

VIEWPOINT

Claudia Mueller, PhD, MD

Department of Pediatric Surgery, Stanford University Medical School, Stanford, California.

Meredith L. Rowe, EdD

Graduate School of Education, Harvard University, Cambridge, Massachusetts.

Barry Zuckerman, MD

Department of Pediatrics, Boston Medical Center, Boston University School of Medicine, Boston, Massachusetts; and Center for Advanced Study of Behavioral Science, Stanford University, Stanford, California.

Corresponding

Author: Barry Zuckerman, MD, Boston Medical Center, Boston University School of Medicine, 72 E Concord St, Room 324L, Boston, MA 02118 (barry.zuckerman@bmc.org).

Mindset Matters for Parents and Adolescents

An important responsibility of pediatricians is to help children achieve good health, resiliency, and developmental skills, especially when faced with adversity. While psychological factors have been shown to influence both physiological health and behavioral outcomes in a variety of settings, relatively little of this research has reached the world of clinical practice. The purpose of this commentary is to introduce the concept of *mindset* to pediatricians to stimulate research that may benefit children's health and development. In addition, we hope to bring their attention to well-established evidence of interventions that may influence mindset and behaviors.

In psychological theory, a mindset is a set of beliefs or assumptions held by individuals that contribute to their world view and can lead to different perceptions and actions. The study of mindset has been particularly influential in the world of education, where "growth" mindsets, in which success is based on effort or hard work, have resulted in improved performance on school tasks as well as in social interactions.¹ On the opposite end of the spectrum, children who have fixed and unchangeable mindsets, especially when supported by social contingencies (eg, girls are not good at math), tend to think there is nothing they can do to effect change within a certain area of function, which is reinforced by poor performance. These children show less persistence and worse performance after even minor failures, while those with a growth mindset about intelligence try harder and perform better at similar tasks.¹ Thus far, there has been no specific temperament or neurobiological source for this resilience in the face of setbacks; rather, it appears to stem from an underlying belief that success comes with challenges (including failure) and that performance can be improved through hard work.

Mindset research also has been shown to be valuable in the world of health care. Indeed, mindset analysis can be considered the cornerstone of placebo responses and may offer an explanation for the positive effects and physiological changes that are associated with inert pills or sham procedures. One elegant study² showed the power of beliefs or mindsets to result in different ghrelin responses when participants were told that the same milkshake was either high or low in calories and fat.² This finding goes beyond the subjective feeling of satiation directly to mind-mediated hormonal response; it is a placebo effect directly from the brain without the need of a pill. In another research paradigm, healthy adolescents with a "growth" mindset of health have been shown to view illness as less debilitating than those with "fixed" health mindsets, while adolescents with type 1 diabetes who believe health to be malleable have better health outcomes than those who view health as fixed.³ These effects were found to be independent of traditional "locus of control" measures.

Importantly, children do not appear to be born with 1 type of mindset or another; rather, it seems that mind-

set can be influenced or taught. For instance, praise that focuses on effort or practical aspects of a task has been shown to foster a growth mindset and lead to higher grades and less bullying.¹ Parents who systematically praised their young children for their effort between the ages of 14 to 38 months were found to have children who held more "growth" mindsets about intelligence domains at the ages of 7 to 8 years.⁴ In addition, parents' own mindsets shape their interactions with children and are malleable. Parents with a growth mindset report more engagement in reading and math activities with their children compared with parents with a fixed mindset who interact in less constructive ways with their children. Thus, it is possible that parents may hold mindsets of health, as they do about education, that could be influenced by information from pediatricians to improve health-related behaviors in children.

Mindset research has demonstrated that effective interventions can be inexpensive, brief, and involve simple verbal or visual messages. In educational settings, simple classroom lessons that describe the brain as a muscle that can be strengthened resulted in a growth mindset and improved school grades for seventh graders.¹ These types of psychological interventions, which can be less than 1 hour in length and follow easy-to-understand protocols that can be administered by any educator or supervisor, have been demonstrated to have major effects on both grade point average and health (measured by self-report and physician visits) for a variety of students.⁵ Likewise, interventions presented via short film clips that promote a positive mindset toward stress have resulted in physiological improvements, such as reduced cortisol responses, when compared with controls.⁶ Furthermore, mindset interventions have been shown to be scalable when given to large groups of students online: academic achievement, measured by grade point average and satisfactory completion of courses, for more than a thousand high school students improved significantly after they were given 2 short online mindset interventions.⁷

Overall, we consider the psychological construct of "mindset" to be an important avenue of future investigation by child health researchers because (1) certain mindsets appear to directly influence outcomes for health in adolescents, (2) parental mindsets have been shown to affect behaviors and outcomes for parents and children, and (3) mindsets are amenable to change with relatively straightforward messages about malleability. We see an important opportunity to develop and test simple interventions, including digital tools for parents and patients, that promote growth mindsets that affect health and development. If growth-mindset studies prove to be efficacious, further research will need to be undertaken to develop and refine best strategies for indi-

vidual diseases, clinical settings, and different groups of patients. A longer-term agenda involves the investigation of social reinforcement for beliefs, with the notion that mindset interventions in health care that are reinforced in other settings (eg, schools, Head Start programs, and religious organizations) are likely to increase in power. Indeed, mindset interventions may be espe-

cially valuable for vulnerable populations such as low-income parents and adolescents who, as part of their life circumstances, may adopt a more fixed view of health and development. In sum, we strongly believe that an understanding of mindset and its potential effects on health and behavior will open new means by which pediatricians may improve the lives of children.

ARTICLE INFORMATION

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