Substance Use in Youth: What Could an Ounce of Prevention Be Worth?

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Risk for substance use disorders begins early in life. Approximately 65% of adults in treatment of opioid use disorder report that their first use occurred before the age of 25[1]; for adult daily smokers, the estimate is 90%.[2] As experimental use of substances transitions to regular use and problematic use, and ultimately to a use disorder, abstinence becomes increasingly difficult to achieve; many risks, including unintentional injury, damaged relationships, and even lasting alterations to a youth's developing brain, have likely already occurred. For these reasons, preventing substance use among children, adolescents, and young adults is critical.

For substance use prevention efforts to have meaningful population health impacts, clinical preventive services (typically defined as interventions deployed in health care settings that are used to either prevent illness or detect it in a more treatable stage) cannot be the sole, or even primary, pathway to improved population-level substance use outcomes. Such clinical services, even when evidence-based themselves, need to be deployed in the context of public health–minded communities and sound policy environments, with attention given to both the health of populations and the equitable distribution of health outcomes within populations. Whereas the US Preventive Services Task Force (USPSTF) comments on prevention interventions that typically target one patient at a time in the context of that patient's primary care, the Community Preventive Services Task Force (CPSTF) (housed within the Centers for Disease Control and Prevention), comments on interventions delivered to communities. Looking at the set of recommendations from these 2 organizations, the current state of the science for substance use prevention for youth reveals a highly variable evidence landscape across prevention approaches and across different substances.

For evidence-based interventions at both the clinical and community levels, tobacco represents today's substance use prevention success story. From the perspective of clinical preventive services, the USPSTF recently concluded, with moderate certainty, that using primary care–feasible interventions to prevent tobacco use in children and adolescents produces a moderate net benefit on health outcomes (B recommendation[3]). Adding to this optimism is that many different intervention modalities (eg, print-based materials, face-to-face counseling, and computer-based interventions) appear to work for tobacco prevention,[3] and each of these modalities can likely be implemented

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with reasonable fidelity across practice settings. Although this optimism is tempered by a lack of evidence on how to prevent e-cigarette use (which is far more common among youth today than traditional, combustible tobacco smoking), the evidence on the latter is generally thought to be applicable to the former.[3] From the perspective of public health prevention models, the CPSTF has found mass media prevention campaigns and community interventions aimed at limiting youth access to tobacco products through sales laws and retailer education to be effective prevention strategies.[4] Each of these recommendations is based on a thorough, rigorous, and transparent review of the current evidence.

If tobacco represents an evidence-based prevention success story, the story of alcohol is more guarded. Although the USPSTF's B recommendation to screen for alcohol use in persons >18 years of age (a clinical preventive screening recommendation) explicitly covers early hazardous use,[5] the USPSTF does not have a true prevention recommendation for youth alcohol use in its portfolio. Conversely, The CPSTF recommends limiting days and hours of alcohol sales, regulating the density of alcohol outlets in communities, increasing alcohol taxes, and enforcing laws that prohibit alcohol sales to minors.[6] According to the CPSTF, each of these public health approaches has been shown to prevent alcohol use in youth.

In comparison with tobacco and alcohol, the evidence pertaining to the prevention of illicit substance use (typically defined as use of substances that are illegally obtained or involve nonmedical use of prescription medications) is far less substantial. The USPSTF recently concluded that the evidence is insufficient to assess the balance of benefits and harms of primary care interventions to prevent illicit drug use in children, adolescents, and young adults (I statement[7]). Although Knight et al[8] recently published a study that provides a ray of hope for our ability to prevent cannabis use in youth, the USPSTF found the overall collection of evidence for illicit substances to be inconsistent: some studies reported positive findings, a plurality demonstrated no clear benefit, and two reported increases in drug use among intervention recipients.[7] Currently, the CPSTF has no recommendation statements on public health interventions to prevent illicit drug use.

Building the evidence base for substance use prevention is challenging. For clinically oriented interventions in youth, use of certain substances is uncommon enough that studies with large sample sizes are required to demonstrate true health outcomes; quality of life is difficult to measure accurately in young populations; and benefits may take years, or even decades, to accrue. For community-oriented interventions, the variability across communities, the evolving state and federal policies, and the appropriate selection of comparison groups in nonrandomized studies each create challenges to developing a dependable evidence base. In studies of both clinically and community-oriented interventions, researchers must also consider potential harms, which may be difficult to quantify.

These challenges, however real, only reinforce the urgency of developing the evidence base for substance use prevention for children, adolescents, and young adults. As in the case of tobacco, comprehensive prevention will require the development and successful dissemination of clinical and community-focused interventions, with collaboration across researchers, clinicians, health care organizations, public health officials, community organizations, and governmental agencies. It will require large studies with long follow-up periods and common end points that can be meta-analyzed. Over time, if successful, such substance use prevention efforts have the potential to improve population health by orders of magnitude more than interventions aimed exclusively at treatment.

ABBREVIATIONS

CPSTF: Community Preventive Services Task Force
USPSTF: US Preventive Services Task Force

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