

**Early Intervention Services for Adolescents and
Transitional-Aged Youth at Risk
of Substance Use Disorders:
Principles, Promising Practices, and Evidence-Based
Models and Programs**

Literature Review

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Literature Review

The Need for Early Intervention for Adolescents and Transitional-Aged Youth

Adolescence is a period of life that is defined in various ways by researchers, pediatricians, and theorists by both age and the start of puberty. For example, the Canadian Paediatric Society (2003) defines adolescence as starting “with the onset of physiologically normal puberty, and ends when an adult identity and behavior are accepted. This period of development corresponds roughly to the period between the ages of 10 and 19 years....” Other researchers define adolescence as spanning the ages of 10 to 24 years to align with evolving knowledge of brain development and with the lowering age of puberty and delayed timing of transitions to adult roles seen over the last century (Sawyer et al. 2018). The World Health Organization (2020) notes that adolescence cannot solely be defined by age and that youth mature physically at faster rates than they mature psychologically. Regardless of the differences in these definitions, practice guidelines that define adolescence must take into account the fact that youth mature at different rates and must consider the emotional and physical development of the youth in gauging if services designed for adolescents are appropriate.

Transitional-aged youth are typically defined as youth and young adults from 18 to 25 years of age who are navigating the transition from adolescence to adulthood. The characteristics of this developmental stage include identity exploration, instability, self-focus, transition, and optimism (Baer & Peterson, 2002).

A natural part of adolescence and the transition to adulthood is experimentation and risk taking, including experimentation with drugs and alcohol (American Psychological Association, 2002). Substance use during these periods can have long-lasting health consequences. Early substance use interferes with neurodevelopment and induces neurobiological changes that further increase the risk for substance use disorders (Jordan & Andersen, 2017; Levy, 2018). Studies show that the majority of those who meet the criteria for a substance use disorder in their lifetime started using substances during adolescence and met the criteria for a disorder by ages 25. For

example, almost four out of five adults with an alcohol use disorder report that they started drinking during adolescence (Hadland et al., 2019).

Because the adolescent and transitional-aged youth brain is not fully developed, these populations may underestimate risk-taking behavior (Sawyer et al., 2018). Further, stress and trauma in youth increase the risks of substance misuse (Paulus et al., 2019). Given that these periods in life are crucial to stopping or slowing the progression of substance use problems, there is a need for developmentally appropriate early intervention strategies for adolescents and transitional-aged youth (U.S. Department of Health and Human Services, Office of the Surgeon General, 2016; World Health Organization, 2020).

Early Intervention: Defined

Early intervention is not well-defined in the literature. According to the American Society of Addiction Medicine (ASAM), early intervention is a level of care for adolescents and adults at risk for developing a substance use disorder, but a disorder is not yet diagnosable. Early intervention services (ASAM level 0.5) include assessment; education; Screening, Brief Intervention, and Referral to Treatment (SBIRT); and other brief interventions aimed at reducing or preventing misuse (ASAM, 2015).

Other definitions of early intervention focus more closely on reducing the harm of behavioral sequelae of substance use (Stockings et al., 2016). Early intervention services are also described as designed to decrease high-risk substance use or risk factors that appear to be related to substance use and prevent the development of substance-related problems. These services strive to increase perceived personal risk related to high-risk substance use and other high-risk activities related to substance use. They may involve education, skills training, and counseling for the individual and their family members (Beadnell et al., 2016). In order to facilitate a coherent agenda for research and services on early intervention for adolescents and transitional-aged youth at risk of substance use disorders, a clear definition of what constitutes early intervention for substance use disorders is needed.

Specific Populations at Risk

This literature review explores the risks experienced by several vulnerable populations among adolescents and transitional-aged youth, to better understand the needs of these populations and the issues impacting their substance use. These populations include racial and ethnic minority youth, LGBTQ (lesbian, gay, bisexual, transgender, or questioning) youth, “opportunity youth,” and youth who experience homelessness. These populations face common risk factors, including exposure to

stress, trauma, violence, family/peer substance use, discrimination, and, in many cases, challenges with positive social connections. These factors put these vulnerable adolescents and transitional-aged youth at an increased risk for the development of substance use disorders. While there are some studies of interventions targeted to opportunity youth and homeless youth, studies of interventions targeted to racial and ethnic minorities and LGBTQ youth are lacking.

Racial and Ethnic Minority Youth: Elkington et al. (2010) examined the effect of microsystems, such as family and peer networks, on sexual behavior and substance use among 850 African American youth over a 4-year period, beginning in grade 9. Family cohesion, involvement with the youth's life, and support were associated with decreased substance use among the youth. Additionally, peer norms influenced their attitudes toward substance use. Family and peer risk factors, such as substance use, were significantly associated with increased substance use by youths as they aged.

The trajectory of substance use varies by racial and ethnic groups as noted in data from the National Longitudinal Study of Adolescent Health (Martineau & Cook, 2017). This finding suggests the need for targeted intervention strategies for different racial and ethnic minority groups (Chen & Jacobson, 2012). For example, Hispanic adolescents reported relatively higher rates of substance use early in adolescence compared with other racial and ethnic groups, and African Americans reported lower alcohol use through early adulthood when compared with Whites (Chen & Jacobson, 2012). Minority youth who experience dating violence are at an increased risk of substance use at an earlier age than youth who do not experience dating violence (Lormand et al., 2013). Paulus et al. (2019) suggested that emotional dysregulation due to symptoms of posttraumatic stress disorder increases the risk for substance misuse in Latinx adolescent females.

LGBTQ Youth: LGBTQ youth are at a higher risk for substance use, when compared with their heterosexual counterparts (Huebner et al., 2015; Stevens, 2012). However, research on substance use services for LGBTQ adolescents and transitional-aged youth is lacking. Adolescence is a time of sexual questioning and emergence of sexual orientation. Bullying and discrimination and other sources of trauma directed toward young people who identify as LGBTQ create risks for substance misuse (Johns, Lowry, et al., 2018).

In a qualitative study of 68 LGBTQ youth ages 14–24, study participants identified peer networks and LGBTQ community organizations as positive supports (Higa et al., 2014). However, access to LGBTQ organizations was noted as a problem in rural areas and for youth of color and transitional-aged youth. Other protective factors include problem-solving skills, use of social media for support, self-advocacy skills, and strong family ties (Johns, Beltran, et al., 2018).

Opportunity Youth: There are increasing numbers of youth ages 16–24 who are neither enrolled in school nor gainfully employed. These individuals are known as “opportunity youth.” The number of opportunity youth in the United States is growing, with one in nine 16- to 24-year-old individuals without work or educational connection, leaving them at risk of social disconnection, lack of economic opportunity, and substance use (The Aspen Institute Forum for Community Solutions. Native American and African American youth are at the highest risk of disconnection from social supports (University of Pennsylvania, The Center for High Impact Philanthropy 2019), which can increase the risk of substance use. Youth who drop out of school are more likely to use substances than those who stay in school (Tice et al., 2017). Youth in foster care and those raised in neighborhoods with little economic opportunity are more likely to have experienced trauma. People who have experienced physical or emotional trauma are more likely to develop substance use disorders and to have worse treatment outcomes than those who have not experienced trauma (Moustafa et al., 2018). Thus, opportunity youth are at a high risk of developing substance use disorders.

Connecting opportunity youth to social supports can serve as a protective factor for substance use. Data from the National Survey of Child and Adolescent Well-Being show that support from a caring adult can serve as a protective factor for substance use in child welfare-involved youth (Brown & Shillington, 2017).

Youth Who Experience Homelessness: Adolescents who experience homelessness are at an increased risk of illicit drug use (Zhao et al., 2018) due to experiences of trauma, lack of social supports, and increased exposure to drugs. Adolescents and transitional-aged youth who are without housing also become disconnected from normative social structures, opportunities, and supports, increasing their risk factors for substance use and other harms (Coren et al., 2016). Good problem-solving, planning, and coping skills are protective factors for substance use for youth without housing (Lightfoot et al., 2011).

Evidence-Based Early Intervention Practices

Screening, Brief Intervention, and Referral to Treatment

SBIRT is an evidence-based early intervention model focused on the identification of adults and adolescents with problematic patterns of substance use through the use of a validated screening tool in primary care, emergency departments (EDs), and other settings. When indicated, screening is followed by a brief intervention, which consists of education and feedback on substance use that is focused on motivation and behavior change (Abt Associates and Conrad N. Hilton Foundation, 2018). Individuals believed to exhibit signs of a substance use disorder are referred for a clinical assessment to determine a diagnosis and an appropriate level of care.

The findings on the effectiveness of SBIRT for adolescents and transitional-aged youth are mixed, primarily because of the lack of high-quality studies on SBIRT for these populations. In their review of 13 randomized trials of SBIRT used in multiple settings for adolescents with alcohol and drug misuse, Mitchell et al. (2013) concluded that there was insufficient evidence to support the effectiveness of the SBIRT

components for adolescents. The authors did conclude that there was strong evidence for using the CRAFFT as a screening tool.

In a study of SBIRT for 629 adolescents in 13 New Mexico schools, Mitchell et al. (2012) studied substance use in adolescents who received SBIRT. Brief intervention was provided in schools by master's-level clinicians who had received additional training. The outcomes measured at baseline and 6-month follow-up included past-month days drinking, times intoxicated, and drug use. Brief intervention was provided to 85.1% of students, and 14.9% received brief treatment or referral to treatment. For both interventions, participants reported a significant decrease at the 6-month follow-up report of times intoxicated ($p < .05$) and drug use ($p < .001$), but there was no change in frequency of drinking.

Ozechowski et al. (2016) noted weaknesses while using SBIRT for adolescents and proposed modifications referred to as SBIRT-A. Their suggested adaptations to SBIRT included:

- involving caregivers to gather information on substance use and risk behaviors through a screening tool separate from the CRAFFT;
- using electronic screening tools at primary care check-in, with the screen directly integrated into the electronic health record;
- using risk algorithms to assist physicians in choosing the correct brief intervention;
- using computer-hosted interventions to reduce physician burden;
- including psychoeducation with adolescents and caregivers;
- developing a trusting relationship with the adolescent and caregiver in the referral process; and
- developing processes to track referrals.

The authors noted the challenges of working with older adolescents and transitional-aged youth who do not have caregivers present during appointments. Sterling et al. (2018) studied a three-arm pragmatic trial of SBIRT compared with usual care in pediatric primary care. Fifty-two pediatricians were randomized to (1) delivery by only SBIRT trained pediatricians; (2) brief intervention by pediatricians trained to assess and refer eligible adolescents to an embedded behavioral clinician (BC) able to administer SBIRT; or (3) usual care. A total of 5,183 adolescents were screened by the 52 randomized pediatricians; the data were collected in the clinic's electronic health record. These patients were screened at well-child visits using the Teen Well Check Questionnaire (TWCQ). Adolescents who endorsed the substance use and depression questions on the TWCQ ($n = 1,871$) were further assessed by pediatricians in the first arm using the CRAFFT.

During 6-month and 12-month follow-up, 648 adolescents, previously assessed using the CRAFFT, were rescreened for substance use using the TWCQ (Sterling et al., 2018). No difference was found between the three arms in self-reported substance use at follow-up. Brief intervention and referral rates were higher in the intervention arms compared with usual care (Sterling et al., 2015). Specifically, the likelihood of brief intervention was 10.37 times higher (95% confidence interval [CI], 5.45-19.74; $p < .001$) in the pediatrician-only arm and 18.09 times higher in the behavioral health clinician arm (95% CI, 9.69-33.77; $p < .001$) compared with usual care. Further, adolescents who received SBIRT had fewer outpatient visits 3 years post-intervention ($p < .05$) and were 64% less likely to have a substance use disorder diagnosis (OR = .64; 95% CI = .45-.91) (Sterling et al., 2019). Using data from the same study, Sterling et al. (2017) examined referrals and engagement in treatment ($n = 333$). Adolescents who were referred to specialty substance use disorder treatment or psychiatry through the co-located behavioral health clinician arm were four times more likely to actually engage in treatment, compared with those in the pediatrician-only intervention arm (OR = 3.99, 95% CI, 1.99-8.00). These findings show the promise of the SBIRT model in primary care and provide further knowledge about the referral to treatment component, which has been the least successful component of the model.

Screening and/or Brief Intervention

Arnaud et al. (2016) conducted a randomized controlled trial of the automated web-based brief intervention WISEteens (see <https://www.facebook.com/WISEteens.EU/>) that was implemented in Sweden, Germany, Belgium, and the Czech Republic for 1,449 adolescents, ages 16–18, who screened positive for substance misuse on the CRAFFT. The intervention was based on motivational interviewing techniques and integrated graphics and videos. Intervention content was individually tailored based on adolescents' self-report of substance use, gender, weight, and perceptions of normative drinking. The web-based tool provided education on the risks of alcohol and drug use, feedback on drinking, tools for adolescents to assess their personal strengths, and information on risks associated with substance use. Self-reported past-30-day substance use was collected at baseline and 3-month follow-up. Although drug use was not significantly different between the treatment and control groups at follow-up, binge drinking and frequency of alcohol use was significantly lower in the treatment group, compared with the control group. At follow-up, adolescents receiving the intervention reported significantly less past-30-day alcohol use, compared with those in the control group (expectation maximization sample $p = .02$). Secondary analyses revealed a significant effect on drinking frequency ($p = .04$) and frequency of binge drinking ($p = .04$) and drinking quantity ($p = .02$). There were no significant differences in reported past-30-day use of illicit drug and polysubstance use between the treatment and control groups.

Cunningham et al. (2015) conducted a randomized trial of brief intervention for 836 adolescents and transitional-aged youth, ages 14–20, who presented to an ED because of their alcohol use. This brief intervention was provided by either a therapist or a computer. Three months post-intervention, people were randomized to a post-ED session versus control condition. Both face-to-face and computer-based brief interventions were associated with decreased substance use at 3-month follow-up. Outcomes for drinking at 12-month follow-up were not significant. However, the intervention was significantly associated with decreased consequences of alcohol use (computer, $p = .02$; therapist, $p = .03$). The post-ED session was not significantly associated with drinking or consequences at 3- or 12-month follow-up.

In a systematic review of six brief intervention trials with a total of 1,176 adolescents, Carney et al. (2016) found low- to mid-quality evidence for the effectiveness of school-based brief interventions to address adolescent substance use. Three studies compared brief intervention with the provision of information in schools, and the other three studies compared brief intervention with assessment only. Studies reviewed included a focus on alcohol and cannabis use. The authors concluded that there was a need for more rigorously designed studies before they could make conclusions about the effectiveness of school-based brief interventions.

Walton et al. (2013) conducted a three-arm randomized controlled brief intervention trial for 328 adolescents ages 12–18 who used cannabis. During this trial, adolescents in the control group were compared with adolescents who received brief intervention provided by a therapist and adolescents who received a computer-based interactive brief intervention. The computer-based intervention used audio feedback and animation to assist participants through the program. The primary outcomes of interest in this study were cannabis use and consequences; the secondary outcomes of interest were alcohol use, drug use other than cannabis, and driving under the influence of cannabis. Neither the therapist-based nor computer-based brief intervention was associated with a reduction in cannabis use. However, the therapist-based brief intervention resulted in significantly reduced frequency of driving under the influence of cannabis ($p \leq .05$). The computer-based intervention was associated with a decrease in other cannabis-related consequences ($p \leq .01$) and other drug use ($p \leq .05$). These intervention effects decreased over time. The authors suggested that additional periodic brief intervention may be needed to support continued reduction in drug and alcohol use.

Motivational Interviewing and Brief Motivational Interventions

Motivational interviewing and brief motivational interventions have shown promising results as an early intervention practice for adolescents. In a systematic review of motivational interviewing interventions for adolescent substance users, 26 of 39 studies showed a statistically significant reduction in adolescent substance use

(Barnett et al., 2012; D’Amico et al., 2013) conducted a randomized controlled trial of a six-session group motivational interviewing intervention called Free Talk (see <https://groupmiforteens.org/programs/freetalk>) versus usual care for 193 adolescents ages 14–18 that had been referred to Teen Court for a first-time alcohol or marijuana offense. For past-month alcohol and marijuana use, both the intervention and usual care groups either maintained or slightly reduced substance use. Among youth who completed all six sessions, 1 in 4 youth in the usual care group had committed another offense (28%) whereas less than 1 in 5 (19%) in the Free Talk group committed an offense ($p = .157$).

Brown et al., (2015) studied the effect of motivational interviewing on substance use among adolescents with psychiatric comorbidities. In this study, 151 psychiatrically hospitalized adolescents ages 13–17, with comorbid psychiatric and substance use disorders, were randomized to motivational interviewing versus treatment as usual groups. Results showed that adolescents in the motivational interviewing group abstained from use of

substances for a longer period of time following hospital discharge relative to the treatment as usual group (36 days vs. 11 days).

Adolescents who received motivational interviewing also reported less total use of substances during the first 6 months postdischarge, although this effect was not significant across 12 months.

Prime for Life is a manualized, structured, and group-based indicated prevention program. It is based on motivational enhancement theory and is focused on reducing future risk of alcohol use–related harms. Beadnell et al. (2016) studied 1,183 transitional-aged youth ages 18–25 who were mandated to participate in Prime for Life groups after an arrest for driving under the influence of alcohol. Study participant profiles included two low-risk statuses (abstinence and light drinking) and two high-risk statuses (occasional heavy drinking and frequent heavy drinking). The study found that people in the two high-risk statuses were likely to report the intention to transition to the lower-risk drinking group following the intervention. For example, those reporting occasional heavy use at baseline (22%) transitioned to light use/no use (47%) at follow-up

In a brief school-based intervention, adolescents ages 12–18 years and their parent ($N = 315$) were randomly assigned to one of two intervention conditions (a two-session adolescent-only condition or a two-session adolescent and additional parent session condition) or an assessment-only control condition (Winters et al., 2012). The intervention was based on motivational interviewing, with two 60-minute individual sessions. For the adolescent and parent condition, there was a third session for parents that was focused on support for and monitoring of the adolescent’s goals. The study showed promising post-intervention reductions in substance misuse when compared with the control group (Winters et al., 2012). These promising reductions included the

percentage of participants reporting abstinence from alcohol 90 days post-intervention ($p < .01$) and the percentage reporting abstinence from cannabis 90 days post-intervention ($p < .05$). Significant reductions in alcohol abuse and dependence and cannabis abuse and dependence were maintained at 6 months post-intervention.

A quasi-experimental study of a computer-facilitated screening and provider brief advice (cSBA) intervention was conducted with 2,096 adolescents served through 9 primary care practices in New England states and 589 adolescents served through 10 pediatric generalist practices in Prague, Czech Republic (Harris et al., 2012). The U.S. intervention was focused on alcohol use, while the Czech Republic intervention was focused on cannabis. The study showed a reduction in adjusted relative risk of substance use at 3-month follow-up for those enrolled in the intervention group, compared with adolescents in the control group (treatment as usual). Adolescents in the U.S. intervention group had significantly lower risk of alcohol use at 6 and 12-month follow-up, compared with adolescents receiving treatment as usual in New England. Similarly, adolescents in Prague had significantly reduced risk of cannabis use at 3 and 12 months, compared with control subjects.

Two randomized controlled trials of brief interventions for substance-using youth who experienced homelessness found no significant difference in substance use outcomes between the intervention and control groups (Xiang, 2013). Both trials had less than an 80% follow-up. Outcomes were assessed at 1- and 3-months post-brief intervention. Xiang concluded that the brief interventions may not be intense enough to support behavior change in youth who experience homelessness.

Promising Practices

Interventions to Reduce Risk of Communicable Diseases: An HIV/AIDS and hepatitis health promotion program led by nurses was compared with an art messaging program led by artists to assess the impact of these interventions on reducing drug and alcohol use among 154 homeless youth (Nyamathi et al., 2012). The study comparing the two programs used a participatory action approach. Both the art messaging program and the HIV/AIDS and hepatitis health promotion program were associated with decreased alcohol and marijuana use post-intervention. The health promotion program was also associated with a reduction in use of methamphetamine, cocaine, and hallucinogens at 6-month follow-up.

Drop-In Programs: Drop-in centers show promise for reducing risky behaviors such as substance use (Coren et al., 2016; Guo & Slesnick, 2017). However, more rigorous research is needed to evaluate the effectiveness of these programs. Guo and Slesnick (2017) found that linkage to drop-in centers significantly decreased drug use by homeless youth ages 14–24, compared with linkage to a crisis shelter. Another study (Slesnick et al., 2015) found that for youths connected to drop-in centers, there was no difference between interventions using the Community Reinforcement Approach ($n =$

93), Motivational Enhancement Therapy ($n = 86$), or case management ($n = 91$) in reduction of substance use. Outcome data on self-reported alcohol and drug use (National Institute on Alcohol Abuse and Alcoholism Form 90) and urine toxicology screens were collected at 3, 6, and 12 months after baseline assessment. All three interventions were significantly associated with decreased substance use in youth who experience homelessness. This finding was echoed in a systematic review of interventions for youth without housing (Coren et al., 2016; Guo & Slesnick, 2017).

Other Early Interventions: In Australia, they have implemented MAKINGtheLINK to increase help-seeking for substance use and mental disorders. MAKINGtheLINK is a peer-to-peer school-based intervention for adolescents ages 12–15. The intervention is based on two models of behavior change: the Information-Motivation-Behavioral Skills Model and the Theory of Planned Behavior. The trial was implemented in three secondary schools in Victoria, Australia, with 247 eighth-grade students and resulted in increased intention to seek help and increased adolescents' confidence to help fellow students seek help (Lubman et al., 2018).

Boendermaker et al. (2015) described game-like elements that can be integrated into early interventions. Such elements include motivating feedback (i.e., sounds and graphics), incentives (i.e., points scored), cognitive bias modification, and other game-like elements that motivate youth to engage in the intervention process. More research is required to identify if and how these elements facilitate intervention engagement.

Principles of Effective Early Intervention

Although the literature does not explicitly identify principles of effective early intervention services for adolescents and transitional-aged youth, these principles can be adapted from the National Institute on Drug Abuse 2020 publication “Principles of Adolescent Substance Use Disorder Treatment” and from studies that cite the elements of effective early intervention services. Services should address these fundamental principles:

- Ensure the earliest possible identification of substance use through universal screening for both substance use and mental health conditions.
- Offered in multiple settings to reach adolescents and transitional-aged youth in the environments in which they work, go to school, play, and live.
- Support social connection and empowerment of individuals through problem solving, coping, and self-advocacy skills.
- Address the needs of the whole person and be trauma informed, age appropriate, show cultural sensitivity, and focus on reducing risk factors and enhancing protective factors.
- Consider family/caregiver and community support, such as teachers and mentors, as part of an intervention.

Gaps in the Evidence Base

Several systematic reviews of early interventions for adolescents who use substances showed promising results (Carney & Myers, 2012; Xiang, 2013), although effect study sizes were small, with few studies of any one intervention. McCarty et al. (2019) noted that only four substance use primary care adolescent-related trials were registered in ClinicalTrials.gov and argued for more funding for brief intervention studies. Several studies of SBIRT (Barata et al., 2017) and brief intervention (Muench et al., 2017) included adolescents as well as adults, but few of these studies focused on interventions solely for adolescents or transitional-aged youth.

Although the research indicates a need for early intervention for special populations, there are significant gaps in the research regarding early intervention approaches for racial and ethnic minority youth and LGBTQ youth. There are slightly more studies of early intervention for opportunity youth and adolescents and transitional-aged youth who experience homelessness, but the literature could be much more robust. Studies of early intervention for opioid use are also lacking.

Further, the quality of most early intervention study data is poor, and, therefore, more rigorous studies are needed (Carney et al., 2016; Stockings et al., 2016). For example, studies of interventions for adolescents who experience homelessness require

additional efforts to engage, track, and support study participants (Garvey et al., 2017). These efforts include building trust with participants through outreach, use of social media to stay in touch with participants, and flexibility to meet youth when and where they want to meet.

There is a need for rigorous studies of school-based brief interventions (Mitchell et al., 2012). A knowledge gap exists around the referral to treatment component of SBIRT. Use of behavioral health providers for SBIRT within primary care could benefit from further study (Sterling et al., 2017). Actual connection to treatment postreferral has not been well studied, especially for adolescents and transitional-aged youth.

Across studies, there is acknowledgment that trauma experienced by youth experiencing homelessness, LGBTQ youth, opportunity youth, and racial and ethnic minority youth leads to an increased risk for substance use (Johns, Lowry et al., 2018). However, studies of trauma-informed brief interventions are lacking (Moustafa et al., 2018).

Conclusions and Opportunities for Collaboration

Numerous studies support the need for developmentally appropriate early intervention strategies for adolescents and transitional-aged youth to stop or slow the progression of substance use problems. Evidence-based interventions, such as SBIRT and brief in-person and computer-assisted motivational interventions, have shown positive results for adolescents. Early intervention using or incorporating principles from motivational interviewing has been effective; but additional research on youth is required due to such factors as the limited number of studies and small study and effect sizes. Promising practices include school-based, wellness, game-like, and art interventions, but more investigation is required. Knowledge gaps exist around studies specific to transitional-aged youth; early interventions for racial and ethnic minority youth and LGBTQ youth; the referral to treatment component of SBIRT and the use of behavioral health providers to deliver the model in primary care settings; and trauma-informed brief interventions. Lastly, greater clarity regarding the definition of early intervention is needed to guide health services research for adolescents and transitional-aged youth.

Building a research base on early intervention strategies for adolescents and transitional-aged youth provides opportunities for practitioners and researchers to collaborate to ground studies in real-world environments and to support effective adoption of findings in practice. State policymakers and funders can help advance early intervention practices through supporting new pilot programs that investigate promising practices and fund effective early intervention services. They can support professional training on interventions in collaboration with universities and professional organizations. Additionally, state policymakers who are implementing early intervention

programs and strategies can share lessons with other states to help support improvement and expansion of these services.

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