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Proceedings of a Workshop

IN BRIEF

June 2019

Applying Lessons of Optimal Adolescent Health to Improve Behavioral Outcomes for Youth: Public Information-Gathering Session

Proceedings of a Workshop—in Brief

The Committee on Applying Lessons of Optimal Adolescent Health to Improve Behavioral Outcomes for Youth is conducting a study to identify key components of youth-serving programs that have proved successful in improving health outcomes related to adolescent behavior. As a part of this work, the committee held a public information-gathering session on April 17, 2019. The day-long session consisted of five panels: (1) health education decision making in public education systems, (2) effective measurement and evaluation of adolescent behaviors and behavioral interventions, (3) effective elements of programs focused on adolescent behavior, (4) evaluations of the Teen Pregnancy Prevention (TPP) Program and sex education programs, and (5) a discussion with youth.

This public session represents just one of the ways in which the committee is gathering information for their report. Over the course of the study period, the committee will meet multiple times to consider this and other information in order to develop their recommendations for the final consensus report. Every recommendation made by the committee in its final report is subject to peer review, and once these review comments are addressed, the report will be released to the public.

This document has been prepared as a factual summary of what occurred at this session, and statements made are those of the panelists or individual meeting participants and do not necessarily represent the views of all meeting participants, the committee, the Board on Children, Youth, and Families, or the National Academies of Sciences, Engineering, and Medicine.

HEALTH EDUCATION DECISION MAKING IN PUBLIC EDUCATION SYSTEMS

The first panel examined the information that public education systems use to select and implement health and sexual education programs and initiatives.

The District of Columbia Public Schools (DCPS) system has a 5-year cooperative agreement through the Division of Adolescent and School Health of the Centers for Disease Control and Prevention (CDC) to reduce sexual risk behaviors using three different approaches, explained Wesley Thomas, program manager for the system's HIV/STI [sexually transmitted infection]

The National Academies of

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Prevention Programs. The first approach is creating safe and supportive environments for all students, with a focus on LGBTQ students. The second approach is providing sexual health services through a condom distribution program, school-based health centers, and trained school-based professionals who help students navigate sexual health services both in their schools and in their communities. The third approach is comprehensive sexual health education. Thomas and his colleagues also implement the Youth Risk Behavior Survey, in which students self-identify risk behaviors.

The cooperative agreement with the CDC provides for a youth advisory committee that provides a testing ground and source of feedback for activities. The DCPS system also has a community steering committee to help review, implement, and modify curricula. In addition, Thomas' program works with parents and community-based organizations to help reduce risk behaviors, and it partners with the local health department on anonymous STI screening.

Thomas pointed out that sexual health education curricula tend to be tested in settings that are not necessarily like the ones in which they are implemented. As a result, the DCPS system has been moving away from prescriptive interventions toward skill-based interventions, he said. In particular, the system has adopted a curriculum titled *Rights, Respect, Responsibility* that seeks to build the skills of facilitators so that they are comfortable answering challenging questions and navigating controversies and different values among students.

Students do not lead single-issue lives, said Thomas. The school district therefore works not only with health education teachers but also with school social workers and school psychologists to make sure that students are acquiring the skills they need outside school. In this way, students can be empowered to make responsible decisions in all facets of life.

Prince George's County, which is on the border with Washington, D.C., faces many of the same issues as its neighbor but also answers to broader state concerns, said Sandra Shephard, a member of the county's Board of Education. The school system chooses curricula aligned with the *Maryland State Health Education Standards* and the *National Education Standards*, and it also partners with local nonprofit organizations to get feedback on sexual health education in the schools and to work on health education outside school programs.

Shephard emphasized the many different cultures of the students who attend schools in Prince George's County. Creating programs and implementing curricula that reflect and respect those many different cultures can be challenging. For example, parents may not want for their children to receive sexual health education, which requires outreach to parents to communicate to them the risks of not teaching children about sexual risk behaviors.

Robert Mahaffey, executive director of the Rural School and Community Trust, a national non-profit organization addressing the crucial relationship between good schools and thriving communities, pointed out the particular concerns for rural areas. For example, infrastructure and access to services, such as transportation, are major challenges in rural areas. The Rural School and Community Trust therefore seeks to build broadband access, transportation resources, and other services so that young people can access health care services, including mental health services. A particular focus of the trust is literacy, given its importance in educational success and access to health services. The trust partners with other organizations to build early literacy, ensure access to books, create positions for reading specialists in schools, and provide other supports for rural students.

The trust brings together community leaders, including individuals who do not have children in school and are not educators, so that the community is engaged in developing opportunities for children and families. It also seeks to build frameworks of faith-based institutions, community nongovernmental organizations, businesses, and local governments to build support for sustainable, long-term commitments. One of its partnerships, for example, is with the Gay, Lesbian & Straight Education Network, which advocates for the health and education of rural LGBTQ students.

Since the late 1990s, the Rural School and Community Trust has been producing a definitive biennial research report on the state of education in rural areas. The reports provide data across a wide range of indices, such as poverty rates, teacher compensation, student enrollment, and reading test scores. Recent reports have directed particular attention to the connection between healthy children and educational outcomes.

During the public comment period, Rick Seitz, chief of administrative services for the Department of Juvenile Services in Ocean County, New Jersey, recommended the use of the PAX Good Behavior Game¹ for a variety of behavioral health issues. It has proven effective in prevention of substance use, truancy, suicide, and pregnancy, he said, and hopes it will be highlighted by the committee.

EFFECTIVE MEASUREMENT AND EVALUATION OF ADOLESCENT BEHAVIORS AND BEHAVIORAL INTERVENTIONS

The second panel discussed effective elements or components of methods used to measure and evaluate adolescent risk behavior and/or intentions, as well as useful methodologies for identifying effective elements.

The first panelist, Lisa Rue, senior advisor and strategic partnerships at cliexa² discussed her team's preliminary research in developing a more precise sexual risk assessment for adolescents and young adults. Based on her years of experience teaching health and relationship skills to high school students, Rue said that the most popular approach she had taken—Mindfulness Skills for Intimate Relationships—taught students how to recognize and think about the factors involved in sexual relationships. As a research fellow at the University of Northern Colorado, Rue and her colleagues developed a framework for sexual risk prevention needs that identified a continuum of change driven by past sexual activities, decisions, and experiences. Their continuum recognizes three groups: (1) primary prevention—those choosing not to have sex; (2) secondary prevention—those choosing not to have sex after initiating sex; and (3) tertiary prevention—those choosing to have sex.

Rue conducted in-depth interviews with the secondary risk population to identify specific risk variables, including motivations for first sexual experiences. Through these interviews, she discovered that many reasons for deciding to discontinue sex involved emotional consequences.

Rue's team developed a measure of risk and resiliency that involves social and behavioral risk screening, structured reports, and follow-up for those at highest risk. Adolescents complete a holistic risk-assessment screening that identifies critical domains, including sexual risk, mental wellness, substance use, and resiliency. Physicians then review these assessments during clinical appointments to inform follow-up care. Adolescents with moderate, preventable risk are enrolled in a prevention program with digital prevention monitoring through a cliexa platform known as MyPLAN. High-risk adolescents are given diagnostic feasibility assessments, referred to specialty care providers for treatment, and digitally monitored through a treatment platform.

Rue identified several key conclusions about what she called precision prevention for adolescent populations. Measures of sexual risk and resiliency and other resiliency factors, such as having a trusted adult with whom an adolescent can confide, can help to support precision prevention. Holistic measures of risk and resiliency need to incorporate mental wellness, she said. And technology provides a way to scale assessments leading to brief interventions and tailored prevention services.

The second panelist, Ty Ridenour, research public health analyst at RTI International, discussed two instruments used to measure the propensity for chronic risky behaviors and to screen for prevention: the Youth Risk Index (YRI) and the Assessment of Liability and Exposure to Substance

¹For more information, see https://www.goodbehaviorgame.org/ [May 2019].

²cliexa is a company that promotes clinical excellence with algorithms; for more information, see https://www.cliexa.com/about/ [May 2019].

use and Antisocial behavior, Revised (ALEXSA-R). Both tools are for use in Screening, Brief Intervention, and Referral to Treatment (SBIRT), an evidence-based practice used to identify, reduce, and prevent problematic use, abuse, and dependence on alcohol and illicit drugs.³

YRI and ALEXSA-R are tools that can identify young people who have a high propensity for risky behaviors years before those behaviors occur or become harmful, Ridenour said. Research on the YRI has found that it can accurately predict multiple early risky behaviors for adolescents ages 9 to 13. The tool scored adolescents between zero and four on factors related to early risky behaviors, with the increase from zero to one and from one to two each representing a 730 percent increase in the risk of that behavior appearing within the next year. Interventions in collaboration with families then can be implemented in an individualized way before behaviors become habitual and harmful.

Ridenour stressed that such measures must be acceptable to adolescents, parents, and physicians if they are to be used. A study of program acceptability found that almost all stakeholders—patients, parents, pediatricians—believed that it would be appropriate for pediatricians to facilitate these kinds of interventions to help children behave in safer ways. Few parents or patients conveyed concerns about confidentiality. About 85 percent of parents reported that if a pediatrician found their child to be at risk, they would seek additional help.

Based on these preliminary findings, Ridenour concluded, YRI and ALEXSA-R appear to be accurate screening tools that fit within well-child visits and are considered acceptable and useful by patients, parents, and pediatricians.

The third panelist, Elizabeth D'Amico, senior behavioral scientist at the RAND Corporation, described several interventions that target diverse at-risk youth. One such intervention is Project CHOICE, an evidence-based program targeting alcohol and other drug use in middle school students. Another is Free Talk, which targets at-risk youth with first-time alcohol or drug offenses. A third is Project Chat, which is based on a 15-minute intervention in a primary care setting. All these interventions have had positive effects in reducing alcohol or drug use in the target populations, D'Amico said.

D'Amico also has worked on Project Aware, a program for homeless young adults between the ages of 18 and 25 aimed at reducing risky behaviors. After completing the program, participants reported increased condom use, decreased alcohol use, and increased self-efficacy around using condoms. Another program on which D'Amico has worked is Motivational Interviewing and Culture for Urban Native American Youth, one of the first interventions to integrate traditional practices with the evidence-based program of motivational interviewing.

A longitudinal study of youth has found that, by age 18.5, approximately 7 percent of participants reported drinking alcohol before they had sex with a steady partner, while twice as many youth reported drinking alcohol before having sex with a casual partner. Marijuana use had similar results, with almost double the rate of use before having sex with a casual partner compared to a steady partner. One promising result was that more youth reported using a condom with a casual partner than a steady partner.

D'Amico cited several valuable lessons learned in working on these interventions. First, she said variables must be correctly measured to validate a program's effectiveness in reducing risky behaviors. Second, she said obtaining accurate data requires that risk be understood for sexual behavior and for alcohol and drug use. Finally, she said staying up to date on the usage and terminology around these substances is necessary to accurately measure changes across developmental periods.

During the public comment period, Risto Marttinen, an assistant professor in health and physical education at George Mason University, encouraged the committee to examine physical activity as a way of preventing risky behaviors in adolescents. Health and physical education

³For more information, see https://www.integration.samhsa.gov/clinical-practice/sbirt [May 2019].

classes have captive audiences, he observed, and experience from countries such as Australia demonstrate the advantages of a strengths-based rather than an at-risk approach.

EFFECTIVE ELEMENTS OF PROGRAMS FOCUSED ON ADOLESCENT BEHAVIOR

The third panel centered on effective elements or components of programs focused on youth risk behavior and useful methodologies for identifying effective elements to reduce those behaviors.

The first panelist, Aaron Hogue, director of adolescent and family research at the Center on Addiction, discussed medication decision making and core elements of behavioral treatment for youths with opioid use disorder (OUD). Though no behavioral treatments are currently known to be effective for treating youth OUD, some evidence suggests that Medication-Assisted Treatment (MAT), which combines behavioral therapy and medications and is the most effective approach for adult OUD, is effective with adolescents. However, Hogue said, a number of barriers need to be addressed to implement MAT models for youth OUD, including stigmas related to opioid use and medication, access barriers, and intervention delivery barriers.

Medication, Education, and Decision-making Supports (MEDS) protocols could help lessen the barriers involved in medication assistance, Hogue said. These protocols have three distinct components that can be integrated into a single effective solution: (1) family psychoeducation about OUD, (2) family-based psychoeducation about medication options, and (3) shared decision-making interventions that can help families make patient-centered and consumer-based decisions.

Barriers to the delivery of evidence-based, manualized behavioral treatments include clinical complexity, training, quality assistance, and fidelity maintenance requirements. To address these challenges, Hogue's team used a technique called empirical distillation to condense multiple manuals for OUD into a reduced set of common active core practices. They also used fidelity blueprints and tools to conduct a rigorous observational analysis of model delivery. The team sampled 300 different treatment sessions from three different high-quality samples representing a range of ages and problem states. Every session was rated with the fidelity scale of the particular model from which it was derived. This rating system allowed Hogue's team to distill the 51 original treatment techniques used to 21 core techniques that were common across the samples and models. Hogue and his colleagues then conducted another study that analyzed community-based clinicians who delivered various kinds of family-based practices and found that the same core practice techniques were used in these real-world settings.

The techniques can be divided into four categories: (1) family restructuring, (2) family reframing, (3) adolescent engagement, and (4) relational emphasis. Hogue said that those 21 techniques have the potential to increase training practicality, clinical flexibility, and applicability in a wide variety of complex cases. The National Institute of Mental Health and the National Institute on Drug Abuse are funding Hogue's team to examine innovative ways to disseminate, train, and sustain these core techniques in everyday settings, moving beyond complex and costly manuals toward approaches that can be more easily implemented.

The second panelist, Heather Hensman Kettrey, assistant professor of sociology at Clemson University, discussed the state of research on the prevention of sexual assaults among adolescents and college students. Sexual assault is a prevalent problem in these age groups, with nationally representative telephone surveys of adolescents indicating that 17.8 percent of 17-year-old females and 3.1 percent of 17-year-old males had experienced sexual assault by another juvenile at some point in their lives.

Kettrey said that existing reviews of the literature on sexual assault prevention among adolescents and college students reveal a relative dearth of high-quality studies. More studies measured attitudinal outcomes than behavioral outcomes, and those studies that did measure behavioral outcomes produced limited evidence of desirable effects on sexual assault victimization

and perpetration. Given the paucity of evidence regarding behavioral effects, it is imperative to identify effective prevention strategies, Kettrey said.

Training peers to act as prosocial bystanders is a promising area for further research, she observed. One potential training approach is through bystander programs, which encourage young people to intervene when witnessing incidents or warning signs of sexual assault. By treating participants as allies rather than as potential perpetrators or victims, bystander programs can reframe the potentially threatening approach of traditional sexual assault prevention programs.

Kettrey and her colleagues recently finished a systematic review and meta-analysis of the effects of bystander programs among adolescents and college students. They identified 797 high-quality research reports that they narrowed down to 38 reports with findings from 27 independent studies. The systematic review drew several conclusions. First, bystander programs have a significant, desirable effect on young peoples' rates of intervention when witnessing sexual assault or its warning signs. However, this effect was only significant at 1 to 4 months; it was not significant at 6 months to 1 year post-intervention. Booster sessions several months after the intervention may strengthen the longevity of these behaviors, she said.

Second, bystander programs do not have a significant effect on sexual assault perpetration. Participants in the program were no more or less likely to perpetrate sexual violence than those who did not participate, although they were more likely to intervene if they saw somebody else doing something that warranted intervention.

Taken together, the evidence suggests that prevention programs that harness the power of peers have the potential to reduce victimization of adolescents and college students, Kettrey concluded, and these types of programs may be especially important in areas where more traditional approaches have produced minimal evidence of desirable effects.

The final panelist was Kimberly Robinson, executive vice president at the Forum for Youth Investment and managing director of the David P. Weikart Center for Youth Program Quality, who discussed evidence-based practices in afterschool programs. The Weikart Center conducted a systematic review and meta-analysis aimed at identifying a set of evidence-based best practices that could help youth workers engage in high-quality practices when interacting with young people. Practitioners contributed additional insights to ensure that the practices were realistic and sustainable.

Robinson's team then used the practitioner-identified practices to create a low-cost and practical assessment tool known as the Youth Program Quality Assessment, which is designed to measure the quality of youth programs and identify staff training needs.⁴ In addition, Robinson's team created training to help support programs with area-specific weaknesses. Using the Youth Program Quality Assessment, studies have found correlations between quality practices and positive outcomes, ranging from school attendance and behavior to grade promotion and achievement. Research results also have shown that students with the lowest level of skills experienced the most increases from high-quality programs.

An intervention based on the assessment uses a continuous improvement methodology to foster high quality in programs. Robinson explained that the continuous improvement approach keeps data and decision making in the hands of practitioners, helps institutionalize the use of data and the focus on high-quality practice, and supports sustainability despite high levels of staff turnover in youth programs. Rather than replacing programs with entirely new curricula, the Youth Program Quality Intervention layers a set of high-quality practices on top of existing programs, making these practices faster and cheaper to scale.

Though their work has focused on afterschool programs, the continuous improvement cycle is designed to be useful across a range of different programs and contexts, and the Center for Youth Program Quality is eager to extend its work into new spaces, Robinson concluded.

⁴For more information, see http://cypq.org/assessment [May 2019].

During the public comment period, Lisa Lauxman, a national program leader at the U.S. Department of Agriculture, emphasized the need to focus on the behavioral outcomes that contribute to positive youth development. She also noted that young people can be engaged and involved in assessing what they know are high-quality programs.

EVALUATIONS OF THE TEEN PREGNANCY PREVENTION (TPP) PROGRAM AND SEXUAL EDUCATION POLICIES AND PROGRAMS

The fourth panel examined evidence-based evaluations of teen pregnancy prevention and sexual education programs and policies.

The first panelist, Randall Juras, senior scientist at Abt Associates, discussed the lessons derived from a recent meta-analysis of federally funded programs on teen pregnancy prevention. Among more than 40 new evaluations, several found evidence of effectiveness. Juras' team explored whether successful programs had common elements by looking across studies to determine what programs or components work best. They identified a set of candidate observable characteristics, or moderators, grouped into three broad categories: (1) program characteristics, (2) strength of implementation, and (3) participant characteristics. The meta-analysis found two approaches to be the most successful in teen pregnancy prevention: delivering programs to individuals rather than to groups and programs designed exclusively for girls. However, many of the programs that delivered content to individuals were the same programs that were designed exclusively for girls, and as a result it was not possible to know which of these two factors was driving the favorable results.

Juras and colleagues' meta-analysis found no evidence that mixed-gender programs worked better for girls than for boys, and no conclusions could be drawn about boys-only programs because none was included in the sample. The meta-analysis did not find any other elements of program design, implementation, or participant characteristics that seemed to be associated with more favorable program effects.

Juras noted that even well-conducted, randomized experiments had limitations. First, it was difficult to assess short-term changes in sexual behavior for adolescents. Although many evaluations found effects on intermediate outcomes such as knowledge, attitudes, and skills, there was very little evidence that linked those kinds of intermediate outcomes to the ultimate behavioral outcomes of interest. Juras' team is currently updating the meta-analysis to incorporate longer-term findings from many studies.

Second, the contrast between treatment and control groups was sometimes weak. Control groups had access to much of the same information and activities as the treatment groups, and the community-based settings of many of the studies may have led to group intermingling. This weakness is reflected in the third limitation, that randomized experiments were probably impractical for studying interventions that were intended to affect community norms because they relied on the control group being unexposed to key elements of the intervention.

The second cohort of TPP grants from the Office of Adolescent Health is focused on scaling these programs to the community level. Due to the limitations of conducting randomized experiments in this context, the methodological toolkit may need to be expanded to study these kinds of programs, Juras said.

The second panelist was Irene Ericksen, research analyst at the Institute for Research and Evaluation. She discussed the Teen Pregnancy Prevention Evidence Review, which produced a list of programs that she said had "shown evidence of effectiveness in reducing teen pregnancy, sexually transmitted infections, and associated sexual risk behaviors." However, Ericksen said, though the evidence review rigorously evaluated and rated study quality, it was less rigorous about the program outcomes that it required as evidence of effectiveness.

She and her colleagues, drawing on the field of prevention research, developed a set of five standards for sexual education outcomes that were intended to be both scientifically sound and pragmatically useful in identifying truly effective programs. First, they thought program effects should last at least 12 months after the program. Second, they thought effects should occur on at least one key protective indicator: abstinence; condom use, especially consistent condom use; pregnancy; or STIs. Third, they thought a main effect should not only occur for the targeted population but for a subgroup or segment of the population. Fourth, they thought all valid evidence should be taken into account, especially studies by independent evaluators. Finally, negative program effects should nullify a program's label as "effective."

Ericksen's team used these standards to formulate recommendations for future study designs. Specifically, they focused on programs aimed at reducing STI rates among teens, which are currently at epidemic levels. To protect adolescents from STIs, Ericksen's team concluded that outcome studies would benefit from measuring increased abstinence separately, measuring increased condom use separately, and measuring increased use of other forms of contraception separately, rather than combining them all in a single measure of "unprotected sex."

Ericksen's team applied their criteria for program effectiveness to two types of sexual education: comprehensive sexual education (CSE)—described as being typically condom-based and may include encouragement for abstinence, and abstinence education—described as having the primary focus of abstaining from all sexual behaviors, and condom use is not promoted. They analyzed 120 studies of school-based sexual education worldwide, and of the 103 CSE programs, they found that only 6 of them met the standards defined by their definition of effectiveness. Of those on the TPP registry, they found only one CSE program that produced a long-term effect on one of the key outcomes without producing other negative effects. They found that six of the CSE programs had negative effects, increasing risk behavior, STIs, or pregnancies. Taken together, Ericksen said, this evidence suggests that the school-based CSE programs on the TPP registry are more harmful than effective. The results appear to be somewhat better for abstinence programs than the CSE programs, though the pool of studies is small, she added.

On the basis of her team's findings, Ericksen made several recommendations. Her recommendations were to develop a meaningful definition of sexual education effectiveness; apply this definition equally to all prevention programs on the TPP list; remove programs from the TPP list that do not meet these standards, especially those that have produced negative effects; and pursue alternatives to the CSE prevention model, especially in school settings.

The final panelist was Jennifer Manlove, senior research scientist at Child Trends. Based on her research experience, Manlove offered four messages. First, she noted that action must be taken to reduce teen pregnancy. Though teen birth rates have been declining for the past several decades, rates remain much higher in the United States than in other industrialized countries. Disparities in teen birth rates also persist, with birth rates for African American, Hispanic, and American Indian teens twice the rate for white teens.

Her second message was to use existing evidence to inform future actions. The evidence review of TPP programs found that multiple types of evidence-based programs have impacts on behavioral outcomes. Manlove said that, depending on their needs, communities should have the choice between a variety of programs, including abstinence education, comprehensive sexual education, youth development approaches that may combine educational engagement and sexual and reproductive health, clinic-based approaches, and parent/youth education programs.

Her third message was to continue to learn from scaling-up programs. Communities often implement programs that have been developed in substantially different contexts. Instead of jumping into a random assignment study of a scaled-up program, programs need to be improved and tailored to new populations, she stressed. This tailoring may involve implemen-

tation evaluation, rapid cycle testing, or continuous quality improvement to customize and improve an intervention for new settings.

Manlove's fourth and final message was the importance of expanding the evidence base. Comparable types of programs may exist for substance use, violence, HIV, and teen pregnancy prevention, but these programs tend to operate independently. Also, programs need to be identified and tailored to underserved populations, including males, older teens, and high-risk and hard-to-reach populations, Manlove said. Program development, replication, and implementation should include youth, community members, and facilitators to ensure that a program is culturally relevant and developmentally appropriate, she concluded.

During the public comment period, Colleen Murray, senior science officer at Power to Decide, noted that the term "optimal health" has broad meaning in the public health field but seems to be used in a particular way in this context, namely, to mean not having sex or returning to not having sex. She said she and others are concerned that this leaves the many young people who continue to be sexually active without critical information that will help them avoid pregnancy and STIs.

Samantha Dercher, federal policy director at the Sexuality Information and Education Council of the United States, urged the committee to support research on which sex education curricula are most effective for young people of color and LBGTQ youth.

A DISCUSSION WITH YOUTH

The fifth and final panel provided an opportunity for three peer-to-peer educators to describe how adolescents obtain information about their health, how youth think health can be developed and supported, and what messages and delivery methods resonate with adolescents. The three panelists were Richard Nukpeta, a rising senior at Old Mill High School in Millersville, Maryland, who works with the *Living the Example* program at the Mentor Foundation USA; Shayna Shor, a junior behavioral and community health student at the University of Maryland who works as a peer leader at the University Health Center; and Natnael Abate, a senior at Benjamin Banneker High School in Washington, D.C., and a peer educator with Promising Futures.

When asked what it means to be a healthy and thriving young person in 2019, Abate cited physical, mental, and emotional stability, an acceptance of who you are, and engagement in mutually supportive relationships. Shor referred to eight dimensions of wellness developed by the Health Promotion and Wellness Office at the University of Maryland that go well beyond physical health. Nukpeta said that a healthy young person can combat any situation that arises involving physical and mental health. No matter what, he said, young people will find themselves in situations that force them to make decisions about drugs, alcohol, and sex. Therefore, youth need access to resources that will equip them with the knowledge and understanding to reduce risky behaviors.

Asked to comment on the sexual education programs that they experienced, Nukpeta, who was raised in Chicago before moving to Maryland, emphasized the major differences between the two regions. In Chicago, he received sexual education in the sixth grade, which he found to be an advantage. Adolescents hit puberty prior to high school, he noted, and therefore need sexual education before high school. In Maryland, sexual education was taught at a later age, after many of Nukpeta's peers had already had sexual experiences and developed their own notions. If students are given sexual health information at a younger age, he said, they have the skill sets, knowledge, and power to make informed decisions.

Abate agreed, pointing out that he received sexual education in seventh grade, which he believed was too late. Sexual health should be discussed in an age-appropriate way as early as 7 years old, he said. When parents avoid discussing sexual health with their children, they build a wall that drives their children to seek information through less reliable sources, he said, adding

that honest and direct communication is vital to establishing an open relationship, normalizing these discussions, and reducing the stigma around sexual health.

Shor reiterated the importance of starting these conversations at an early age and pointed to the importance of using the proper terminology. Discomfort around using anatomically correct terms makes it difficult to facilitate conversations around safe sex, she said. Heteronormativity is another issue in most sexual health education programs in colleges and high schools, she observed. Sexual education programs typically define sex as penetrative sex between a man and a woman, but this excludes whole groups of people, such as people who have same-sex partners, who have different body types, or who practice other types of sexual activity. Shor added, open lines of communication can help reduce stigmas against sex in general, but these discussions need to include all kinds of sexual activity to reach the entire young adult population.

With regard to the strategies and messages that they found most effective in prevention programs, Shor emphasized honesty as the most important component for success. Allowing students to discuss risky behaviors in a nonjudgmental environment is crucial to harm reduction, she said. For instance, in discussing alcohol use with an underage student, the legal issues should be less important than helping them build a skill set that can reduce risky behaviors. Also, Shor said, older adults can come off as preachy while peer-to-peer education can reduce the fear students often feel in having these conversations. Nukpeta agreed that peer-to-peer education is an effective model for both sexual health and drug use, adding that his program, Living the Example, is beneficial both to himself and to his peers.

Abate described several successful elements of the Promising Futures organization that could be applied to other prevention programs. One of the first rules he learned was that whatever was said in the room stayed in the room, which created a safe space to talk without fear of negative consequences. Promising Futures also partners with other programs for outreach.

Providing youths with accurate and comprehensive sexual education is not enough, Nukpeta added. Many young people feel unable to access the sexual health resources they need. Poor communication is another barrier to risk reduction, Abate added. For example, a good family may support a child's education and offer unconditional love, but a supportive family will take the time to ensure that their child's mental health needs are being addressed. More counselors are also needed who can have these kinds of discussions with youths, he said.

In Shor's opinion, the greatest barriers to young people's health are fear and privilege. Marginalized groups have less access to programs and may feel less welcome and cared for in these programs, she said. Conversations with these groups are necessary to determine their specific needs and desires. Eliminating stigmatizing language will also improve communication pathways, she said.

All three panelists emphasized the importance of communicating through social media. Shor said that the University's Health Promotion and Wellness Office frequently uses social media to spread the word about its programs, share health information, build community, and promote advocacy. Nukpeta pointed out that social media is an important tool for branding an idea or concept. Instagram and Snapchat can increase awareness of programs and establish and incentivize open lines of communication. Abate agreed that social media networks allow connections to spread far more quickly than would be possible in person.

At the end of the discussion, participants commented on a recent program that has seen success by reframing sexual health around relationships and intimacy rather than in the context of puberty and anatomy. Shor supported this concept because she thought it could promote inclusivity by allowing conversations around different forms of sex and different types of relationships. Plus, she added, refocusing sex through the lens of relationships and intimacy could reduce some of the negativity that surrounds sex. Shor said that if young people are not comfortable discussing sexual intimacy, then they may be unable to build positive relationships. Building a

program around relationships and intimacy may empower young people to voice their likes and dislikes and give them the tools that they need to navigate conversations around consent.

Abate agreed with the positive potential of this approach. Sexuality occurs along a spectrum and is a natural part of life, he said. If people feel uncomfortable expressing ideas or feelings, they need the tools to be able to so. Nukpeta similarly supported the idea of adding a relationship component to the sexual education curriculum, though he added that sexual education should continue to include factual information and anatomy so that students take the subject seriously.

During the public comment period, Irene Ericksen, pointing to the negative emotional impacts of sexual experiences on many adolescents, the risks of sexual activity, and the continued development of the brain until the early or mid-20s, raised the issue of whether sexual activity is an advisable behavior for adolescents. Lisa Lauxman pointed out that some risk taking in adolescence has positive effects. For example, taking risks can help develop skill sets that people use throughout life, and this positive effect of risk taking can be missed by an overemphasis on risk reduction.

COMMITTEE ON APPLYING LESSONS OF OPTIMAL ADOLESCENT HEALTH TO IMPROVE BEHAVIORAL OUTCOMES FOR YOUTH: Robert Graham, MD (Chair), Kansas City, MO; Angela Bryan, Center for Neuroscience, Institute of Cognitive Science, University of Colorado Boulder; Tammy Chang, Department of Family Medicine, University of Michigan Medical School; Rosalie Corona, Psychology Department, Virginia Commonwealth University; Tamera Coyne-Beasley, Adolescent Health Center, University of Alabama Birmingham; Bonnie Halpern-Felsher, Department of Pediatrics, Adolescent Medicine, Stanford University; Jeffrey Hutchinson, The Wade Alliance, LLC, Austin, TX; Velma McBride Murry, Department of Human and Organizational Development, Peabody College, Vanderbilt University; Sandra Jo Wilson, Abt Associates, Nashville, TN; Nicole Kahn, Study Director; Richard Adrien, Associate Program Officer; Pamella Atayi, Program Coordinator.

DISCLAIMER: This Proceeding of a Workshop—in Brief was prepared by Steve Olson, rapporteur, as a factual summary of what occurred at the meeting. The statements made are those of the rapporteur or individual meeting participants and do not necessarily represent the views of all meeting participants; the committee; the Board on Children, Youth, and Families; or the National Academies of Sciences, Engineering, and Medicine. The committee was responsible only for organizing the public session, identifying the topics, and choosing speakers.

REVIEWERS: To ensure that it meets institutional standards for quality and objectivity, this Proceedings of a Workshop—in Brief was reviewed by Claire D. Brindis, Philip R. Lee Institute for Health Policy Studies, University of California, San Francisco and Lisa A. Lauxman, Center for International Programs, National Institute of Food and Agriculture, U.S. Department of Agriculture. Kirsten Sampson Snyder, National Academies of Sciences, Engineering, and Medicine, served as review coordinator.

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