

ATTACHMENT AND BIOBEHAVIORAL CATCH-UP (ABC)
Attachment and Biobehavioral Catch-Up (ABC)

ABC is a ten-week, targeted and manualized program delivered in the home. ABC was designed by Dr. Mary Dozier to help children who have experienced early adverse environments develop healthy regulatory systems to improve the child’s ability to cope and respond to continued stressful situations and buffer against the long-term effects of toxic stress.

ABC Empirical Foundation

- ABC is an evidence-supported intervention that targets parenting behavior to promote attachment and sensitive parenting to improve child regulatory capability and social-emotional wellbeing.
  - Various studies report positive results for children following ABC intervention, including:
    - Significantly more normative diurnal cortisol regulation.
    - Less negative emotionality.
    - Significantly lower proportion of disorganized attachments and increased proportion of secure attachment.
    - Less angry feelings expressed following a series of challenging tasks.
    - Significant improvements in child internalizing and externalizing problems.
    - Reduction in negative parenting attitudes and parenting stress.
    - Higher levels of cognitive functioning.
  - ABC has also been shown to have long-term efficacy.


Source: Dozier, 2014
ABC Intervention Targets

- Four Main Targets
  - Nurturance
    - Attending to a child who has expressed a need for nurturance using physical or verbal reassurance.
  - Synchrony/Following the Lead
    - Interactions between parent and child where the adult follows the child’s lead in play and is neither passive or intrusive.
  - Delight
    - Words or expressions from the parent to the child expressing positive emotion.
  - Avoiding Frightening Behavior
    - Rough handling, menacing or threatening behavior toward the child.

ABC In-The-Moment Commenting

- Key component of the intervention.
- Provides immediate feedback to validate, teach, reinforce and support use of the four intervention targets.
- Comments are constructed to feel positive and rewarding to parents.
- Comments may include up to three components:
  - Specifically describe the behavior.
  - Identify the intervention target.
  - Indicate what outcome the behavior could lead to for the child.
- Examples:
  - “He handed you that toy and you reached right for it. That is following his lead. When you do that he learns he has an effect on the world.”
  - “She bumped her head and you asked her if she was ok and patted her back. What a good example of giving/showing nurturance when she needs it. That helps her learn that she can rely on you.”


ABC Implementation

- The KU implementation and evaluation study is currently in year 3 and is scheduled to end in June 2015.
- Implementation is taking place in four sites serving a 37 county area.

Anticipated outcomes of implementation project

- Neurobiologically validated screening tool to identify children at risk of toxic stress prior to emergence of social and emotional disturbances.
- Increase capacity for delivery of a biodevelopmental intervention, Attachment and Biobehavioral Catch-Up (ABC) with trained and certified ABC providers in multiple Early Head Start/Early Intervention regions.
- Replicate data showing improved outcomes for children and families receiving ABC.
- Increased cross-systems collaboration between early childhood and mental health providers.
Conclusions

- Toxic stress is a pervasive issue that is threatening to child social-emotional development.
- Children who are experiencing a high level of risk may not currently meet criteria for additional supportive services due to current screening tools and procedures that may be inadequate for the population or for toxic stress screening specifically.
- Therefore, improved screening procedures and access to interventions that account for neurobiological disruption as a result of environmental stressors are needed.
- Children should be identified and targeted for brief and effective intervention as a result of their exposure to stress and absence of protective factors before social-emotional and behavioral problems become apparent in order to better promote healthy development.

Discussion

QUESTIONS & COMMENTS

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References


