Community Preventive Services Task Force

Substance Use: Family-based Interventions to Prevent Substance Use among Youth

Community Preventive Services Task Force
Finding and Rationale Statement
Ratified June 2023

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CPSTF Finding and Rationale Statement

Context

Youth substance use is associated with increased risk for delinquency, academic underachievement, teen pregnancy, sexually transmitted infections, perpetrating or experiencing violence, injuries, and mental health problems (U.S. Department of Health and Human Services 2016). Preventing or delaying substance use initiation among youth (defined in this review as children and adolescents ages 10-17) reduces later risk for substance use, substance use disorders, and overdose (U.S. Department of Health and Human Services 2016).

In 2021, substance use was common among United States (U.S.) high school students and varied by substance. Approximately one-third of students (30%) reported current use of alcohol or marijuana, or prescription opioid misuse (Hoots et al. 2023). In 2022, more than 3 million middle and high school students reported using a commercial tobacco product (Park-Lee et al. 2022) and 11% of 8th graders reported lifetime use of marijuana (Miech et al. 2023).

Substance use trends in the U.S. have changed in recent years. There have been increases in the availability of illicit fentanyl and other synthetic opioids, misuse of prescription drugs, and popularity of e-cigarettes and vaping products, and changes in the legal and regulatory landscape for cannabis (Hoots et al. 2023).

Intervention research highlights parenting as a key protective factor that can be enhanced through skill-based training interventions (Ladis et al. 2019, U.S. Department of Health and Human Services 2016). Interventions designed to strengthen preventive skills and practices among parents and caregivers such as communication, positive relationship interactions, monitoring and control have the potential to protect youth from initiation of substance use and other risk behaviors (Stockings et al. 2016, U.S. Department of Health and Human Services 2016).

Intervention Definition

Family-based interventions provide instruction or training to parents and caregivers to enhance substance use preventive skills and practices for children and adolescents. Interventions include individual or small group sessions, web-based modules, printed instruction manuals and workbooks, or a combination of formats.

Content may address parent-child communication, rule-setting, and monitoring. Interventions may be delivered or supported by health professionals or trained family providers in home, school, or community settings. Interventions may include additional substance use prevention activities for children and adolescents.

CPSTF Finding (June 2023)

The Community Preventive Services Task Force (CPSTF) recommends family-based interventions that train parents and caregivers in preventive skills and practices based on strong evidence of effectiveness in preventing substance use among youth. Evidence indicates that interventions, primarily delivered to families of youth ages 10-14 years, were effective in reducing initiation and use of cannabis, alcohol, tobacco, illicit substances, and misuse of prescription drugs. A subset of studies also found improvements in sexual risk behaviors, mental health symptoms, and school-related outcomes among youth.

The CPSTF finds that economic benefits exceed the cost of family-based interventions to prevent substance use among youth.

Rationale

Basis of Finding

The CPSTF recommendation is based on evidence from a systematic review of 60 studies conducted in the United States.

Studies were identified from a published systematic review (Allen et al. 2016, 39 studies; search period inception through March 2015) and an updated search that added additional search terms to capture vaping and prescription drug misuse (21 studies; search period January 2015 to July 2022).

The systematic review team evaluated substance use measures reported in the included studies for the following outcome categories:

1. Initiation of use for one or more substances (29 studies)
2. Prevalence, amount, or frequency of use for one or more substances (56 studies)

Within each category, the review team considered evidence by type of substances evaluated (e.g., cannabis, prescription drugs, alcohol, tobacco, illicit substances). The review team calculated relative change estimates and overall summary effect measures for the subset of studies providing changes in outcome data for each substance type. For study outcomes that could not be converted into relative change estimates, results for each study were summarized and grouped for a narrative assessment.

CPSTF findings are based on both summary effect estimates and narrative assessments for each outcome category and substance type. Evidence showed family-based interventions lead to reductions in both initiation (Table 1) and use (Table 2) for cannabis, prescription drug misuse, alcohol, tobacco, and illicit substances. Only four studies examined differences in the development of substance use disorders and narrative results were inconsistent (Table 3). A subset of studies included in this review also examined intervention effects on improving sexual risk behavior, mental health, and school-related outcomes (Table 4).

Table 1. Effects of Interventions on Initiation of Substance Use

Substance Type	Relative Change in Initiation of Use (%) Median Study Effect Estimate	Narrative Evidence on Initiation of Use Direction and Reported Statistical Significance of Study Outcomes	Overall Direction of Effect
Cannabis	4 studies (5 estimates): -36.6% (IQI: -52.8% to -17.1%)	1 study significant and favorable	Favors the intervention
Prescription drug misuse	3 studies (5 estimates): -58.1% (IQI: -96.3% to -36.9%)	N/A	Favors the intervention
Alcohol	7 studies (8 estimates): -12.1% (IQI: -17.7% to -7.8%)	3 studies: 1 significant and favorable, 1 study favorable, and 1 study no change	Favors the intervention

Substance Type	Relative Change in Initiation of Use (%) Median Study Effect Estimate	Narrative Evidence on Initiation of Use Direction and Reported Statistical Significance of Study Outcomes	Overall Direction of Effect
Tobacco	7 studies (12 estimates): -12.1% (IQI: -35.5% to 1.7%)	4 studies significant and favorable	Favors the intervention
Illicit Substances*	4 studies: -13.8% (IQI: -28.5 to -0.5)	1 study no change	Favors the intervention
One or more substances including alcohol or tobacco and other illicit substances*	-28.6% 1 study	3 Studies, 4 estimates 2 significant and favorable, 1 favorable and 1 no change (3 studies, 4 estimates)	Favors the intervention
Methamphetamine	N/A	1 study favorable	Favors the intervention

IQI: Interquartile Interval

* Findings from studies that measured self-reported initiation of use of one or more substances selected from a list (for example, "use of one or more illicit drugs such as marijuana, cocaine, amphetamines, methamphetamines, barbiturates, inhalants, opioids, etc.").

Table 2. Effects of Interventions on Substance Use

Outcome	Relative Change in Use (%) Median Study Effect Estimate	Narrative Evidence Direction and Reported Statistical Significance of Study Outcomes	Overall Direction of Effect
Cannabis	13 studies (14 estimates): -39.0% (IQI: -68.4% to +1.6%)	13 studies (14 estimates): 4 significant and favorable, 4 favorable, 5 no change, 1 unfavorable and significant	Favors the intervention
Prescription drug misuse	6 studies: -91.4% (IQI: -100.0% to -31.4%)	2 studies significant and favorable	Favors the intervention
Alcohol	22 studies (23 estimates): -33.8% (IQI: -52.3% to -13.8%)	19 studies (22 estimates): 7 significant and favorable, 4 favorable, 10 no change, 1 unfavorable	Favors the intervention
Tobacco	9 studies: -40.8% (IQI: -50.0% to -17.8%)	9 studies: 4 significant and favorable, 3 favorable, 1 no change, 1 unfavorable	Favors the intervention
Illicit substances*	3 studies: -76.7% (Range: -85.1% to -28.1%)	6 studies: 3 significant and favorable and 3 no change	Favors the intervention
One or more substances including alcohol or tobacco and other illicit substances*	2 studies (3 estimates): -61.8%, (Range: -75.6% to -39.6%)	6 studies (8 estimates): 2 significant and favorable, 2 favorable, 3 no change, and 1 unfavorable	Favors the intervention

Outcome	Relative Change in Use (%) Median Study Effect Estimate	Narrative Evidence Direction and Reported Statistical Significance of Study Outcomes	Overall Direction of Effect
Inhalant	N/A	4 studies: 3 significant and favorable, 1 study (2 arms) both unfavorable	Favors the intervention
Methamphetamine	N/A	4 studies: 3 significant and favorable, 1 no change	Favors the intervention
Cocaine	N/A	2 favorable	Favors the intervention

IQI: Interquartile Interval

* Findings from studies that measured self-reported use of one or more substances selected from a list (for example, "use of one or more illicit drugs such as marijuana, cocaine, amphetamines, methamphetamines, barbiturates, inhalants, opioids, etc.").

Table 3. Effects of Interventions on Substance Use Disorders

Outcome	Number of Studies (Estimates)	Direction and Reported Statistical Significance of Study Outcomes	Overall Direction of Effect
Substance use disorders*	4 (5 estimates)	2 significant and favorable, 1 favorable, 1 no change, and 1 unfavorable	Inconsistent results

*Substance use disorder defined using diagnostic criteria (e.g., Diagnostic Interview Schedule for Children [DISC] predictive) (Lucas et al. 2001)

Table 4. Effects of Interventions on Sexual Risk Behavior, Mental Health, and School-related Outcomes

Outcome	Number of Studies (Estimates)	Direction and Reported Statistical Significance of Study Outcomes	Overall Direction of Effect
Sexual Risk Behavior Outcomes			
Initiation of sexual actvity	5 (13 estimates)	4 significant and favorable, 3 favorable, 3 no change, and 3 unfavorable	Inconsistent results
Condom use	11 (15 estimates)	3 significant and favorable, 5 favorable, 5 no change, 1 unfavorable, and 1 significant and unfavorable	Inconsistent results
Sex under the influence of drugs and alcohol	5 (8 estimates)	6 significant and favorable and 2 no change	Favors the intervention
Number of partners	4 (5 estimates)	4 significant and favorable, 1 favorable	Favors the intervention
Recent intercourse	2 (7 estimates)	3 significant and favorable, 2 favorable and 2 unfavorable	Favors the intervention
Other*	2 (10 estimates)	4 significant and favorable, 5 favorable, and 1 no change	Favors the intervention

Outcome	Number of Studies (Estimates)	Direction and Reported Statistical Significance of Study Outcomes	Overall Direction of Effect
Morbidity associated with sexual risk behaviors	3 (3 estimates)	3 significant and favorable	Favors the intervention
Mental Health Outcomes			
Depression symptoms**	10 (15 estimates)	9 significant and favorable, 3 favorable, and 3 no change	Favors the intervention
Antisocial behavior***	3 (6 estimates)	1 significant and favorable and 5 favorable	Favors the intervention
Diagnosed mental disorders	1 study (2 arms with 2 estimates)	1 significant and favorable and 1 favorable	Favors the intervention
Symptoms of impairment	1 study (2 arms with 2 estimates)	2 significant and favorable	Favors the intervention
School-related Outcomes			
School disciplinary actions****	5 (10 estimates)	5 significant and favorable, 3 favorable, 1 no change and 1 unfavorable	Favors the intervention
School suspension	3 (6 estimates)	3 significant and favorable, 1 favorable, 1 no change, and 1 unfavorable	Favors the intervention
Grade Point Average (GPA)	3 (3 estimates)	3 significant and favorable	Favors the intervention

*Other: intercourse frequency, pregnancy, birth control, partner notification, etc.

**Depression Symptoms: Most studies used a survey tool to assess depression symptoms

***Antisocial Behavior: includes conduct problems

****School disciplinary actions: typically included combined or singular reporting for school attendance, engagement, suspension, truancy, dropout status

Eight studies (9 estimates) examined differences in recent or concurrent use of more than one substance (polysubstance use) and showed inconsistent results (5 favorable and significant, 1 favorable, and 3 no change). Seven studies evaluated additional measures of alcohol use. Six studies (7 estimates) examined differences in binge or heavy drinking and found inconsistent results (3 favorable, 1 no change, 1 significant and unfavorable, 2 unfavorable). The remaining study found no change in self-reported past year driving after drinking.

Studies had a median of 346 participants and included fewer than 100 participants (6 studies), 100 to 500 participants (31 studies), 501 to 2,000 participants (18 studies) or more than 2000 participants (4 studies). One study did not report the number of participants. The median duration of intervention activities was 2.2 months, with interventions delivered over 3 months or less (38 studies), 4 to 6 months (3 studies), 7-12 months (3 studies), or greater than 12 months (6 studies); 10 studies did not report on intervention duration. The median duration of follow-up for study outcomes, defined as the last time point after baseline assessment, was 24 months with studies conducted for 12 months or less (18 studies), 12.1 to 24 months (11 studies), 24.1 to 48 months (12 studies), or more than 48 months (16 studies). Three studies did not report the duration of follow-up.

Applicability and Generalizability Considerations

Intervention Settings

The CPSTF finding is applicable to the use of interventions in community, school, and home settings in urban, suburban, and rural communities in the United States. Included studies were all conducted in the United States (60 studies). Almost half of the study interventions were implemented in urban or suburban areas (25 studies) with remaining studies conducted in rural communities (12 studies) or a mix of communities (6 studies); 17 studies did not report this information. Interventions were delivered in community (12 studies), home (10 studies) and school (6 studies) settings, or in multiple locations (29 studies). Evidence of effectiveness was similar across all settings and locations. Only one study evaluated effectiveness of family-based interventions when implemented in Indian Country.

Population Characteristics

The CPSTF finding is applicable to families of school-age children and adolescents (ages 10-14 years at the time of intervention) in the United States.

Information on demographic characteristics primarily focused on youth whose parents and caregivers participated in the study. The median age of study youth was 12.7 years (49 studies) and gender distribution was equal (56 studies). Interventions were delivered to parents and caregivers of youth in grades 6-8 (44 studies), grades 9-12 (12 studies), and a mix of grades (4 studies). Interventions were effective when delivered to families of youth in grades 6-8 (ages 11-14). Evidence of effectiveness was inconsistent for interventions delivered to families of youth ages 15 years or older, indicating a concern about applicability to older youth and a need for additional studies.

Study youth identified as White (median 64%; 31 studies), Black or African American (median 40.8%; 32 studies; 8 studies reporting 100%), Hispanic or Latino (31.0%, 34 studies; 13 studies reporting 100%), Asian (4.8%, 11 studies; 1 study reporting 100%) American Indian (2.4%, 7 studies; 1 study reporting 100%), or other (8.0%, 19 studies).

Based on studies focused on specific populations, interventions were effective for youth who identified as Black or African American and Hispanic or Latino. Few studies provided focused or stratified evidence on effectiveness for youth who identified as American Indian, Alaskan Native, Native Hawaiian, Pacific Islander, or Asian. Although overall evidence indicates effectiveness in a wide range of communities, additional studies are needed to determine the content and effectiveness of family-based interventions in these populations. None of the included studies evaluated effectiveness of interventions for families of youth who identify as a sexual or gender minority.

Demographic information on recruited parents and caregivers was frequently incomplete and limited specific conclusions on applicability. Only 27 (45%) studies provided ages for parents and caregivers (median 40.4 years).

Twenty-one studies identified parents' and caregivers' gender and reported participants were primarily female (median 87.1%). Twenty-three studies measured parent status in the home and reported a median of 60.3% had two-parent households and 39.7% had one-parent households.

Studies infrequently reported parents' and caregivers' race and ethnicity. Participants identified as White (median 84%, 10 studies), Black or African American (median 39.6%, 12 studies), Hispanic or Latino (74.2%, 15 studies), Asian (range: 0.01% to 0.8 %; 4 studies), or other (4.3%, 5 studies). Studies did not stratify outcomes by parents' race or ethnicity.

Household income was reported in only 19 (32%) studies. In the 11 studies that reported parents' and caregivers' annual household income, 55.7% had a median or mean total income of less than $35,000 per year. Five studies reported a median income of $1,655 per month. Three studies reported a mean total income of less than $35,000 per year, with a

median of $21,681). None of these studies examined intervention effectiveness based on household income. Twenty-two studies from communities identified as lower income reported interventions were generally effective, although results were smaller in magnitude.

Intervention Characteristics

The CPSTF finding is applicable to interventions delivered in multiple sessions or modules in group or individual sessions led by trained implementers or through printed, web, or digital modules.

Studies primarily evaluated interventions delivered face-to-face in group settings (27 studies), individual settings (3 studies), or both (16 studies).

In 13 studies, intervention content was delivered primarily through printed workbooks, websites, or digital modules with 4 of these studies also including some interpersonal contact through periodic telephone calls.

The median number of sessions (or modules) for participants was 8, the median number of hours per session or module was 1.7, and the median number of total hours for the intervention was 15.5. Evidence of effectiveness was similar across these characteristics.

Most interventions included content for both adults and youth (54 studies). Evidence of effectiveness for interventions focused entirely on parents and caregivers (6 studies) was inconsistent, indicating a need for additional studies.

Most studies described training of implementers to deliver the intervention and lead family sessions. Few studies described implementers' background experience providing family-based interventions especially for implementers recruited from the community (e.g., health educator, peer parents; 21 studies) and from school staff (e.g., teachers, counselors, other paraprofessionals; 9 studies). In seven studies, implementers from the community were supported by family therapy professionals (3 studies), or research staff (4 studies). Some interventions were delivered by health professionals (e.g., nurse, psychologist; 9 studies) or by research staff (8 studies). Overall, interventions were generally effective across the range of described implementers.

Data Quality Issues

Study designs used to evaluate family-based interventions were restricted to randomized controlled trials (60 studies) in this review. Study quality was assessed using Cochrane risk of bias tools (Higgins et al. 2011). No studies were excluded from assessment of effectiveness based on risk of bias evaluations. Limitations commonly identified included high or unclear risk of bias from randomization procedures, absent or incomplete blinding of participants, personnel, and outcomes assessors, and incomplete or selective reporting of outcomes.

Interventions evaluated families recruited to participate in the intervention. Families interested in training on parenting skills and practices might differ from the general population of families at risk for youth substance use. Outcomes were based primarily on self-reported substance use and other risk behaviors among participating youth which introduced potential bias in these measures.

Important demographic characteristics were infrequently reported for participating parents and caregivers (e.g., income, education) which limited stratified assessments on effectiveness for these factors. In addition, studies differed in the substances and risk behavior outcomes considered, the measures used to evaluate change, and the reporting of results. These issues limited the review teams' ability to compare study findings, consolidate effect estimates, and calculate summary effect estimates for the outcomes of interest.

Indigenous Knowledge [https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf] was not explicitly incorporated within this systematic review. Only one study incorporated elements of indigenous knowledge in intervention development and evaluation on tribal lands (Tingey et al. 2021).

Potential Benefits

Studies included in the review described several additional benefits of family-based interventions. Parents and caregivers reported improvements in family life and behaviors towards other members of the family (Dembo et al. 2002, Riesch et al. 2012), enhanced social connections through group activities (Martinez et al. 2005), and greater awareness of their child's activities, such as school assignments (Martinez et al. 2022). Two studies reported reductions in self-reported alcohol use by parents and caregivers (Williams et al. 2015, Schinke et al. 2009). None of the studies evaluated intervention effects on reducing stress and anxiety among parents and caregivers.

Potential Harms

CPSTF did not postulate any potential harms of family-based interventions to prevent substance use among youth. One included study postulated that aggregating high-risk youth into groups could increase substance use and behavior problems (Dishion et al. 1995). No harms were identified in the broader literature.

Economic Evidence

The economic evidence shows benefits exceed the cost for family-based interventions to prevent substance use among youth.

The search of literature covered the period from inception of databases through October 2023. The economic review included 11 peer-reviewed studies and two government reports, one from the Washington State Institute for Public Policy (WSIPP) and the other from the Substance Abuse and Mental Health Services Administration (SAMHSA 2008). Fourteen programs evaluated by WSIPP and eight programs evaluated in SAMHSA 2008 were included in the economic review. All monetary values are in 2023 U.S. dollars.

Peer-reviewed studies were conducted in the United States (10 studies) and United Kingdom (1 study). All programs evaluated by WSIPP were modeled for the state of Washington and those in SAMHSA 2008 were modeled for the United States. The CPSTF considered the peer-reviewed studies, WSIPP, and SAMHSA 2008 as separate sources of evidence, and as such the estimates from these sources are not combined in the economic review. The peer-reviewed studies provided 14 intervention cost, four benefit, one cost-effectiveness, and five cost-benefit estimates. WSIPP provided 14 estimates for intervention cost, intervention benefit, and cost-benefit. SAMHSA 2008 provided eight estimates for intervention cost, intervention benefit, cost-benefit, and cost per quality-adjusted life year (QALY) gained. Seven of the eight programs evaluated in SAMHSA 2008 were also evaluated by WSIPP.

The interventions were delivered when children in the families were in transition from elementary to middle school (15.6%), in middle school (59.4%), in transition from middle to high school (15.6%), or in high school (9.3%). Alcohol appeared most frequently among the substances of focus for interventions in peer reviewed studies (83.8%), among WSIPP programs (100%), and SAMHSA 2008 programs (100%). This was followed by tobacco: peer-reviewed studies (26.7%), WSIPP (71.4%), SAMHSA 2008 (75.0%), and by cannabis: peer-reviewed studies (51.4%), WSIPP (71.4%), SAMHSA 2008 (62.5%).

The economic review assessed the quality of estimates based on how well the estimates captured the main drivers of costs and benefits and the appropriateness of methods used in their estimation. Drivers of intervention cost were

deemed to be staff wages, staff training, and compensation for parent or caregiver time. Drivers of intervention benefit were averted costs or losses from:

- Healthcare
- injury, death, or property loss
- justice system
- education, and productivity

Quality was assessed as good, fair, or limited, and limited quality estimates were removed from the review. An estimate for benefit and an estimate for cost-benefit from one peer-reviewed study were excluded from the review because they were of limited quality for the purpose of this review.

Intervention Cost

Peer-reviewed studies

- Median per family $1,672 (IQI: $1,279 to $2,322), 6 estimates from 5 studies
- Median per participant or youth $753 (IQI: $569 to $1,316), 7 estimates from 4 studies
- Compensation per family for participation time $812 (McCollister et al. 2014)

WSIPP

- Median per family $655 (IQI: $241 to $808), 5 programs
- Median per participant or youth $680 (IQI: $119 to $888), 9 programs

SAMHSA 2008

- Mean per family $988 (Min $271, Max $1,490), 3 programs
- Median per participant or youth $677 (IQI: $677 to $2,032), 5 programs

The most frequently assessed limitations for intervention cost estimates (17 good quality and 19 fair quality out of 36 estimates) were missing cost of compensation for parent or caregiver time and inadequate reporting in SAMHSA 2008.

Intervention Benefit

Peer-reviewed

- $11,336 per case of averted misuse of opioids (Crowley et al. 2014)
- $147,412 per case of averted methamphetamine use (Guyll et al. 2011)
- $6,064 per youth lifetime benefits from averted tobacco, alcohol, and delinquency (Kuklinski et al. 2015)
- $259,818 lifetime cost averted per case of alcohol disorder (Spoth et al. 2002)

WSIPP

- Median per family $2,211 (IQI: $2,022 to $2,372), 5 programs
- Median per participant or youth $2,510 (IQI: $366 to $3,994), 9 programs

SAMHSA 2008

- Mean per family $9,767 (Min $4,234, Max $16,937), 3 programs
- Median per participant or youth $8,299 (IQI: $6,944 to $11,687), 5 programs

The most frequently assessed limitations for intervention benefit estimates were lack of information about uncertainty of estimates and inadequate reporting in SAMHSA 2008, though all 26 estimates of intervention benefit were of good quality.

Cost-Effectiveness

Peer-reviewed

- Dominated (not cost-effective) – reduced QALY and higher cost compared to control (Segrott et al. 2022)

SAMHSA 2008

- Cost-saving for four programs
- Median $21,426 per QALY gained (IQI: $14,058 to $92,308), 4 programs

The cost-effectiveness estimates from SAMHSA 2008 indicate the intervention is cost-effective based on a conservative benchmark of $50,000 per QALY gained. However, the CPSTF chose not to issue a cost-effectiveness finding based on the SAMHSA 2008 report because:

- All the favorable estimates were from a single report and model
- Data used for evaluation were ≥ 15 years old

The most frequently assessed limitations for the cost-effectiveness estimates (2 good quality and 7 fair quality out of 9 estimates) were lack of information on uncertainty of the estimates and inadequate reporting in estimates from SAMHSA 2008.

Cost-Benefit

Peer-reviewed

- Median benefit to cost ratio 5.8 (IQI: 3.8 to 8.1), 5 estimates from 3 studies

WSIPP

- Median benefit to cost ratio 3.9 (IQI: 1.6 to 8.4), 14 programs

SAMHSA 2008

- Median benefit to cost ratio 8.9 (IQI: 3.9 to 12.5), 8 programs

Of the 27 cost-benefit estimates, 13 were of good quality and 14 were of fair quality.

The systematic economic review finds economic benefits exceed the cost for family-based interventions to prevent substance use among youth.

Considerations for Implementation

The following considerations for implementation are drawn from studies included in the existing evidence review, the broader literature, and expert opinion, as noted below.

Studies used several strategies to increase family recruitment and retention. These included community engagement to tailor intervention content and recruitment (Allen et al. 2017, Hadley et al. 2016) and enhanced social and peer support through group meals, babysitting services for families with younger children, and ongoing telephone contact (Martinez et al. 2022). Studies broadly defined and encouraged participation of families, parents, and caregivers and further worked to engage fathers and male caregivers and involve both parents, regardless of marital status (Chaplin et al.

2021). The National Center on Substance Abuse and Child Welfare [https://ncsacw.acf.hhs.gov/topics/family-centered-approach/fca-modules.aspx] offers additional guidance on family-centered approaches that incorporate a broad definition of families and caregivers.

A subset of studies (Fang et al. 2010, Mason et al. 2021, O'Donnell et al. 2010, Schinke et al. 2004, Schinke et al. 2009a, Schinke et al. 2009b, Schinke et al. 2009c, Schinke et al 2011, Scull et al. 2017) included in this review found less-intensive remote interventions were effective. Interventions used printed materials or web and digital modules that were developed using content from group sessions. Some of the interventions also included telephone calls from program staff. It was noted that web-based and digital interventions require internet access and equipment which could be a barrier to participation (Estrada et al. 2019, Fang et al. 2020).

None of the included studies addressed the increasing influence of social media on youth (U.S. Department of Health and Human Services 2023). Messages promoting substance use are commonly posted on social media (Rutherford et al. 2023) making this an important subject for parent communication and monitoring skills and practices. Future interventions may also want to use social media to promote prevention messaging (Evans et al. 2020).

CPSTF recommends person-to-person interventions intended to modify adolescents' risk behaviors by improving caregivers' parenting skills [https://www.thecommunityguide.org/media/pdf/Adolescent-Health-Person-to-Person.pdf]. A 2007 review of 12 studies found sufficient evidence that person-to-person interventions to improve parenting skills were effective in reducing a range of adolescent risk behaviors including sexual risk behaviors and alcohol, tobacco, and other drug use, and violence, delinquency, suicide, and self-harm (Burrus et al. 2012).

CPSTF also recommends intervention approaches related to the following:

- Preventing Excessive Alcohol Use [https://thecommunityguide.org/topics/excessive-alcohol-consumption.html]
- Reducing Tobacco Use [https://thecommunityguide.org/topics/tobacco.html]

Several organizations offer implementation guidance for family-based prevention strategies and interventions to address substance use.

University of Colorado, Blueprints for Healthy Youth Development [https://www.blueprintsprograms.org/] is a registry of scientifically rigorous and accessible prevention and intervention programs aimed at addressing youth health and behavior issues.

Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) Model Programs Guide [https://ojjdp.ojp.gov/model-programs-guide/all-mpg-programs] offers a database of evidence-based juvenile justice and youth prevention, intervention, and reentry programs that cover issues including substance abuse, mental health, and trauma.

California Evidence-Based Clearinghouse [https://www.cebc4cw.org/program/] is a registry tool that can help organizations identify, select, and implement interventions for children and families affected by the child welfare system.

Prevention Technology Transfer Center (PTTC) Network [https://pttcnetwork.org/centers/global-pttc/products-and-resources] provides technical assistance resources to improve implementation and delivery of effective substance abuse prevention interventions.

SAMHSA's National Youth Substance Use Prevention Campaign [https://www.samhsa.gov/talk-they-hear-you] provides resources for parents and caregivers, educators, and community members to prevent substance use.

The following resources address issues that may be useful for implementing these interventions for specific communities:

Tribal families

- Tribal Training and Technical Assistance Center | SAMHSA [https://www.samhsa.gov/tribal-ttac]
- Tribal Youth Resource Center - Resource Library [https://www.tribalyouth.org/resources/resource-library/?_sft_resource_issues=evidence-based-practices,intervention,prevention,substance-misuse]

Military families

- Clearinghouse Continuum of Evidence (Continuum) [https://www.continuum.militaryfamilies.psu.edu/]

Foster families

- Title IV-E Prevention Services Clearinghouse [https://preventionservices.abtsites.com/]

The following resources address specific substance use issues:

- Preventing Marijuana Use Among Youth | samhsa.gov [https://store.samhsa.gov/sites/default/files/pep21-06-01-001.pdf]
- Opioid Prevention Programs & Tools | HHS.gov [https://www.hhs.gov/opioids/prevention/prevention-programs-tools/index.html]
- E-Cigarette Resources | American Lung Association [https://www.lung.org/quit-smoking/e-cigarettes-vaping/e-cigarette-resources]
- Reducing Vaping Among Youth and Young Adults | samhsa.gov [https://store.samhsa.gov/sites/default/files/pep20-06-01-003.pdf]
- Tobacco Prevention Program Resources | ncdhhs.gov [https://tobaccopreventionandcontrol.dph.ncdhhs.gov/youth/Documents/TobaccoPreventionCessationProgramResources-for-YoungPeople.pdf]
- Stop Alcohol Abuse Resources (Communities Talk Meetings) | stopalcoholabuse.gov [https://www.stopalcoholabuse.gov/communitiestalk/tips-resources/]

Evidence Gaps

CPSTF identified several areas that have limited information. Additional research and evaluation could help answer the following questions and fill remaining gaps in the evidence base.

CPSTF identified the following questions as priorities for research and evaluation:

- How effective are interventions for families of American Indian, Alaskan Native, Native Hawaiian, Pacific Islander, and Asian youth?
- How effective are interventions for families of youth who identify as a sexual or gender minority?
- How effective are interventions in reducing development of substance use disorders?

- How effective are interventions for families of adolescents ages 15 years and older?

Remaining questions for research and evaluation identified in this review include the following:

- How effective are interventions in reducing vaping initiation and use?
- How effective are interventions in reducing polysubstance use among youth?
- How effective are interventions when focused just on parents and caregivers?
- Does intervention effectiveness differ by household income or parents' and caregivers' educational attainment or race/ethnicity?
- Does intervention effectiveness differ based on characteristics of implementers recruited from the community or schools?
- How can interventions improve recruitment and retention of fathers and male caregivers?

Economic Evidence Gaps

The following question is proposed as a priority for economic research and evaluation:

- What are economic outcomes for programs implemented for historically disadvantaged populations, particularly American Indian or Alaska Native populations?

Remaining question for research and evaluation identified in the economic review includes the following:

- What are the economic outcomes in urban areas?
- Is the intervention cost-effective based on more recent data?

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