Evidence-Based Prevention for Adolescent Substance Use

Erin Harrop, MSW[a], Richard F. Catalano, PhD[b,*]

KEYWORDS

• Prevention • Adolescent substance use • Young adult substance use • Risk factors • Protective factors • Prevention science

KEY POINTS

- In recent decades, prevention science has emerged as a unique field with growing empirical evidence of effectiveness.
- Prevention science is based on the identification of predictors, risk and protective factors, for problem behaviors that have been found in individual, peer, family, school, and community domains.
- There is a robust evidence base for prevention programs and policies that address these identified predictors.
- Effective prevention programs can be delivered in school, family, and community settings, and they include such things as school curricula for the promotion of social and emotional competence, parenting programs, mentoring programs, normative change campaigns, and policy development.
- The challenge now is to mobilize across disciplines and communities to advance the policies, programs, funding, and workforce preparation needed to use prevention science to promote behavioral health and prevent behavioral health problems among all young people, including those at greatest disadvantage or risk, from birth through age 24.

Adolescence is increasingly being recognized as a pivotal developmental period with defining characteristics and functions.[1] Further, during the transition from adolescence to young or emerging adulthood, there are more biological, psychological, and social changes occurring than in any other stage of life, except infancy.[2] During this time,

Conflict of Interest: E. Harrop has no conflicts of interest to declare. R.F. Catalano is on the board of Channing Bete Company, distributor of Guiding Good Choices and Supporting School Success, a component of the Raising Healthy Children program, 2 of the 22 programs referred to in this report.

[a] University of Washington School of Social Work, Seattle, WA 98026, USA; [b] Social Development Research Group, University of Washington School of Social Work, 9725 Third Avenue Northeast, Suite #401, Seattle, WA 98115, USA
* Corresponding author.
E-mail address: catalano@myuw.net

Child Adolesc Psychiatric Clin N Am 25 (2016) 387–410
http://dx.doi.org/10.1016/j.chc.2016.03.001 **childpsych.theclinics.com**
1056-4993/16/$ – see front matter

adolescents are charged with many tasks that usher them into a period of adulthood, marked by greater independence. These developmental tasks include gaining skills to perform adult roles, separating from parents, achieving greater autonomy from adults, building social connections with peers, developing a positive body image, managing their emerging sexuality, and cultivating a more robust sense of identity.[2,3]

However, this period is not only marked by greater autonomy and growing responsibilities, but it is also marked by increasing experimental behaviors, through which adolescents explore the world. Neural changes in the brain during adolescence facilitate exploration and risk taking, while the cognitive functions of the brain are not yet fully developed, decreasing cognitive decision making, feelings of inhibition, and worry about the future, and increasing emotional-based decisions.[4] The benefits of this unique neural developmental pattern characteristic of adolescence include rapidly increasing knowledge about the world through a variety of new experiences and a heightened neural reward system. However, this period is also marked by greater vulnerability, as adolescents can be exposed to more potentially harmful situations as a result of their experimentation and exploration. A core challenge in adolescent and young adult health promotion is that "problem behaviors" related to experimentation are a normal part of adolescent development, yet they carry with them inherent threats to health.[5] These threats to health have severe consequences, including substance use problems, violence, vehicular accidents, risky sexual practices, self-harm, and even death. In fact, most adolescent and young adult deaths that occur globally are related to problem behaviors.[6] Laurence Steinberg, psychologist and expert on adolescent development, summarizes this unique developmental period in the following way:

> *Brain science explains… why adolescence is a vulnerable period… There is a time lag between the activation of brain systems that excite our emotions and impulses and the maturation of brain systems that allow us to check these feelings and urgings—it's like driving a car with a sensitive gas pedal and bad brakes. When our capacity for self-regulation isn't strong enough to rein in our arousal, problems are more likely to result—problems such as depression, substance abuse, obesity, aggression, and other risky and reckless behavior.*[7(p15)]

Due to the significant consequences of adolescent problem behaviors, researchers in the past 4 decades have increasingly focused on approaches to ameliorate these behaviors in hopes of improving adolescent health outcomes and mitigating mortality rates. Although many early prevention programs had disappointing success rates (and at times iatrogenic effects), programs in the past 3 decades have achieved more promising and effective outcomes.[8–12] This article specifically addresses the evidence base for prevention programs targeted at reducing substance use behaviors in adolescence and emerging adulthood. The article begins with a brief description of prevention science, followed by descriptions of key risk and protective factors specific to the adolescent and emerging adult periods. Following this, an overview of effective prevention programs and policies is described, including a brief presentation of prevention programs for adolescents and young adults with strong evidence of effectiveness. The article closes with an articulation of the challenges and opportunities currently emerging in the field.

THE SCIENCE OF PREVENTING PROBLEMATIC BEHAVIORS

Prevention science had been created as a field by incorporating and organizing findings from research on life-course development, community epidemiology, and