Universal School-Based Implementation of Screening Brief Intervention and Referral to Treatment to Reduce and Prevent Alcohol, Marijuana, Tobacco, and Other Drug Use: Process and Feasibility

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ABSTRACT: Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an evidence-based approach to reducing substance use in adolescents. An emerging literature shows the promise of school-based SBIRT. However, most school-based SBIRT has only targeted substance-using adolescents and used school-based health clinics, which most schools lack. This project aimed to describe the following: a model for implementing universal SBIRT in high schools without school-based clinics, reasons students most commonly endorsed for reducing or avoiding substance use, students' perceptions of SBIRT, and students' intentions to change substance use or remain abstinent following SBIRT. Participants were N = 2513, 9th to 10th grade students in 10 high schools. Students rated SBIRT positively and indicated substantial intentions to reduce or delay substance use following SBIRT. Results support SBIRT's potential to delay substance use among current abstainers in addition to reducing substance use among current users. This project demonstrates SBIRT's feasibility as a universal method in high schools without in-school clinics.

KEYWORDS: SBIRT, adolescent, school, universal, alcohol use, drug use

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Introduction

Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an evidence-based approach to reduce substance use among adolescents.[1,2] The SBIRT approach typically starts with a brief substance use screen, followed by a short conversation with a trained interviewer intended to reinforce abstinence, stop or reduce substance use, or make a referral for intensive treatment.[3,4] Successful SBIRT promotes behavior change by helping substance users resolve ambivalence around changing their behavior using empathic interview styles and guided discussions regarding the perceived harms and benefits of the substance use behavior.[3,5] For nonusers, SBIRT involves identifying and reaffirming motivations to remain abstinent.

The SBIRT approach was originally developed and applied in adult clinical populations and primarily administered in clinical settings.[6] Most studies showing the effectiveness of SBIRT with adolescents have occurred in clinical settings,[7] but barriers pertaining to clinician time, training, and reimbursement have inhibited dissemination in clinical settings.[6,8,9] An advantage of delivering SBIRT in schools is the potential to reach a large proportion of the adolescent population in one venue.[10–12]

Adolescence is a time of substance use experimentation for many young people and problematic substance use for some. Among eighth graders, 22.8% have ever drunk alcohol, 12.8% have used marijuana, and 8.9% have used illicit drugs. Rates of substance use increase progressively in early high school. By 10th grade, these prevalence rates increase to 43.4% for alcohol, 29.7% for marijuana, and 14.0% for illicit drugs.[13] Among those who use substances, a subgroup meet criteria for substance use disorders: 1.3% of 13- to 14-year olds and 5.6% of 15- to 16-year olds meet criteria for alcohol use disorders; 3.4% of 13- to 14-year olds and 9.7% of 15- to 16-year olds meet criteria for drug use disorders.[14] By late high school, age 17 to 18, 14.5% meet criteria for alcohol use disorders and 16.3% for drug use disorders. In sum, early high school is a time when a significant portion of students have begun to use substances; substance use is salient to those who have not initiated use due to exposure to peer use, but rates of substance use disorders are relatively lower than in later high school. Therefore, early high school is an optimal time to prevent or reduce substance use when it is salient but has not yet progressed to problematic use for most youth.

Existing universal high school–based substance use prevention approaches include abstinence-based approaches and harm reduction/harm minimization approaches. Abstinence-based

approaches generally encourage youth to abstain from substance use, often by teaching refusal skills youth can use when they are offered a substance. When used on their own, abstinence-based approaches to substance use have been found to have limited to no impact on substance use.[15,16] Harm reduction/harm minimization approaches focus on providing youth with skills to make their substance use safer, such as using less of a substance or using substances in safer contexts.[17] Although they have been shown to reduce levels of risky substance use in some trials, harm reduction/harm minimization approaches remain controversial in public health[18] and thus may not be a good fit for every school district.

In clinical settings, SBIRT has been demonstrated to prevent substance use initiation among abstinent adolescents.[19] However, to date, most school-based implementations of SBIRT have targeted only substance-using adolescents.[20] Delivering SBIRT universally affords the opportunity for 2 types of prevention: preventing onset of substance use through motivating abstinent students to remain abstinent and reducing substance use among users by providing education on the negative consequences of substance use and brainstorming strategies to cut down or quit if the student wishes to do so. Several previous studies have documented universal school-based SBIRT implementations. Curtis et al[10] presented evidence for logistical and economic feasibility of universal school-based SBIRT implementation. Mitchell et al[21] documented significant decreases in drinking to intoxication and drug use at 6-month follow-up after implementing SBIRT in 13 New Mexico high schools, with 21% of baseline alcohol users reporting abstinence at 6-month follow-up. Likewise, Komro et al[12] documented a 22% decrease in past 30-day alcohol use following universal school-based implementation of SBIRT in high schools within the Cherokee Nation.

Despite notable prior successes, the existing literature on universal school-based SBIRT has 3 primary limitations. First, each of the prior universal school-based SBIRT implementation models relied on a school-based health clinic as the infrastructure for delivering the intervention. Of the more than 41000 secondary or combined primary and secondary schools in the United States, only about 1.5% have a school-based clinic.[22,23] A model for SBIRT delivery in schools without clinics is needed if SBIRT is to be implemented widely in high schools.

A second limitation of previous school-based SBIRT implementations is that most have focused on alcohol use, with some including marijuana use as well.[24] A recent meta-analysis concluded that SBIRT is effective at reducing use of drugs besides alcohol, but only if they are an explicit focus of the intervention; secondary effects on other drugs are not seen in SBIRT programs that focus only on alcohol.[2]

A third limitation of previous studies of school-based SBIRT is that to our knowledge they have not reported on SBIRT's effect on preventing or delaying substance use among non–substance-using adolescents. Several studies describe protocols for reinforcing abstinence among nonusing students[10,12,21] but do not provide results on continued abstinence. Mitchell et al[21] report the number of students who remained abstinent 6 months after the intervention but no process indicators to reflect whether the intervention played a role in that continued abstinence. A primary strength of universal SBIRT in adolescence is its potential to prevent or delay onset during this crucial developmental period when early substance use is known to be harmful and prognostic of future problematic use.[25]

In addition to the 3 limitations listed above, there is a need for complete reporting on the procedures used to deliver universal SBIRT, from the choice of implementation sites through the final results. There are a number of challenges in school-based SBIRT implementation, including identifying and training appropriate personnel to deliver the intervention, assuring participants' confidentiality, and establishing consent and referral procedures. There is need for a well-described model demonstrating the feasibility of implementing SBIRT without in-school clinics. Beyond program design concerns are matters of process: in order for SBIRT to be effective, adolescents must be willing to engage openly and truthfully with the interviewer. They must feel comfortable with the interviewer and believe that their information will be kept confidential so that they will not experience negative consequences as a result of reporting on their substance use. During SBIRT, interviewers must quickly steer conversations toward identifying adolescents' own motivations to reduce or avoid substance use. Prior literature has not identified motivations that resonate most with adolescents.

The current report describes the process of implementing SBIRT universally in high schools without in-school clinics and examines its feasibility. This report has 4 aims: to describe (1) a model for implementing universal school-based SBIRT program in high schools that do not have in-school health clinics, (2) the reasons students most commonly endorsed for reducing or avoiding substance use, (3) students' perceptions of the SBIRT process, and (4) students' intentions to change their substance use or remain abstinent following participation in SBIRT.

Materials and Methods

Community partners and school recruitment

This project was a collaboration between the University of Wisconsin-Madison and IMPACT Alcohol and Other Drug Abuse Services, Inc., a community-based Southeastern Wisconsin nonprofit organization. During the 2 years prior to SBIRT implementation, the project team engaged in a planning process with partners from local Southeastern Wisconsin substance abuse community prevention coalitions. Community coalitions are groups of local stakeholders who come together

to identify strategies to reduce substance use in their community and often include representatives from local businesses, youth service organizations, health care organizations, and government agencies.[26,27] The project team identified coalitions who were interested in presenting SBIRT to their local schools as a substance use prevention option and led learning sessions for substance use coalitions to educate them on SBIRT and evidence of its effectiveness. Coalition members in turn met with school district staff to share information about SBIRT, endorse SBIRT as a promising strategy for local adolescent substance use prevention, and determine schools' willingness to participate.

Based on the increase in prevalence of substance use that occurs in early high school, we chose to target 9th and 10th grade students for SBIRT. Inclusion criteria for schools were as follows: (1) location in Southeastern Wisconsin—with districts from urban, suburban, and rural areas to test feasibility of universal SBIRT across district types; (2) willingness to administer SBIRT to an entire population of the school's choice of 9th or 10th grade students; (3) willingness to administer Wisconsin Department of Public Instruction's online Youth Risk Behavior Surveillance (OYRBS) surveys[28] to target students in the years before and after SBIRT administration, as well as to a comparison cohort of students who did not receive SBIRT; and (4) granting access to OYRBS data to the project team to evaluate the longitudinal impacts of SBIRT. The OYRBS data are not included in the current report, which focuses on the process and feasibility of implementing SBIRT.

During the 2-year planning process, the project team worked with substance use coalitions and participating schools to develop an implementation and evaluation model that fits the logistical and other constraints of schools. There was widespread agreement among school leaders on major aspects of the protocol, as described below. This program evaluation was determined "not research" under the University of Wisconsin's Health Science institutional review board certification process (see https://kb.wisc.edu/hsirbs/33386).

Screener selection, training, and quality assurance

Schools agreed that SBIRT should be implemented by personnel from outside school districts because school district staff lacked the time for training and service delivery, and students would share more accurate information with personnel who were not affiliated with the school. Following previous reports showing positive effects and increased financial sustainability of SBIRT with paraprofessional SBIRT providers,[29] we recruited bachelor's-level "health educators"—a term that carries no legal connotation in Wisconsin. Eight senior students in bachelor's of social work programs at 2 Milwaukee area colleges were selected for their strong interpersonal verbal skills, ability to provide accurate feedback about alcohol and drug use without judgment or discomfort, and understanding of the importance of student confidentiality. The health educators—4 black, 3 white, and 1 Hmong; 6 women and 2 men—were representatives of the students screened. Their participation satisfied degree requirements for a field experience.

All health educators received 47 hours of training over a 2-week period. In the first week, 12 hours of introductory webinars focused on knowledge about SBIRT, tobacco, alcohol, drugs, and related disorders; administering and interpreting screening and assessment questions; and basic principles of motivational interviewing. In the second week, 35 hours of face-to-face training included skills demonstrations and exercises. During the final 2 days of training, the students conducted entire SBIRT sessions with actors who were trained to play roles of various students as described in written scenarios. They received feedback from each other, the actors, and the 2 instructors. All students demonstrated competency in a final skills assessment with actors prior to program implementation.

Throughout the SBIRT implementation period, the health educators met weekly with a clinical supervisor who had extensive experience in drug and alcohol counseling to debrief their experiences delivering SBIRT and to maintain and boost skills. Also, each health educator was audio recorded at least twice while conducting SBIRT (with students' permission). Each recording was reviewed by one of the SBIRT trainers, and feedback was provided to the health educator via email. A trainer also made a site visit to observe the health educators delivering services, giving one-on-one feedback immediately afterward as well as via email to the entire group of health educators. The clinical supervisor was always available via telephone for emergency consultations.

Informed consent

An opt-out consent procedure was used,[30,31] following typical consent practices used by our partner schools for other similar programs they administer. Schools e-mailed letters to all parents of students in the target grade 2 to 4 weeks prior to SBIRT implementation. Letters explained the SBIRT intervention and included an opt-out form that parents could return to the school if they did not wish for their child to participate. Fewer than 4% of parents chose to opt their child out of participation. Prior to each session, the health educator explained SBIRT to the participating student and obtained verbal assent to participate. All but 3 students assented to participate (>99%).

Scheduling SBIRT within schools

The health educators administered SBIRT between January and May 2016. The project manager worked directly with school districts to determine the best dates for SBIRT. Logistical challenges to implementing SBIRT included identifying an appropriate space and choosing times during the day when students could leave class to attend SBIRT. Regarding

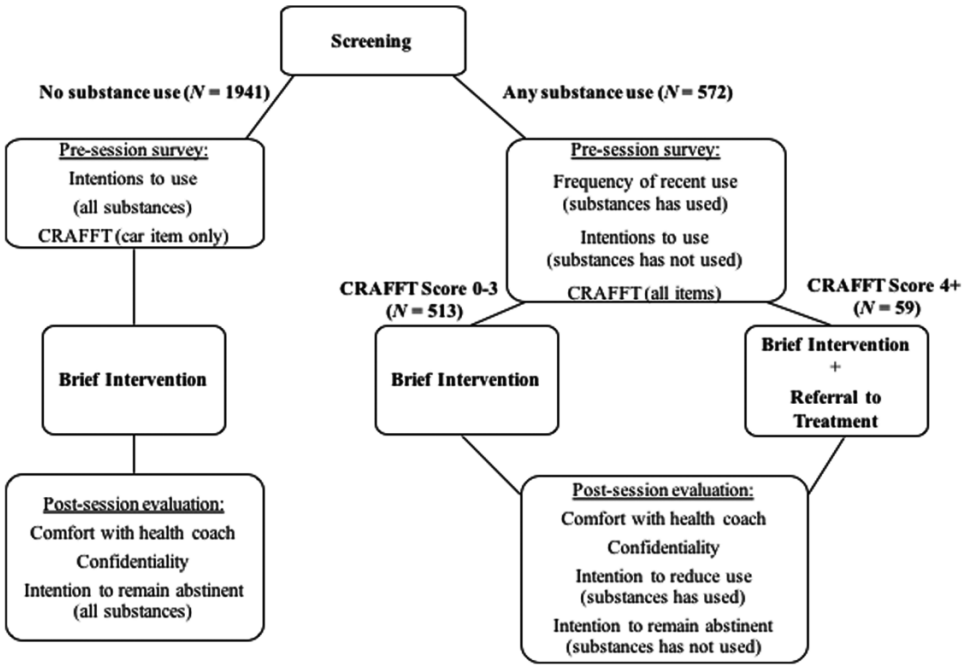

Figure 1. Summary of Screening, Brief Intervention, and Referral to Treatment procedures.

space, many schools lacked a dedicated, confidential space for screening. Examples of spaces used for screening included library study rooms and guidance staff offices. The project manager worked with each school's staff to create a process for sending students to complete SBIRT that ensured as many students as possible were screened with minimal disruption to academic activities. Schools used various procedures for sending students to the screening room, including calling students in alphabetical order throughout the day or pulling students out of one particular class taken by all students of that grade.

Screening protocol

A structured SBIRT protocol was developed, following guidelines from the National Institute on Alcohol Abuse and Alcoholism[4] and using a modified motivational interviewing approach (Figure 1). The SBIRT sessions, including screening, assessment, brief intervention, and referral to treatment if necessary, were designed to last no more than 15 minutes to minimize disruptions to academic activities and to maintain student focus. In each session, the health educator explained SBIRT and obtained the student's assent to participate, briefly established rapport with the student, and established ground rules concerning confidentiality. Students were informed that health educators were mandated to report child abuse or thoughts of hurting oneself or others but that all other topics, including substance use, were confidential. Under Wisconsin State Law, information on substance use collected from individuals of 14 years of age and above is considered confidential. Thus, there is no duty to report students' substance use to parents or schools.

The health educator then asked students to respond to screening and assessment questions on a Microsoft Access database form on a laptop computer. Results from the computerized screen were immediately discussed with the student in a brief intervention, followed by postsession evaluation questions completed by the students on the same computer.

In the database program, substance use was measured first via a series of yes/no screening items on whether the student had used alcohol, marijuana, prescription drugs for nonmedical reasons, heroin, or another drug during the past year; whether they had smoked tobacco, chewed tobacco, or used e-cigarettes in the past 4 weeks; and whether they had injected a drug for a nonmedical reason ever in their lifetime. A series of follow-up questions gathered information for use by the health educator in tailoring the brief intervention portion of the session. Students who endorsed use of a substance in the initial screening questions completed the CRAFFT[32] to screen for possible substance use disorder(s) and additional items (not reported here) regarding the recent frequency and intensity of their use in the past month. For substances students reported not using, they were asked about intention to start using in the next year.

On completion of screening and assessment, the computer printed a summary of the student's responses. The health educator reviewed the responses, asked open-ended questions about the student's substance use (or abstinence), and gave feedback on their risk levels (abstinence, risky use, problem use, and possible dependence). Throughout the conversation, the health educators focused on eliciting change talk among substance users and motivations to maintain abstinence among nonusers. Health educators provided brief education on the potential negative consequences of using various substances. Remaining true to the principles of motivational interviewing, the health educators asked students' permission before giving

such information. Recommendations were that students whose CRAFFT scores suggested significant disorders (score of 4 or above) accept a referral for a more comprehensive assessment, that other substance-using students quit or cut down, and that abstinent students continue to abstain. Those students who agreed to quit or cut down were offered assistance in constructing a detailed behavior change plan.

Referral to treatment

Each substance use coalition identified appropriate referral resources in their community for teens who were identified as needing further substance use assessment and treatment. The coalitions relied on preexisting relationships with local, private, and nonprofit substance abuse treatment organizations, explained the project to their contacts, and in many cases secured free assessments for any students referred. Printed handouts with the referral information were given to every student following SBIRT to avoid revealing any one student as needing referral.

The referral process consisted of 3 steps. First, the health educator informed the student that their responses to written and interview questions suggested that they were engaging in drug and/or alcohol use that was causing problems in their life, and they might have difficulty quitting or cutting down without help. Second, the health educator provided the student with contact information for local referral agencies. Third, the health educator asked the student for permission to involve the student's parent or guidance counselor in the referral process. If the student did not grant permission to contact anyone else, the health educator simply provided the contact information for the community treatment agency and encouraged the student to contact the agency. We made the decision not to report students with possible disorders to schools or parents without their permission so that all students would feel comfortable disclosing their substance use during SBIRT.

Measures

Data for the current report were gathered from 3 sources: student substance use data collected during the screening and assessment portion of the SBIRT session, a student survey completed immediately after SBIRT to give feedback on the process and indicate their future substance use intentions, and a health educator survey completed immediately after each SBIRT session indicating the outcome of the session (whether a referral was made for additional services) and the primary reasons that the student endorsed for reducing their substance use or remaining abstinent.

Data on *substance use* were obtained via yes/no items inquiring whether the student had used alcohol, marijuana, prescription drugs for nonmedical reasons, heroin, or another drug during the past year; whether they had smoked tobacco, chewed tobacco, or used e-cigarettes in the past 4 weeks; and whether they had injected a drug for a nonmedical reason ever in their lifetime.

Problematic substance use was assessed with the CRAFFT,[32] a 6-item mnemonic scale that is recommended by the American Academy of Pediatrics' Committee on Substance Abuse and designed for use with adolescents. The CRAFFT assessment tool has been extensively researched and shown to be the most developmentally appropriate screening tool to assess the risk of substance use disorders in adolescents.[33] All students were asked the Car question of the CRAFFT ("Have you ever ridden in a CAR driven by someone (including yourself) who was 'high' or had been using alcohol or drugs?"). Students who reported using any alcohol or drugs were asked the remaining CRAFFT questions.

Process measures included students' reported comfort with the health educator and their trust that their data would remain confidential. *Comfort with health educator* was measured via one item "I was comfortable talking with the health coach" on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree." *Trust in confidentiality* was measured via one item, "I trust that the information I gave today will remain confidential" on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree."

For substances that each student reported not using in the past 12 months, *intention to initiate substance use* was measured before the SBIRT session with the single item "How likely are you to start [smoking cigarettes/chewing tobacco/using e-cigs/drinking alcohol/using marijuana/using prescription drugs for non-medical purposes/using injection drugs/using heroin/using other drugs] in the next year?" on a 5-point scale from 1 = "very unlikely" to 5 = "very likely." To examine the impact of the intervention on the subgroup of nonusers who were ambivalent about substance use or indicated they intended to start using substances in the next year, this variable was dichotomized such that individuals who responded "not sure," "likely," or "very likely" were coded as ambivalent or having intentions to start using that substance and those who responded "unlikely" or "very unlikely" were coded as not having intentions to do so. Prescription drugs, injection drugs, heroin, and other drugs were combined to match the post-SBIRT question, which referred to all of these categories of drugs as "other drugs." Students who responded "not sure," "likely," or "very likely" for any of these substances were coded as ambivalent/intending to use other drugs. Students were asked after the session about their intentions to use each substance from which they currently abstain, one item for each substance: "After talking to the health coach, I am less likely to start [smoking cigarettes/chewing tobacco/using e-cigs/drinking alcohol/using marijuana/using other drugs]" on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree."

For each item that each student reported using in the last year, *intention to reduce substance use* was measured after the

SBIRT session with the single item "After talking to the health coach, I will [smoke fewer cigarettes/chew less tobacco/use e-cigs less/use less alcohol/use less marijuana/use other drugs less]" on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree."

Reasons to reduce or avoid substance use were recorded by the health educators immediately following each SBIRT session. Six prespecified reasons were tracked: wanting to get good or better grades, wanting good or better health, playing sports, wanting to go to college, worrying about what their parents would think or do, and worrying about what their friends would think or do if they found out about the substance use. The health educator checked the box for each reason the student had endorsed during their conversation. If a reason other than those we had prespecified was given, the health educator recorded it as "other reason" and wrote in the student's reason. Two schools did not collect data on reasons for substance use, resulting in a reduced sample size of n = 2084 for these data.

Results

A total of 10 high schools in 6 school districts (3 suburban, 2 urban, and 1 rural) participated in the program. There was significant socioeconomic diversity among the participating schools. Between 5.6% and 66.3% of students in each school were classified as "economically disadvantaged" by the state of Wisconsin, indicating that they qualified for free and reduced lunch or were otherwise certified by the school as residing in a low-income household. Schools also varied widely in their racial/ethnic makeup, ranging from 31.5% to 91.4% white, 1.5% to 36.0% black, and 5.1% to 33.4% Hispanic.

In the participating schools, 3279 students were eligible for SBIRT and 2525 (77%) ultimately participated in SBIRT. Nonparticipation was primarily due to absence from school or scheduling conflicts. For the current analyses, 12 participants who reported that they were in grades 11 or 12 were excluded; therefore, our analytic N = 2513. Participants' mean age was 15.25 (SD = 0.66) years. Table 1 summarizes additional participant characteristics and the substance use prevalence reported by participants. Overall, 22.8% of participants had used any of the queried substances. Alcohol was the most commonly used (18.3% of participants) and heroin was the least common (0.2% of participants). About 9% of students engaged in polysubstance use or use of any 2 or more of the queried substances. Most of the students scored either 0 (70.2%) or 1 (21.5%) on the CRAFFT. About 2% (59) of students scored a 4, 5, or 6 on the CRAFFT. All of these students were informed by the health educator that their substance use fell into a high-risk category, meaning that it could cause serious problems in their lives and were referred by the health educator for further assessment and/or treatment.

Results from the post-SBIRT survey on students' ratings of the SBIRT process, future substance use intentions, and reasons they wish to avoid or cut down on substance use are summarized in Table 2. Students rated the SBIRT implementation process positively. The overall mean comfort with the health coach was 6.67/7, with 78.5% of students indicating that they "strongly agree" with the statement. The overall mean trust in confidentiality was also high, 6.6/7, with 78.4% of students indicating "strongly agree."

Non–substance-using students indicated nearly universal intentions to remain abstinent following SBIRT. Overall means on the post-SBIRT assessment ranged from 6.62 to 6.69/7, with 82.8% to 86.9% of students who abstained from each substance endorsing "strongly agree" on those items.

A substantial number of current substance users (22.8% of the participants) expressed intent to reduce their substance use following the SBIRT session. About 57.4% strongly agreed that they intended to use less alcohol following the session (overall mean: 6.09/7); marijuana, 46.1% (overall mean: 5.57/7); other drugs, 57.4% (overall mean: 5.66/7); cigarettes, 33.3% (overall mean: 5.10/7); e-cigarettes, 30.1% (overall mean: 4.88/6); and chewing tobacco, 35.7% (overall mean: 5.43/7).

A key subgroup that stands to benefit from universal SBIRT consists of nonusers who indicated ambivalence or intention to begin using a particular substance in the next year. For each substance, we defined this group as those who indicated during the presession survey that they were "not sure," "likely," or "very likely" to initiate use in the next year. This group ranged from n = 53 (2.1% of the sample) for chewing tobacco to n = 175 (7% of the sample) for alcohol. Results for this group are presented in Table 3. Intentions to avoid substance use following the SBIRT session were high in this group, ranging from M = 5.65/7 for "less likely to start using other drugs" to M = 6.03/7 for "less likely to start drinking alcohol."

The most commonly endorsed reason for avoiding or cutting down substance use, mentioned by 60.7% of participants, was wanting to go to college. Worrying about what parents and family would think or do if they knew about the substance use and wanting good or better health were also commonly endorsed (53.1% and 47%, respectively). In addition to the prespecified reasons, students mentioned other reasons for avoiding or cutting down on substance use: avoiding getting in trouble, avoiding getting addicted, avoiding negative consequences that they have witnessed others experience (family and friends), not wanting substances to interfere with future career ambitions, not wanting substances to interfere with current extracurricular activities besides sports, religious motivation, and not being interested in drug use.

Discussion

The current report aimed to describe the following: a model for implementing universal school-based SBIRT program in high schools that do not have in-school health clinics, the reasons students most commonly endorsed for reducing or avoiding substance use, students' perceptions of the SBIRT process, and

Table 1. Sample descriptive statistics and substance use prevalence, N = 2513.

		NO. (%)
Grade	9	862 (34.3)
	10	1651 (65.7)
Sex	Male	1222 (48.6)
	Female	1291 (51.4)
Substance use prevalence	Any substance use	572 (22.8)
	Injection drugs (lifetime)	4 (0.2)
	Alcohol (past 12 mo)	459 (18.3)
	Marijuana (past 12 mo)	242 (9.6)
	Prescription drugs (past 12 mo)	38 (1.5)
	Heroin (past 12 mo)	5 (0.2)
	Other drugs (past 12 mo)	37 (1.5)
	Smoke tobacco (past 4 wk)	52 (2.1)
	Chew tobacco (past 4 wk)	14 (0.6)
	E-cigarettes (past 4 wk)	83 (3.3)
	Polysubstance use[a]	226 (9.0)
CRAFFT score	0	1764 (70.2)
	1	540 (21.5)
	2	92 (3.7)
	3	57 (2.3)
	4	30 (1.2)
	5	22 (0.9)
	6	7 (0.3)

[a]Polysubstance use was defined as using any 2 or more of the queried substances.

students' intentions to change their substance use or remain abstinent following participation in SBIRT.

Our protocol, developed through continuous conversations and partnership with both community substance use coalitions and schools, overcame the primary logistical challenges to implementing SBIRT without an in-school clinic, including identifying personnel to implement the intervention and establishing procedures for data confidentiality and referral to treatment. Consistent with prior research, we found paraprofessionals to be effective implementers of the SBIRT protocol.[29] Our project extends the evidence on paraprofessional SBIRT implementers, previously focused on adults, to an adolescent population. We made several purposeful choices to ensure students' trust in confidentiality, including using non–school-affiliated personnel to implement the intervention and not revealing a student's substance use to parents or school personnel without the student's permission. Using non–school-affiliated personnel helped to ease students' worries that revealing substance use would affect their ability to participate in extracurricular activities or to receive positive recommendation letters for college from school counselors.

A key component of brief motivational interviewing is identifying motivations for reducing or avoiding substance use that are salient to the individual and therefore inspire intrinsic motivation for change. These can include motivations to pursue a positive outcome in one's life or to avoid a negative outcome. We observed both types of motivations. The positive reasons our participants gave for wishing to avoid substance use or cut down on their substance use included academic aspirations (wanting to get good grades and go to college), social motivation (from parents and friends), and being an athlete (which involves both school prohibitions on substance use and motivations to keep one's body healthy for performance). An additional set of reasons had to do with avoiding negative consequences, including avoiding getting in trouble, avoiding getting addicted, avoiding negative consequences that they have

Table 2. SBIRT process indicators, substance use intentions, and reasons to avoid or reduce use.

		M	SD
Comfort with health coach		6.67	0.82
Trust in confidentiality		6.60	0.96
Intention to initiate substance use, post-SBIRT: "After talking to the health coach, I am less likely to start . . ."[a]	Smoking cigarettes (n = 2461)	6.65	1.12
	Chewing tobacco (n = 2499)	6.69	1.04
	Using e-cigarettes (n = 2430)	6.68	1.03
	Drinking alcohol (n = 2054)	6.62	1.09
	Using marijuana (n = 2271)	6.67	1.06
	Using other drugs[b] (n = 2429)	6.69	1.08
Intention to reduce substance use, post-SBIRT: "After talking to the health coach, I will . . ."[c]	Smoke fewer cigarettes (n = 52)	5.10	1.79
	Chew less tobacco (n = 14)	5.43	1.99
	Use e-cigarettes less (n = 83)	4.88	2.00
	Drink less alcohol (n = 459)	6.09	1.36
	Use less marijuana (n = 242)	5.57	1.74
	Use other drugs less (n = 84)[b]	5.66	2.01
		No. (%)	
Reasons to reduce or avoid substance use (n = 2084)[d]	College	1266 (60.7)	
	Parents/family	1106 (53.1)	
	Better health	980 (47.0)	
	Play sports	754 (36.2)	
	Better grades	439 (21.1)	
	Other reason	418 (20.1)	
	Friends	375 (18.0)	

Abbreviation: SBIRT, Screening, Brief Intervention, and Referral to Treatment.
[a]Items administered to participants who reported that they had not used each substance.
[b]"Other drugs" items included injection drugs, prescription drugs, heroin, and all other drugs and were administered to participants who reported use of one or more of these substances.
[c]Items administered to participants who reported that they had used each substance.
[d]Reasons to reduce or avoid substance use were marked as endorsed if the student mentioned that reason during the brief intervention portion of SBIRT. Two schools did not collect data on reasons to avoid substance use, resulting in lower n for these variables. All other variables measured on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree."

witnessed others experience (family and friends), not wanting substances to interfere with future career ambitions, and not wanting substances to interfere with current extracurricular activities besides sports. Future school-based SBIRT programs may wish to incorporate these motivations as part of the brief intervention protocol.

Our process indicators suggested that the model as implemented was acceptable to students. Most of the participants indicated that they were comfortable talking with the health educator and that they trusted the confidentiality of the data they provided. A second indicator of students' trust was that students disclosed substantial levels of substance use, comparable with national estimates.[34] This indicates that the overall intervention framing and setting provided an environment in which students were willing to disclose substance use, a necessary precursor to engaging in a meaningful dialogue during brief intervention.[3]

Participants reported that following the SBIRT session, they had substantial intention to continue to abstain from substance use (among nonusers) or to reduce use (among current users). Over 80% of nonusers indicated strong intentions to abstain from alcohol, marijuana, and other drug use in the next year. Over 50% of current users indicated strong intentions to reduce their use of alcohol, marijuana, and other drugs.

Table 3. Substance use intentions after SBIRT among those with initially ambivalent or high intentions to initiate use.

	M	SD
Intention to initiate substance use, post-SBIRT: "After talking to the health coach, I am less likely to start . . ."		
Smoking cigarettes (n = 92)	5.72	1.88
Chewing tobacco (n = 53)	5.87	1.83
Using e-cigarettes (n = 111)	5.82	1.75
Drinking alcohol (n = 175)	6.03	1.51
Using marijuana (n = 119)	5.70	1.77
Using other drugs (n = 55)	5.65	1.94

Abbreviation: SBIRT, Screening, Brief Intervention, and Referral to Treatment.
All variables measured on 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree."

Although intentions are not perfect predictors of future action, they are an important step among those who do go on to change their behavior.[35] Among the subgroup of nonusers who, prior to the session, indicated ambivalence or intention to start using substances within the next year, most reported that they had strong intentions to abstain from substance use after participating in SBIRT. This finding demonstrates the potential of SBIRT to delay onset of substance use among current abstainers including those who intend to start using soon, an important addition to the literature, which has previously focused on SBIRT's effectiveness with current users.

The current project had several limitations. First, because of our confidentiality procedures, we were not able to verify the follow-through or other outcomes of students who were referred for additional treatment. Second, we did not track the number of students who gave permission for their parent or guidance counselor to be involved in the referral process; doing so would be an important direction for future studies to help refine the referral process for school-based SBIRT. Third, there was no comparison group for this portion of the evaluation; all participants completed SBIRT. However, the purpose of the current report is simply to present a model of universal SBIRT implementation and initial evidence for its feasibility, which can be described without a control group. Fourth, because our project was conducted with high schools in one state, Wisconsin, who were motivated to implement SBIRT, our results may not generalize to other locales. However, we did make an effort to include schools with varying characteristics, including urban, rural, and suburban schools, and schools that varied widely in their racial and socioeconomic makeup, which provides some preliminary evidence for the feasibility of universal SBIRT across a variety of school contexts. Fifth, we were unable to evaluate change in intention to use substances because it was measured via 2 differently constructed items before and after the SBIRT interview. Instead, we presented post-SBIRT intentions to reduce substance use among those who had indicated the lowest willingness to change prior to the interview. These preliminary results suggest feasibility of using SBIRT to change even initially resistant students' substance use intentions. Finally, although we did have a supervision protocol in place for health educators, we did not formally measure health educators' fidelity to motivational interviewing with an instrument such as the Motivational Interviewing Treatment Integrity (MITI) measure.[36] Future studies may consider administering such a measure as part of implementation monitoring.

Conclusions

Overall, our project demonstrates the feasibility of implementing SBIRT as a universal prevention and intervention strategy in diverse high schools that do not have existing infrastructure in the form of in-school clinics. Our model represents a promising option for high schools that wish to provide SBIRT but do not have their own personnel or clinics. Our results support the use of SBIRT as a universal preventive service for preventing or delaying substance use onset. The SBIRT approach is less time intensive than other universal substance use prevention curricula, which typically involve multiple sessions over several weeks or months. Although it should not be considered a substitute for broader scale preventive interventions that address multiple domains of risk in depth, SBIRT is a feasible option for schools that wish to implement brief, evidence-based substance use prevention and intervention to all students.

Author Contributions

All authors were involved in the conceptualization and design of the project. JM performed all statistical analyses and wrote the initial draft of the manuscript. JWC supervised intervention implementation and data collection and contributed to writing the manuscript. DPM consulted on data collection and statistical analysis and contributed to writing the manuscript. RLB oversaw the project as PI and contributed to writing the manuscript.

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