Title
Fulfilling the Promise of Adolescence: Realizing Opportunity for All Youth

Journal
Journal of Adolescent Health, 65(4)

ISSN
1054-139X

Authors
Bonnie, Richard J
Backes, Emily P
Alegria, Margarita
et al.

Publication Date
2019-10-01

DOI
10.1016/j.jadohealth.2019.07.018

Peer reviewed

Journal of Adolescent Health 65 (2019) 440–442

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Commentary

Fulfilling the Promise of Adolescence: Realizing Opportunity for All Youth

Richard J. Bonnie, LL.B. [a], Emily P. Backes, M.A., J.D. [b], Margarita Alegria, Ph.D. [c], Angela Diaz, M.D., M.P.H., Ph.D. [d,e], and Claire D. Brindis, Ph.D. [f,*]

[a] *University of Virginia School of Law, Charlottesville, Virginia*
[b] *National Academies of Sciences, Engineering, and Medicine, Washington, DC*
[c] *Massachusetts General Hospital, Boston, Massachusetts*
[d] *Department of Pediatrics, Icahn School of Medicine at Mt. Sinai, New York, New York*
[e] *Department of Environmental Medicine and Public Health, Icahn School of Medicine at Mt. Sinai, New York, New York*
[f] *Philip R. Lee Institute for Health Policy Studies, University of California, San Francisco, San Francisco, California*

In the spring of 2018, the National Academies of Sciences, Engineering, and Medicine (the National Academies) appointed and charged the *Committee on the Neurobiological and Socio-Behavioral Science of Adolescent Development and Its Applications* (Committee) to examine the neurobiological and socio-behavioral science of adolescent development and to address how this knowledge can be most fruitfully applied so that adolescent well-being, resilience, and development are promoted for all adolescents. The Committee was also asked to make evidence-driven recommendations to key stakeholders serving adolescents and their families, including government agencies and community institutions; federal, state and local policy makers who guide the allocation of resources; and the research community. The study builds on the foundation laid by the first study in the National Academy of Medicine's Culture of Health study series, *Communities in Action: Pathways to Health Equity* [1], as well as a number of previous adolescent health reports [2–4].

The new report, *The Promise of Adolescence: Realizing Opportunity for All Youth*, released in May 2019, is particularly timely. Today's youth (ages 10–25 years), representing approximately 25% of the U.S. population, are more culturally and ethnically diverse than ever before [5]. Their collective level of engagement in the cultural and political life of the society is facilitated and accentuated by the ongoing revolution in digital communications and social media. Unfortunately, however, inequalities in income, access to resources, and opportunity among youth continue to increase, with stark differences in poverty by race, ethnic group, and geography.

The report highlights two overarching messages. The first is that adolescence is a period of extraordinary opportunity for learning and exploration and for laying a strong foundation for a successful life. The Committee invites our fellow Americans to reframe a widely shared narrative about adolescence as a period of vulnerability and risk to one that highlights curiosity, opportunity, and the unleashing of potential as adolescents begin their journey into adulthood. The second message is that our nation needs to commit itself to a sustained plan for reversing the worsening inequities of childhood disadvantage, thereby enabling all adolescents to flourish.

Advances in Scientific Understanding

Over the past two decades, advances in neurobiology and neuroimagining have highlighted the dramatic extent of brain maturation during adolescence [6]. Although humans retain a baseline level of neuroplasticity required for experience-based learning throughout their lives, adolescent brain circuitry is exceedingly adaptable and "experience dependent," which means that adolescents are specially primed to learn from their particular circumstances and environments during this period [7]. The heightened neurosensitivity and normative changes in neural and hormonal development intersect with rapid changes in adolescents' social, technological, and cultural environment. The nature of brain development (in brain structures, functions, and connectivity) and the developmental plasticity present remarkable opportunities for learning and growth, as well as the amelioration of the harmful effects of childhood exposures to stressful and unsafe environments.

The emerging science of epigenetics, including the mechanisms through which the brain, body, and environment

Conflicts of interest: The authors have no conflicts of interest to disclose.
Disclaimer: The opinions expressed in this commentary are those of the authors and do not necessarily reflect the positions of the *Journal of Adolescent Health* nor the Society for Adolescent Health and Medicine.

* Address correspondence to: Claire D. Brindis, Ph.D., Philip R. Lee Institute for Health Policy Studies, University of California, San Francisco, 3333 California St. Suite 265, San Francisco, CA 94118.
E-mail address: Claire.Brindis@ucsf.edu (C.D. Brindis).

1054-139X/
https://doi.org/10.1016/j.jadohealth.2019.07.018

interact to shape life-course trajectories, is particularly instructive as we rethink the ways that societal institutions can most effectively harness the significant developmental changes that occur during adolescence. Heightened sensitivity and responsiveness to environmental influences also suggests that adolescence is a period during which interventions—at the individual, system, and societal levels—may be effectively used to redirect and remediate maladaptation in brain structure and behavior from earlier developmental periods, thereby achieving resilience in the face of adversity. Adolescence, therefore, holds great promise to realize positive trajectories for all youth and for the collective benefit of an aging society in the 21st century.

Reframing Adolescence

Unfortunately, these exciting advances in science have not yet penetrated the everyday understanding of the general public and policymakers, including many who serve young people [8]. People continue to think of adolescence primarily as a time of vulnerability and risk, a narrative that may have been reinforced by oversimplified headlines about a "mismatch" in the adolescent brain between intensifying desires and emotions (akin to "stepping on the gas") and a more slowly developing capacity for self-regulation ("stepping on the brakes"). This preoccupation with vulnerability and risk not only ignores the benefits of curiosity and exploration but also overlooks society's responsibility to provide a safe environment where young people can experiment and protect and support them as they venture beyond the home into the social world. As an example, it draws attention to "risky drivers" rather than the social policies that allow ready access to driver's licenses and alcohol. A preoccupation with risk also leads to a selective valuing of policies and practices that aim to shield adolescents from harm accompanied by relative disregard for those that create incentives for discovery and innovation. Although some youth-serving policies and programs have embraced developmentally informed changes, the wide-scale changes needed to support and bolster adolescents' development, particularly those living in poverty and marginalized, have not yet fully materialized. How should society take advantage of this critical developmental opportunity in a world characterized by substantial and worsening disparities in resources, safety, social supports, and other necessary conditions for the well-being for children and adolescents?

Several key themes emerged throughout the study, including (1) the potential value of incorporating new neurobiological findings in the activities of systems serving adolescents; (2) the interplay of neurodevelopmental interactions with the social distribution of risks and resources; (3) the important insights produced by an emphasis on positive youth development and a life-course framework, and (4) the compelling need for a comprehensive, societal response to the negative impacts of social inequities. The familial, social, and economic environment in which neurological development occurs contributes to the way young people perceive themselves, their place in the world, and the possibilities for their futures. These life experiences shape individuals' developmental trajectories by "getting under the skin." For example, adolescents living in poverty often experience heighted levels of stress, which can lead to not only short-term changes in observable behavior but also long-lasting changes in brain structure and function and in connectivity within the brain.

Rectifying Inequity

Our nation must face up to a painful truth—the promise of adolescence is now unrealized for many of our nation's adolescents due to deeply rooted structural inequalities that underpin well-documented disparities in developmental outcomes. These structural inequalities include substantial differences in family resources, in the safety net and support of neighborhoods, and the occurrence of racial and ethnic bias [9]. Economic inequality poses unique challenges and strongly influences the opportunities available to adolescents from lower socioeconomic backgrounds. Greater inequality often accompanies more severe residential segregation, such that young people from families with lower incomes and less wealth, and often families from nondominant racial groups, live in communities that are increasingly isolated and separated from economic and educational opportunities [10,11].

The salience of environmental influences in shaping development during adolescence, together with the critical importance of adolescence, makes a powerful case for remedial action. Coupling a life-course perspective with developmental neuroscience reaffirms the importance of childhood and adolescence in shaping developmental trajectories. It also allows for visualizing adolescence as a "second chance" opportunity that can be used to shape a positive trajectory even among children who bear the scars of childhood adversity, including toxic stress, child maltreatment, food insecurity, and limited access to high-quality education. Visualizing adolescence as building upon (or repairing) childhood experience and setting the stage for positive adult development anchors the case for the Committee's recommended investments.

Key Committee recommendations in the area of education include rectifying disparities in resources for least-advantaged schools and students, as well as teaching practical knowledge and nonacademic skills, such as decision-making, adaptability, and psychosocial skills. In the area of health, key recommendations include the need to improve access to comprehensive, integrated, coordinated health services for adolescents, as well as strengthening the financing of health-care services for adolescents, including insurance coverage for uninsured or underinsured populations. In the area of child welfare, recommendations include providing services to adolescents and their families in the child welfare system that are developmentally informed at the individual, program, and system levels, increasing the number of states that provide services and support for adolescents aging out of foster care, and facilitating greater collaboration between the child welfare, juvenile justice, education, and health systems. Finally, justice system recommendations include ensuring that youth maintain supportive adult relationships while involved in the justice system, that they have adequate representation by counsel, that their health and educational needs are met, and that aggressive efforts are made to reduce racial, ethnic, and other disparities in treatment.

An enlightened national child policy does not end with elementary education and school lunch programs. It is in the nation's collective interest to stake out an unprecedented investment in adolescent well-being by providing intensive supports for families, secondary schools, neighborhoods, and local community agencies that bear responsibility every day for shaping, monitoring, and supporting adolescents' growth and development. Adequately funded health, education, child welfare, and justice systems must work together to implement

evidence-informed policies and practices that enable all adolescents to flourish (p. 14) [9]. Developmental science can guide us in what to do, but only a sustained political commitment can enable us to do it.

Acknowledgments

The authors acknowledge the contributions of the members and staff of the National Academies of Sciences, Engineering, and Medicine *Committee on the Neurobiological and Socio-Behavioral Science of Adolescent Development and Its Applications* for their contribution to this work.

Funding Sources

Funders for Adolescent Science Translation (FAST) provided funding for the committee's study and report. FAST members include the Annie E. Casey Foundation, the Bezos Family Foundation, the Chan Zuckerberg Initiative, the Ford Foundation, the Conrad N. Hilton Foundation, the Raikes Foundation, the National Public Education Support Fund, and the Robert Wood Johnson Foundation.

References

[1] Communities in action: Pathways to health equity. Washington, DC: National Academies of Sciences, Engineering, and Medicine; 2017.
[2] Risks and opportunities: Synthesis of studies on adolescence. Washington, DC: National Research Council and Institute of Medicine; 1999.
[3] Adolescent Health Services. Adolescent health services: Missing opportunities. Washington, DC: National Research Council and Institute of Medicine; 2009.
[4] Investing in the health and well-being of young adults. Washington, DC: Institute of Medicine and National Research Council; 2014.
[5] Projections of the size and composition of the U.S. Population: 2014 to 2060. Washington, DC: U.S. Census Bureau; 2014.
[6] Vijayakumar N, Mills KL, Alexander-Bloch A, et al. Structural brain development: A review of methodological approaches and best practices. Dev Cogn Neurosci 2018;33:129–48.
[7] Fuhrmann D, Knoll LJ, Blakemore SJ. Adolescence as a sensitive period of brain development. Trends Cogn Sci 2015;19:558–66.
[8] Patton GC, Sawyer SM, Santelli, et al. Our future: A Lancet commission on adolescent health and wellbeing. Lancet 2016;387:2423–78.
[9] The promise of adolescence: Realizing opportunity for all youth. Washington, DC: National Academies of Sciences, Engineering, and Medicine; 2019.
[10] A roadmap to reducing child poverty. Washington, DC: National Academies of Sciences, Engineering, and Medicine; 2019.
[11] Chetty R, Hendren N. The impacts of neighborhoods on intergenerational mobility I: Childhood exposure effects. Q J Econ 2018;133:1107–62.