Responding to ACEs With HOPE: Health Outcomes From Positive Experiences

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Abstract

This article introduces a framework called "HOPE: Health Outcomes From Positive Experiences." The HOPE framework focuses on the need to actively promote positive childhood experiences that contribute to healthy development and well-being, as well as prevent or mitigate the effect of adverse childhood experiences and other negative environmental influences. Key positive childhood experiences fall within 4 broad categories: being in nurturing, supportive relationships; living, developing, playing, and learning in safe, stable, protective, and equitable environments; having opportunities for constructive social engagement and connectedness; and learning social and emotional competencies. The HOPE framework grows out of and complements prior holistic approaches to child health care.

Keywords: adverse childhood experiences; child development; resilience; toxic stress

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Children's health and development are a function of the complex interaction of biological and environmental influences. The environments and experiences—both positive and negative—that children are exposed to clearly influence developmental and health outcomes across the life span.[1] The lifelong damage to health resulting from childhood adversity has been well established; however, there are supportive experiences that can buffer children from the effects of adversity and promote healthy development. Thus, while young children are at the greatest risk of immediate and enduring harm from adverse experiences, early childhood is also a period that offers the greatest opportunity for preventing or mitigating harm and setting the course for healthy development.[2] An examination of the impact of childhood adversity and a framework for promoting healthy outcomes from positive experiences follow.

Childhood Adversity

The relationship between childhood adversity and later adult health and behavior was conclusively demonstrated with the 1998 publication of results from the Adverse Childhood Experiences Study (ACES). ACES established the connection between the experiences of abuse, neglect, and household dysfunction during childhood and the subsequent occurrence of chronic illnesses, mental health problems, and health-risk behaviors in adulthood.[3–6] This relationship appears to be mediated by changes in brain structure and function. The Center on the Developing Child at Harvard University has assembled current research on the biology of human neurodevelopment, and described a potential mechanism for the ACES results. Researchers there coined the terms "positive, tolerable, and toxic stress" to classify, concretize, and more effectively communicate scientific findings about the effect of differential stress responses to mild, moderate, and traumatic events on the anatomy and physiology of the young developing brain.[7]

In this taxonomy, positive, tolerable, and toxic stress responses are differentiated by the frequency, intensity, and duration of the stressful event, as well as the availability of a caring, supportive adult.[5] Toxic stress may be precipitated by adverse childhood experiences (ACEs) and exposure to other intensely negative events and conditions—without sufficiently supportive relationships and environments—which in turn cause frequent, intense, and sustained activation of the body's stress response system. In this report, we focus on those experiences that may protect the child from or mitigate the impact of adverse experiences.

The extensive research on the biology of stress indicates that excessive or prolonged release of stress hormones can disrupt early brain development, as well as the functioning of other organ systems, and cause damaging effects on learning, behavior, and health throughout the life course.[2,5,7–9] The developing brain is particularly sensitive to toxic stress during periods of rapid brain growth in infancy, early childhood, and adolescence[5,9]; babies are affected by stress even in utero.[10] When pregnant women are depressed, they produce higher levels of stress hormones which can negatively affect the developing fetus, increase the risk for preterm delivery and low birthweight, as well as impaired cognitive, behavioral, and

motor development in infancy.[10] Together, the epidemiology of the study of ACEs and the neuroscience and behavioral research about the biology of stress, have contributed to a policy environment that has put a new lens on the importance of investing in early childhood for both long-term health[4–6] and economic reasons.[11–13]

These studies have increased our appreciation of the overwhelming importance of childhood experiences on brain growth and lifelong health. ACEs and toxic stress, however, represent only one end of the continuum of childhood experiences that influence the trajectory of early brain development and subsequent learning, behavior, and health.

Health Outcomes From Positive Experiences (HOPE)

The HOPE framework grows out of and complements prior holistic approaches to child health care. These approaches conceive the complex interplay between biological, genetic, social, and environmental conditions as determinants of child development, health trajectories, and health vulnerabilities.[1,14] Holistic approaches include the effects of each child's living conditions, interpersonal relationships, and learning environments, sometimes referred to collectively as the social determinants of health.[1]

Following this holistic approach, the HOPE framework focusses on the need to actively promote positive childhood experiences that contribute to healthy development and well-being, as well as preventing or mitigating the effect of ACEs and other negative social determinants. A sole focus on either adverse or positive childhood experiences is not sufficient to achieve improved learning, behavior, and physical and mental health outcomes.

The research-informed ideas that are the foundation of the theoretical articulation of the HOPE framework are described in the next section of this article, including the definition of child health used in the HOPE framework, the child health outcomes of focus, an overview of the positive childhood experiences, and how the HOPE framework supports current public health efforts.

Defining Child Health in the HOPE Framework

The HOPE framework adheres to the broad definition of children's health first proposed by the National Research Council and Institute of Medicine, and subsequently widely adopted:

> Children's health is the extent to which individual children or groups of children are able or enabled to (a) develop and realize their potential, (b) satisfy their needs, and (c) develop the capacities that allow them to interact successfully with their biological, physical, and social environments.[9]

This definition describes child health as not simply an end unto itself but as a pathway to overall well-being that can positively influence the course of a child's life. In addition, this definition acknowledges the influence of biological, behavioral, social, and physical environments on health, functioning, and quality-of-life outcomes; many factors within these environments are inextricably tied to issues of health equity.[9] For example, factors in the physical environment that inhibit child health, include: food insecurity[15]; substandard housing conditions[16–19]; injuries caused by consumer products[20]; environmental toxins such as air pollution, water pollution, tobacco smoke, lead, and pesticides[21,22]; and lack of access to medical and dental health care.[23]

The HOPE Framework

The HOPE framework asserts that improving the lives of all children, particularly those exposed to experiences or conditions that create toxic stress, requires intentional, informed efforts that reduce adversity and promote positive experiences. The focus of HOPE is on the promotion of positive childhood experiences that create a strong foundation for learning, productive behavior, and physical and mental health. Implicitly, this suggests that there also must be a focus on strengthening the capabilities and resources of parents and other significant adults in children's lives in order to promote young children's healthy development. In this discussion of the HOPE framework, "parent" refers to an adult or adolescent who has responsibility for rearing a child, including biological parents, grandparents, other relatives, or nonbiological caregivers.

Guiding Principles

Three guiding principles are the foundation for understanding and implementing the HOPE framework:

1. Positive and negative factors that impact child health exist in all domains of the social ecology. Thus, the interplay among individual, relational, community, and societal factors must be addressed in order to achieve optimal child health outcomes.
2. Child and parent health and well-being are inextricably linked. Thus, positive experiences must promote child health, parent health, and a healthy parent–child relationship.
3. Child health incorporates physical, cognitive, social, and emotional outcomes.

Child Health Outcomes

The HOPE framework includes a set of measurable outcomes that reflect optimal child health. These child health outcomes were identified from an examination of several evidence-based programs and promising initiatives designed to improve the lives of children and their families. Although the child health outcomes are linked to a specific developmental domain—physical, cognitive, social, or emotional—they are interrelated across domains.

For example, character traits such as empathy and honesty (emotional domain) influence one's ability to successfully interact with others (social domain), and both contribute to a strong foundation for a child's emerging

learning and problem-solving abilities (cognitive domain).[24] Whether these competencies develop, however, depends on the nature of early experiences that influence the trajectory of the developing brain toward a strong or fragile foundation (physical domain).[2,5,24] Examples of specific outcomes related to these themes are listed in Table 1.

Overview of Positive Childhood Experiences

The conventional approach to addressing toxic stress involves minimizing risks and the effects of adverse experiences on the child. The HOPE framework seeks to expand the conventional approach by elevating the importance of maximizing positive experiences for children exposed to experiences or conditions that create toxic stress. The research-informed positive childhood experiences are conceived as essential, interrelated experiences that engage the child, the parent, and the parent-child relationship in order to achieve the designated child health outcomes. The positive childhood experiences are organized in 4 broad categories:

- Being in nurturing, supportive relationships.
- Living, developing, playing, and learning in safe, stable, protective, and equitable environments.
- Having opportunities for constructive social engagement and to develop a sense of connectedness.
- Learning social and emotional competencies.

The broad categories and examples of respective positive childhood experiences are summarized in Table 2.

Being in Nurturing, Supportive Relationships

Developing brains need attuned caregivers who interact with them in a warm, affectionate, responsive, and nurturing manner.[24–26] Such care gives rise to the development of a secure attachment between the child and the adult.[27] In addition, parents' high-quality, constructive, and supportive relationships help buffer them from stressors and support nurturing parenting behaviors that promote secure attachments in young children. Early, secure attachments, in turn, contribute to the growth of a broad range of competencies in childhood and later in life, such as a comfortable sense of oneself, positive social skills, successful relationships, and a love of learning.[24,27]

Children also need parents and adults outside of their family who care about them; encourage them; promote high expectations; set developmentally appropriate limits and rules; and engender feelings of trust, belonging, and a sense that they matter. Having healthy, sustained, supportive relationships is associated with a number of child well-being outcomes such as positive mood, self-regulation, and increased likelihood that children will thrive and become productive adults.[24] Also, having healthy relationships is protective against an array of health jeopardizing behaviors.[24] Close, positive peer relationships are important for healthy development and well-being during childhood and adolescence, as well. Positive peer relationships have implications for children's social competence and positive identity and emotional development.[27,28]

Living, Developing, Playing, and Learning in Safe, Stable, Protective, and Equitable Environments

All children should be able to live, grow up, play, and learn in safe, stable, protective, and equitable environments; such environments can be exceedingly beneficial for children's physical, emotional, social, cognitive, brain, and behavioral health and development with benefits that can endure across the life span.[29] This encompasses multiple forms of safety, security, and predictability that are integral to the health and well-being of children and their families, such as safe and stable housing, adequate nutrition and sufficient sleep, high-quality learning opportunities,

Table 1. Child Health Outcomes of Focus in the HOPE Framework

Developmental Domain	Child Health Outcomes
Physical	Basic physiological needs met.
	Immunity to common childhood diseases.
	Healthy weight for height and developmental milestones met.
	Adequate physical activity.
	Good physical and dental health.
Cognitive	Vocabulary and language development.
	Early literacy and numeracy.
	Problem-solving skills.
	Age-appropriate general knowledge.
	Positive ideas about self.
Social	Secure attachment with a trusting adult.
	Ability to form and sustain healthy relationships.
	Constructive engagement in social institutions and environments.
	Seeking help when needed.
	Social cognition (eg, ability to read nonverbal social cues).
Emotional	Positive feelings about self.
	Ability to display cognitive, behavioral, emotional control.
	Executive function skills.
	Character strengths.
	Comfortable personal, gender, and racial or cultural identity.
	Managing stress and functioning well when faced with stressors, challenges, or adversity.

Table 2. Positive Childhood Experiences in HOPE Framework

Category of Positive Experiences	Examples of Key Positive Childhood Experiences
Being in nurturing, supportive relationships	Having: Secure attachments. Warm, responsive, sustained relationships. A physically and mentally healthy parent. A parent who can provide supportive care given their unique physical characteristics and circumstances. Trusting relationships with peers and other adults.
Living, developing, playing, and learning in safe, stable, protective, and equitable environments	Having: A safe and stable home. Adequate nutrition and sufficient sleep. High-quality learning opportunities. Opportunities for play and physical activity. Access to high-quality medical and dental care.
Having opportunities for constructive social engagement and to develop a sense of connectedness	Experiencing: Involvement in social institutions and environments. Fun and joy in activities and with others. Success and accomplishment. Awareness of one's cultural customs and traditions. A sense of belonging and personal value.
Learning social and emotional competencies	Learning: Behavioral, emotional, and cognitive self-regulation. Executive function skills. Positive character traits. Self-awareness and social cognition. Functional, productive responses to challenges.

access to high-quality medical and dental care, and opportunities to play and engage in physical activity.[23,29–38]

Having Opportunities for Constructive Social Engagement and to Develop a Sense of Connectedness

Children need to be constructively engaged in social institutions and environments (eg, schools, religious communities, recreational facilities) that are safe, stable, and equitable. Social institutions provide support for children's intellectual, social, emotional, moral, spiritual, and physical development. Providing opportunities for constructive social engagement is critically important but alone is not sufficient. What is essential is that these experiences must create a sense of connectedness; that is, a protective relationship between children and their social contexts that promotes a sense of attachment, belonging, personal value, and positive regard, and decreases vulnerability to negative outcomes.[39,40] When children are able to forge a sense of connectedness, they feel loved and valued; have people who care about them as individuals now and who care what happens to them in the future; feel secure and confident; and have an optimistic view of the future.

Learning Social and Emotional Competencies

The primary developmental task of early childhood is acquiring social and emotional competencies because these skills impact physical growth, language development, and cognitive skills, and lay the foundation for later development.[24,41–43] Social and emotional competencies are those skills that enable children to identify, understand, and express their own feelings in socially and culturally appropriate ways; manage challenging experiences and adversity in a constructive manner; display effortful control and coordination of thoughts, emotions, and behaviors; accurately comprehend emotional states in others; form close and secure adult and peer relationships; and explore the environment and learn.[41] Social and emotional competencies cultivate self-awareness and confidence, and lay the foundation for learning and problem solving, identity development, communication skills, and effective interpersonal relationships.

HOPE in Context of Efforts to Optimize Healthy Child Development

Knowledge that children's brains develop in response to a wide spectrum of experiences, including both adverse experiences and positive ones, has important practical implications. The promotion of family stability underlays current clinical, educational, and public health efforts aimed at promoting child development and reducing child abuse and neglect. Community level initiatives that promote positive experiences for children necessarily involve the creation of environments and circumstances that support their parents and families. The Figure displays the standard biopsychosocial model[44] to illustrate the relationship between HOPE and child maltreatment and health promotion efforts.

The child's direct experiences (ACEs and HOPE) mediate brain growth and contribute to lifelong health status.

Family-centered models occupy the next ring, illustrated here with the Strengthening Families approach[45] and home visiting programs. The Strengthening Families approach, now adopted by a wide range of service providers from early childhood educators to child welfare officials, is

Figure. *HOPE shown in context of child abuse prevention strategies using Bronfenbrenner[44] model of ecology of human development.*

based on improving families' capabilities to provide positive experiences for young children. Improved family capabilities result from building 5 protective factors that studies show are related to a decreased likelihood of child abuse and neglect, as well as to the promotion of family strengths and optimal child development, specifically: parental resilience, social connections, concrete support in times of need, knowledge of parenting and child development, and social-emotional competence of children.[45]

Community-level approaches link families with services. For example, Help Me Grow offers a centralized referral and case management system for children with developmental delays or other special health care needs[46]; SEEK (Safe Environment for Every Kid) connects families in primary care with specific community supports[47]; and DULCE (Developmental Understanding & Legal Collaboration for Everyone) focuses community support on infants and their families.[48] Community-based family resource centers bring these connections directly into family neighborhoods.[49]

Government policies and cultural norms inform the overall environmental milieu for communities, families, and children. The Essentials for Childhood initiative[50,51] developed and sponsored by the Centers for Disease Control and Prevention, focuses on those policies that support the formation of safe, stable, nurturing relationships and environments. One key component of the program is the statewide promotion of positive social norms that promote the support of families with young children.

In summary, early childhood experiences have profound and long-lasting effects on physical and mental health. Implementation of a broad child-focused public health agenda may lead to significant improvements in common measures of population health. As described above, we are beginning to see new public health efforts that organize community resources to promote physical and policy environments that support healthy development. These efforts will be most effective when they both reduce the likelihood of risk and increase the likelihood of positive childhood experiences.

PRACTICAL IMPLICATIONS AND FUTURE DIRECTIONS

This article has provided a rationale for and foundation of the HOPE framework, including its basic theoretical constructs. Although further research is needed, we believe that pediatric practices have significant opportunities to promote the underlying concepts of the HOPE approach. This positive, asset-based orientation will add to existing interventions aimed at reducing trauma and stress in childhood.[52] For example, clinicians can:

- Promote nurturing, supportive relationships by addressing parents' mental health needs; encouraging active engagement with their child through play, reading aloud, and frequent conversation; and helping families learn to receive and share parenting information with others in their community.
- Support safe, stable, protective, and equitable environments by linking children and families with available support for basic human needs, as well as educational programs that provide learning experiences that promote healthy development.
- Support opportunities for constructive engagement by encouraging participation in neighborhood-based or faith-based extra-curricular or volunteer experiences. Support the development of social and emotional competence through discussions with parents about promoting resilience in children or providing referrals for trauma-informed care.

The next phase of the HOPE research agenda will include an investigation of opportunities and challenges within the community and societal domains of the social ecology to advance the HOPE framework. Current work in progress involves 1) expanding and strengthening the research base of the HOPE framework, and 2) identifying psychometrically sound measures that could be used to assess the child health and wellbeing outcomes. Questions that will guide this investigation include:

1. What programs, initiatives, or interventions promote positive childhood experiences as an intentional strategy to achieve child health outcomes, rather than as an artifact of strategies to reduce risk factors?
   a. What activities are employed to intentionally promote positive childhood experiences?
   b. What tools are used to support the promotion of positive childhood experiences?
   c. What process and/or outcomes data are available regarding programmatic promotion of positive childhood experiences?
2. How well do program administrators and staff understand the effects of adverse and positive childhood experiences on child development?

3. How well do program administrators and staff understand the essential constructs of positive childhood experiences (eg, attachment, self-regulation)?
4. What laws, policies, regulations, or local ordinances serve to support, or inadvertently impede, optimal child and family health and well-being?

In addition, we emphasize the importance of forging a national research and policy agenda that focuses resources on building new evidence about how child health outcomes emerge from positive experiences, rather than focusing primarily on reducing the impact of negative experiences. "Treatment is not just fixing what is broken; it is nurturing what is best within ourselves."[53]

CONCLUSION

HOPE is a conceptual framework for achieving good physical, cognitive, social, and emotional child health outcomes from positive experiences. The HOPE framework emphasizes that improving the lives of children exposed to experiences or conditions that create toxic stress requires expanding the conventional approach to responding to ACEs by elevating the importance of maximizing positive experiences for children, in addition to minimizing risks and the effects of negative experiences on the child.

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