

Adverse childhood experiences(ACEs) impacts and interventions

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Talk Plan

- Briefing background information on Adverse Childhood Experiences(ACEs)
- Highlighting the findings of the major studies
- Summarizing psychopathology of ACEs
- Pointing Intervention and prevention of the advers effects ACEs
- Conclusions

Background

Adverse Childhood Experiences (ACEs)—a term coined by researchers Vincent Felitti, Robert Anda, and colleagues in their [seminal study](#) conducted from 1995 to 1997 in the USA for the Adverse Childhood Experiences survey well known as [CDC-Kaiser ACE study](#)

Background

Adverse Childhood Experiences, or ACEs, are potentially traumatic events that occur in **childhood** (0-17 years) such as **experiencing** violence, abuse, or neglect; witnessing violence in the home; and having a family member attempt or die by suicide

Background

ACEs, also included are **aspects of the child's environment** that can undermine their sense of safety, stability, and bonding such as growing up in a household with substance misuse, mental health problems, or instability due to parental separation or incarceration of a parent, sibling, or other member of the household.

Background

Definition of ACEs

‘experiences which require significant adaptation by the developing child in terms of psychological, social and neurodevelopmental systems, and which are outside of the normal expected environment’

Background

Original identified **NINE** ACEs are

1. Physical abuse
2. Sexual abuse
3. Emotional abuse
4. Mental illness of a household member
5. Problematic drinking or alcoholism of a household member
6. Illegal street or prescription drug use by a household member
7. Divorce or separation of a parent
8. Domestic violence towards a parent
9. Increased household members

Background

Since the term ACEs has been adopted, varying lists of adversities added with the original NINE

- Emotional neglect
- Physical neglect
- Economic hardship
- Homelessness
- Community violence
- Discrimination
- Historical trauma(cumulative emotional harm of an individual or generation caused by a traumatic experience or event)
- Bullying

Background

Though having apparent similarities, ACEs is **different** from

- **Childhood adversity**-is a broad term that refers to a wide range of circumstances or events that pose a serious threat to a child's physical or psychological well-being.

Here, all ACEs are childhood adversity

Background

Though having apparent similarities, ACEs is **different** from

- **Trauma**-is one possible outcome of exposure to adversity. Trauma occurs when a person perceives an event or set of circumstances as extremely frightening, harmful, or threatening—either emotionally, physically, or both.

Background

Though having apparent similarities, ACEs is **different** from

- **Toxic stress**-can occur when a child experiences adversity that is **extreme, long-lasting, and severe** (e.g., chronic neglect, domestic violence, severe economic hardship) without adequate support from a caregiving adult. Specifically, childhood adversities, including ACEs, can over-activate the child's stress response system. This **overactivation** is referred to as toxic stress and is the primary way in which adversity damages a child's development and well-being.

Background

Up to the date thousands of studies carried out on ACEs.

The leading four studies are:

- The Adverse Childhood Experiences (ACE) Study in USA 1998- Vincent Felitti & Colleagues
- CDC Study 2009 on ACEs in five states in USA
- Swedish Cohort Study 1913-Björkenstam & Colleagues
- British National Child Development Study(Findings from 1958 British Birth Cohort Study) 1913- Kelly- Irving & Colleagues

First ACEs Study

Adverse Childhood Experiences (ACE) Study (Fellitti et al 1998) or CDC-Kaiser ACE Study

- It is the first and one of the largest investigations of childhood abuse and neglect and household challenges and later-life health and well-being

First ACEs Study

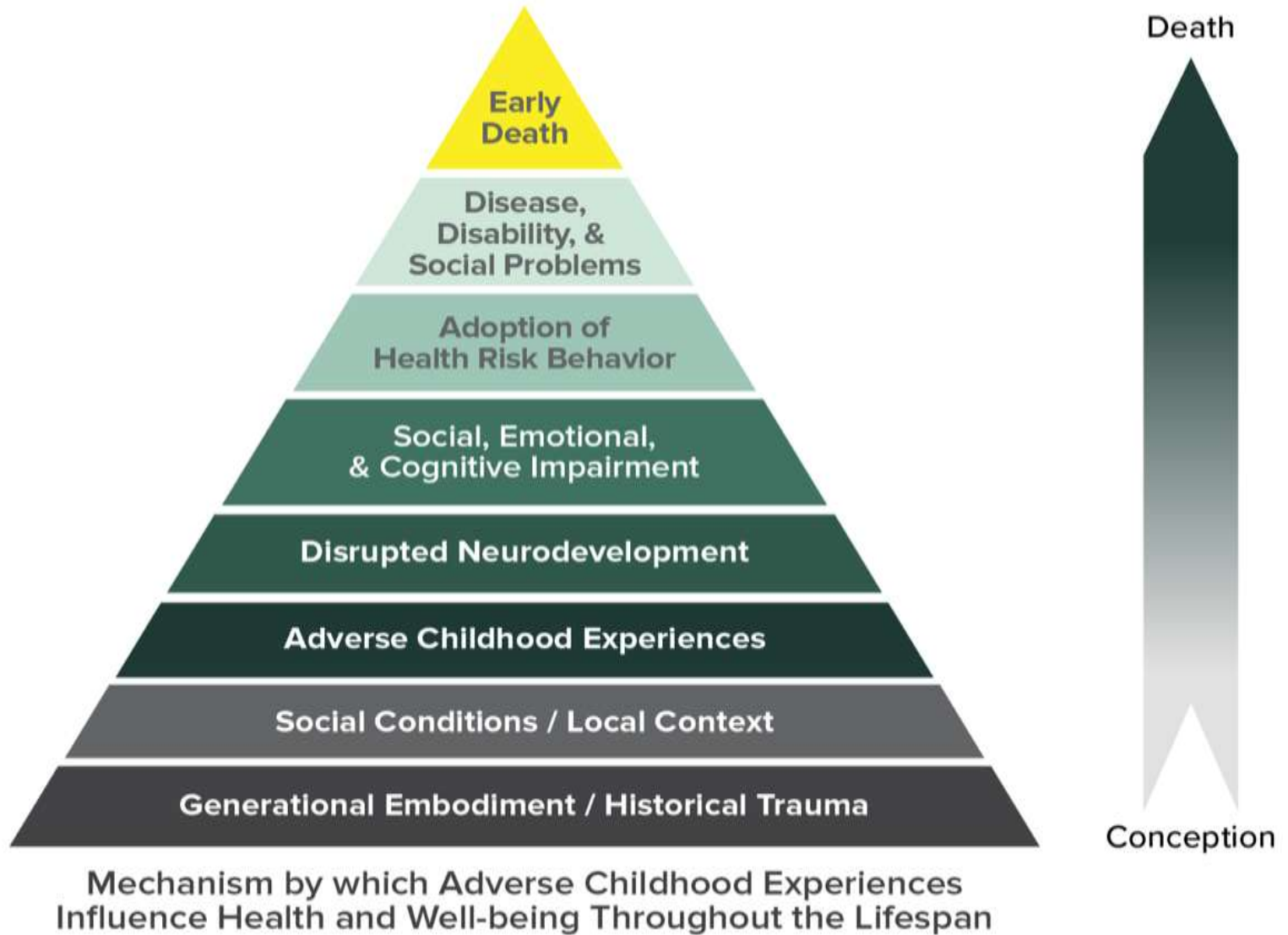
- The original ACE Study was conducted at Kaiser Permanente from 1995 to 1997 with two waves of data collection
- Over 17,000 Health Maintenance Organization members from Southern California receiving physical exams completed confidential surveys regarding their childhood experiences and current health status and behaviors

First ACEs Study

ACE Pyramid

- The ACE Pyramid represents the **conceptual framework** for the ACE Study
- The ACE Study has uncovered how ACEs are strongly related to development of risk factors for disease, and well-being throughout the life course

First ACEs Study



First ACEs Study

Instruments

- **Family Health History Questionnaire**
- **Health Appraisal Questionnaire**
used to collect information on child abuse and neglect, household challenges, and other socio-behavioral factors

AND

- **Comprehensive health status examinations**

First ACEs Study

How are ACEs measured?

- ACE score: Assigning a 'cumulative risk score' based on the number of adversities experienced by an individual
- Assessing links between higher ACE scores and poorer health

First ACEs Study

Major Findings

ACEs have been linked to

- risky health behaviors
- chronic health conditions
- low life potential
- early death

As the number of ACEs increases, so does the risk
for these outcomes

First ACEs Study

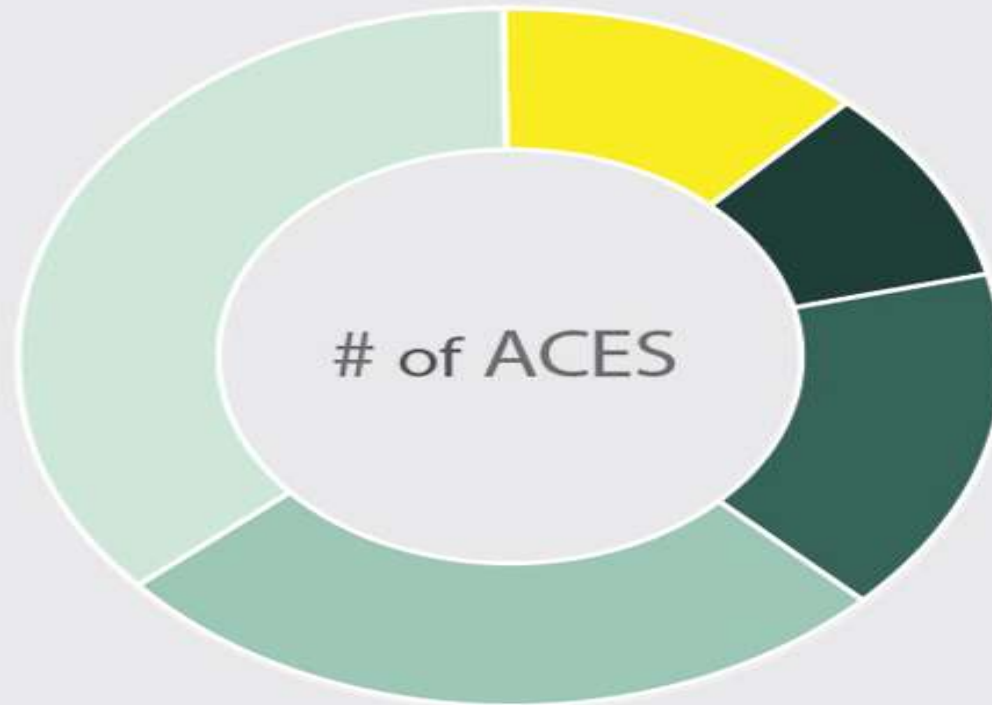
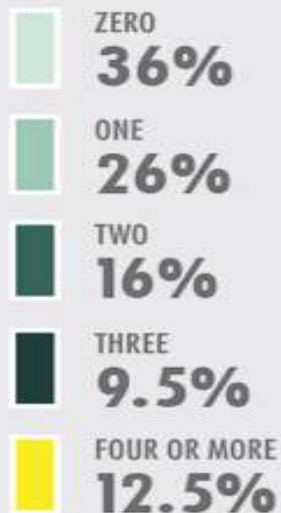
Major findings

ACEs often occur together. Almost 40% of the original sample reported two or more ACEs and 12.5% experienced four or more..

First ACEs Study

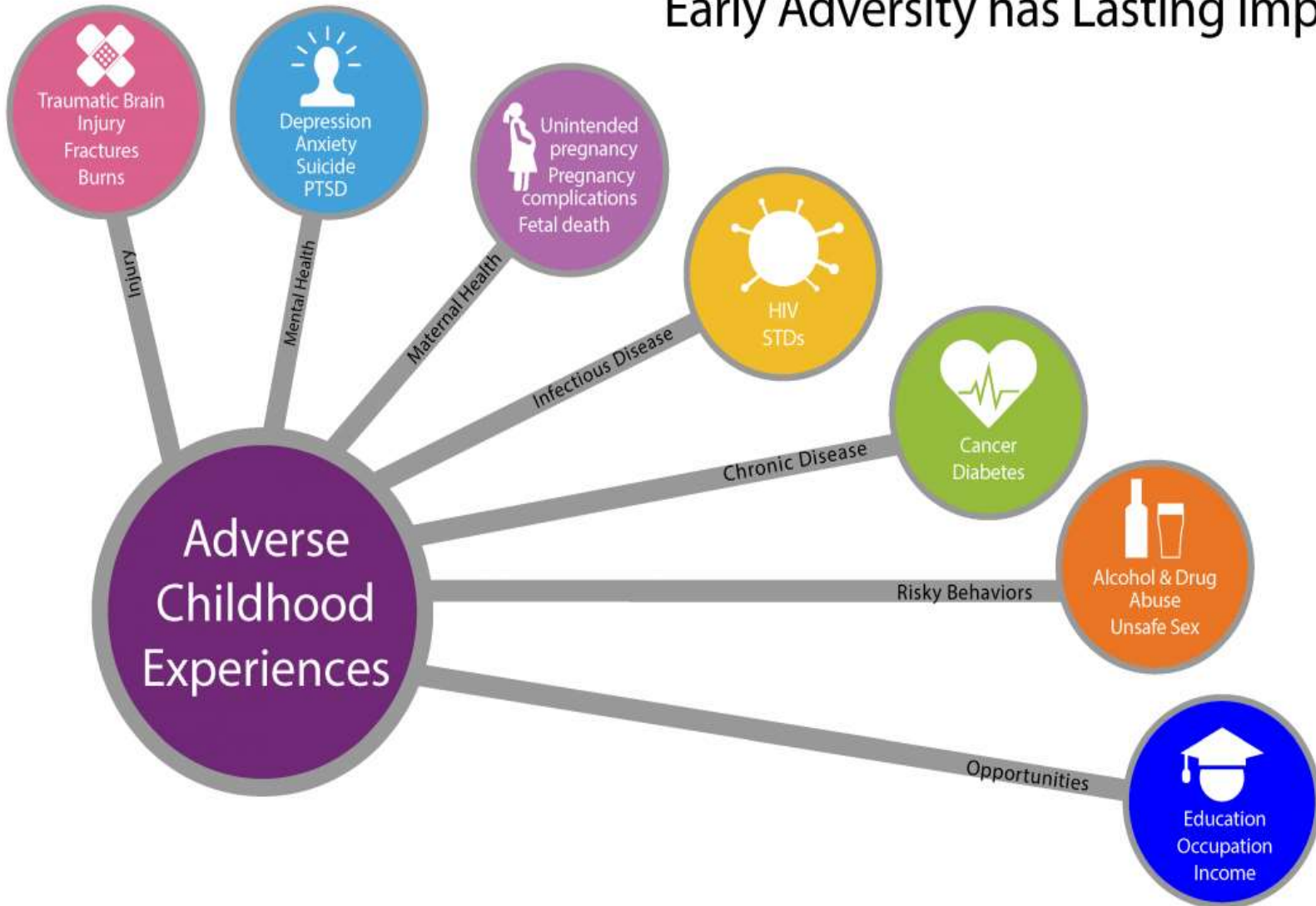
How Common are ACEs?

ACE Study



First ACEs Study

Early Adversity has Lasting Impacts



Subsequent Studies

- There have been numerous other studies which have found similar findings
- Both retrospective and prospective studies confirm the findings
- Some studies highlighted on psychopathology and pathophysiology of the effects of ACEs on Health
- There are studies on outcome of interventions

Subsequent Studies

Instruments to assess ACEs

- The questionnaires of original ACE study are not copyrighted, and used by so many researches
- BRFSS- Behavioral Risk factors Surveillance System questionnaire developed by CDC in 2011
- The ACE International Questionnaire (ACE-IQ) developed by WHO is intended to measure ACEs in all countries, and the association between them and risk behaviours in later life.

Subsequent Studies

Characteristics of ACEs

- Studies identified that it is not merely the increased number of ACEs rather nature, severity, chronicity, and shared genetic and environmental confounders—all have individual or cumulative effect in developing later physical and mental health problems

Impacts

- Overall, increased ACEs has immediate impact on children & adolescents and distant impact in adulthood
- The Impact of ACEs may be life long

Impacts

Immediate impact on children and adolescents

- ACEs is associated with problems across multiple domains of development
- ACEs also correlated with physical and mental problems

NOFT

Asthma

“Difficult” child with difficult temperament

Anxiety, phobia, stress reaction and attachment problem

Increased rate of self harm

Impacts

On physical Health

ACEs causes increased risk of

- Poor self-rated health-HTN, DMT2
- STDs
- Obesity
- IHD
- Cancer
- Chronic lung disease
- Immunological diseases
- Skeletal fractures
- Liver disease

Impacts

On mental Health

More exposure to ACEs cause increased risk of

- Alcoholism, smoking and drug abuse
- Depression and suicidal attempt
- Anxiety disorders, Stress disorders
- Reduced strength of relationship
- Antisocial PD, BPD

Impacts

- There is observed correlation between ACEs and unfavourable outcome of both physical and mental disorders
- There is also observed correlation between specific types of ACEs and specific health conditions
- Poorer academic & professional achievement with social impairment

Impacts

- However, the presence of ACEs does not always mean that a child will experience poor outcome
- Children's positive experiences or protective factors can prevent children from experiencing adversity and can protect against many of the negative health and life outcomes even after adversity has occurred
- Further, present ACEs measurement approach by calculating ACE score has some limitations and debatable

Pathophysiology & Psychopathology

- ACEs effect each child differently, depending on his or her individual, family, and environmental risk and protective factors
- Effects depend upon **biological makeup** (e.g., genetic vulnerabilities, prior experiences that have damaged the stress response system or limited healthy gene expression) and the **characteristics of the adverse events or conditions** (e.g., intensity, duration, whether a caregiver caused the child harm)

Pathophysiology & Psychopathology

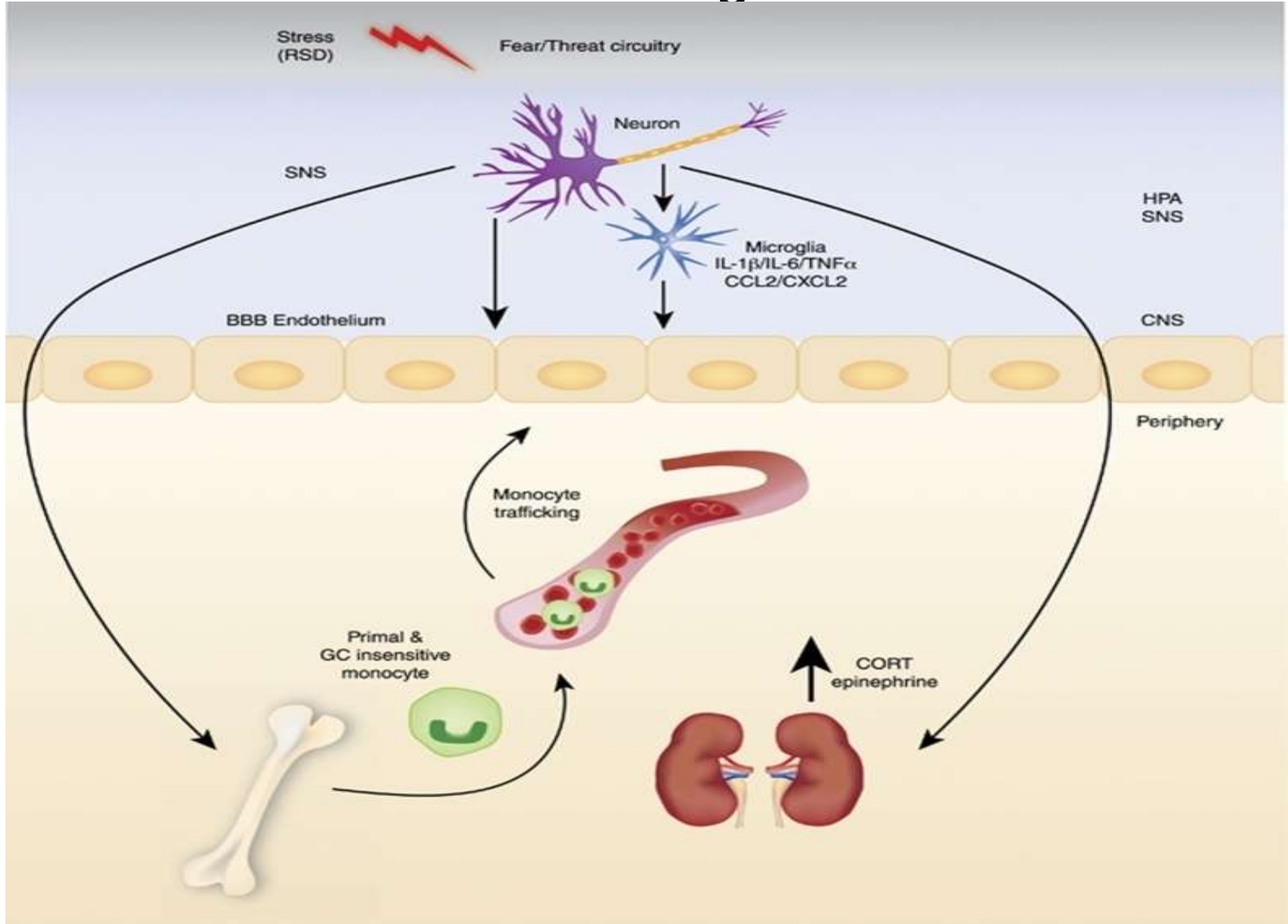
- **G X E** and **E X G** is the basic proposition evident by the huge number of studies
- Findings related to epigenetic changes, transgenerational genetic transmission and developing risk and resiliency are the most convincing evident

Pathophysiology & Psychopathology

- **Immunosuppression and inflammation** are other propositions proved by the several studies
- Best example of this proposition is “**inflamed depression**”

Stress, inflammation and depression

Neuroimmunological model



Pathophysiology & Psychopathology

- Overall, the process is complex ,extensive, deeply rooted and certainly interactive
- Increased level of understanding in this field opens early identification the different mode of intervention

Interventions

- Early identification of ACEs and children at risk
- Intervention of specific health problems
- Parental education
- Primary intervention through domiciliary services
- Changing the milieu of the institutional care
- Prevention programs

Preventions

- The increased public understanding that ACEs can cause trauma and toxic stress—and, in turn, have a lasting impact on children’s physical and mental health—presents an important opportunity to turn this awareness into action
- Caregivers and other practitioners can learn about and implement [trauma-informed care](#) in child and family service systems

Preventions


- Addressing the conditions that put children and families at risk of ACEs so that ACEs can be prevented before they happen.
- strategies to assure safe, stable, nurturing relationships and
- promoting lifelong health and well-being that need to be considered as **Essentials for Childhood** for creating environments for all children

Prevention

US Centre for Disease Control and Prevention CDC has developed

- Preventive strategy for ACEs
- A resource, [Preventing Adverse Childhood Experiences \(ACEs\): Leveraging the Best Available Evidence pdf icon](#)[4 MB, 40 Pages, [508](#)] to help states and communities leverage the best available evidence to prevent ACEs from happening in the first place as well as lessen harms when ACEs do occur.
- It features six strategies drawn from the CDC Technical Packages to Prevent Violence.

Strategies for Preventing ACEs

 Preventing ACEs	
Strategy	Approach
Strengthen economic supports to families	<ul style="list-style-type: none"> • Strengthening household financial security • Family-friendly work policies
Promote social norms that protect against violence and adversity	<ul style="list-style-type: none"> • Public education campaigns • Legislative approaches to reduce corporal punishment • Bystander approaches • Men and boys as allies in prevention
Ensure a strong start for children	<ul style="list-style-type: none"> • Early childhood home visitation • High-quality child care • Preschool enrichment with family engagement
Teach skills	<ul style="list-style-type: none"> • Social-emotional learning • Safe dating and healthy relationship skill programs • Parenting skills and family relationship approaches
Connect youth to caring adults and activities	<ul style="list-style-type: none"> • Mentoring programs • After-school programs
Intervene to lessen immediate and long-term harms	<ul style="list-style-type: none"> • Enhanced primary care • Victim-centered services • Treatment to lessen the harms of ACEs • Treatment to prevent problem behavior and future involvement in violence • Family-centered treatment for substance use disorders

Conclusions

- All unhappy childhood are unhappy in their own way
- ACEs are undoubtedly have lifelong impact on both physical and mental health
- Child abuse and family violence are the two ACEs that have major adverse impact
- Understanding of psychopathology of the ACEs effect over health are increasingly complex but helps in developing more effective intervention and prevention strategies

Conclusions

- We need to identify vulnerable children for early intervention and prevention
- Efforts are needed to increase access to and quality mental healthcare among children and adults affected by ACEs
- Adopting and implementing appropriate prevention strategy is an utmost need
- Further explanations of the issues related to ACEs warrant subsequent investigations



Thank you all