

Practice Considerations for School-Based Activities to Address the Opioid-Fentanyl Crisis

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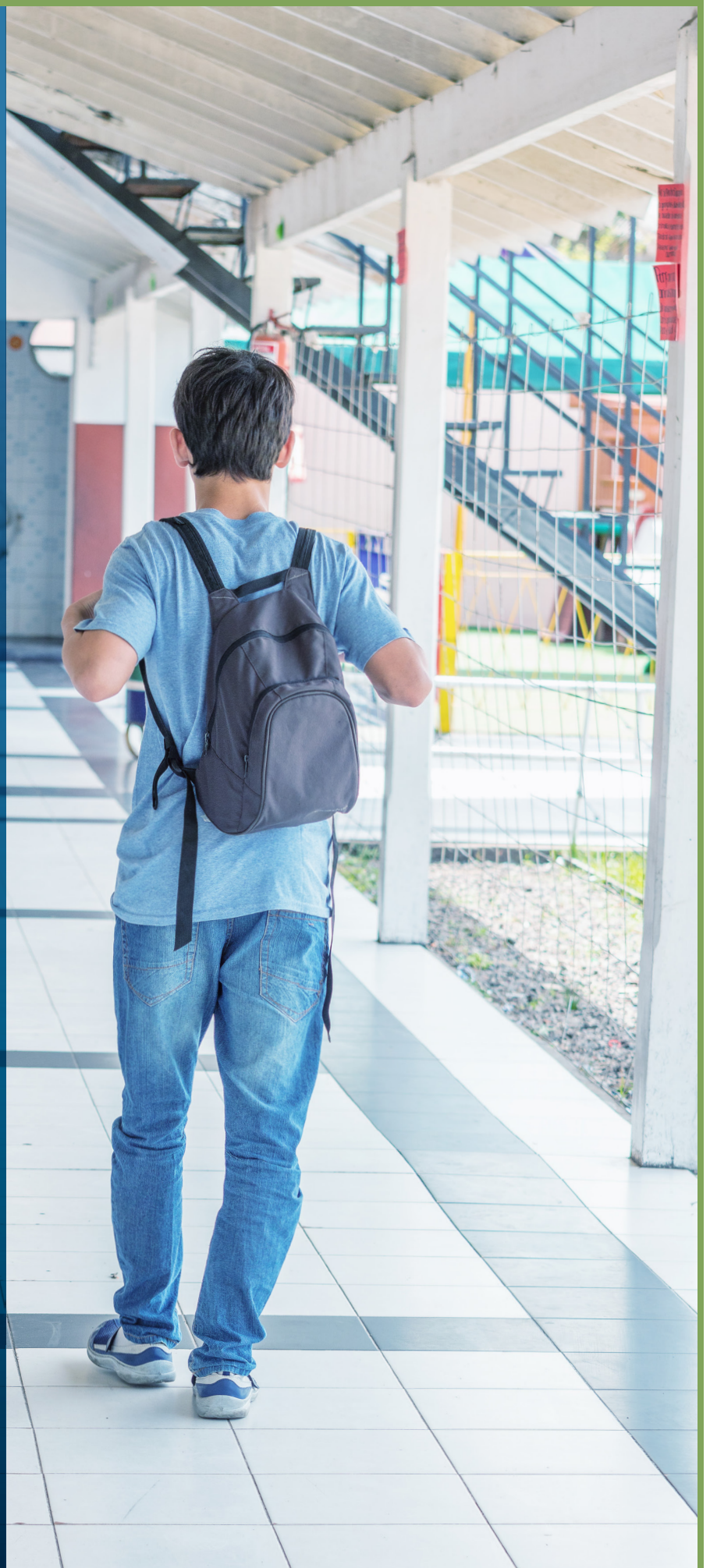
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OAYI

Opioid Affected Youth Initiative



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Abstract

Fentanyl is a potent synthetic opioid that is highly dangerous. In the current crisis of fentanyl poisoning, school-based interventions and overdose prevention strategies must be adapted to the context of fentanyl, and innovative approaches must be deployed. “Schools play a critical role in upstream prevention—as adolescents spend most of their day in school—and states, districts, and the federal government have begun taking action” (Harris & Rich, 2022, p. 201). Current literature describes a continuum of school-based prevention and intervention activities to address the current opioid crisis—opioid misuse educational programs, linkages to opioid treatments, Narcan/naloxone distribution, and fentanyl testing programs (Carson & Lane, 2021; Dayton et al., 2019; Evans et al., 2020; Harris & Rich, 2022; Klaire et al., 2022; Mitchell et al., 2017). This paper discusses a continuum of overdose prevention and intervention strategies and activities practiced in educational settings, challenges for addressing the fentanyl and xylazine public health crisis in youth, and future directions. Any one strategy taken alone is insufficient in addressing the current crisis. Educational administrators and communities must work together to employ a comprehensive multitiered approach to prevent fentanyl poisoning in school-aged youth.



Practice Considerations for School-Based Activities to Address the Fentanyl Crisis

Fentanyl is a significant public health crisis affecting millions of adults and youth nationwide. Approximately 85% of overdose deaths involve illicitly manufactured fentanyl, heroin, cocaine, or methamphetamine (Center for Disease Control and Prevention; CDC, 2022). In 2020, the Center for Disease Control and Prevention (CDC) reported 56,000 overdose-related deaths involving synthetic opioids. As a powerful synthetic opioid, fentanyl is highly dangerous. Fentanyl is up to 50 times stronger than heroin and 100 times more potent than morphine (CDC, 2022a; Muller & Ceron, 2022). With about 1 kilogram of fentanyl containing 250,000 lethal doses, this substance has a high mortality rate at a low level of consumption (National Center for Drug Abuse Statistics, 2023).

“The synthetic opioid fentanyl and related analogs, full agonists at the mu-opioid receptor, are drivers of the opioid overdose epidemic given their potency (at least 50–100 times more potent than morphine and active in the tens of micrograms making precise dosing very difficult without sophisticated equipment) and widespread availability (low production costs and high-profit value)” (Meier et al., 2020, p. 2).

As with other illicit substances, the manufacture of fentanyl, and combination with other lethal substances, makes the drug extremely lethal (CDC, 2022a). Mixing fentanyl and xylazine has significant health and safety implications for the community, law enforcement, schools, and medical providers. Xylazine is a substance initially intended as a veterinary tranquilizer and, when combined with fentanyl, increases the risk of fatality (Peng, 2023). The combination of these lethal substances is a severe emerging trend increasing overdose deaths. Xylazine-related overdoses increased by 1,127% in southern parts of the United States, 750% in the West, 500% in the Midwest, and more than 100% in the Northeast (DOJ, 2022). The White House Office of National Drug Control Policy (ONDCP) officially announced fentanyl and xylazine as an emerging threat in hopes of being proactive in preventing overdose deaths and creating tools for communities across the nation (The White House, 2023).

Dangers to Youth

Fentanyl consumption in youth has a high probability of being deadly. As a powerful synthetic opioid, fentanyl’s highly addictive properties and high potency, even in small doses, make it a dangerous opioid with a high probability of lethality or, at minimum, the occurrence of lifelong negative consequences on an adolescent’s quality of life, health, academic performance, and legal issues. Opioid deaths have increased by about 500% among those ages 15 to 24 (National Center for Drug Abuse Statistics, 2023). Between 2019 and 2020, a 94% increase in overdose deaths due to fentanyl in youth was reported (Knopf, 2022; Miranda, 2022).

A youth’s brain has not yet fully developed and is vulnerable to the effects of drugs. In adults, the prefrontal cortex is responsible for executive functioning; however, in youth, the lack of prefrontal cortical function adversely affects their risk aversion, which contributes to the causes of addiction (Neeki et al., 2020). Youth also do not always have the knowledge or education on drugs’ short-term and long-term effects and lethality. A supportive environment in the schools and community can protect against drug use. These issues necessitate the urgency to develop harm reduction strategies, treatment options, and the use of naloxone for youth populations (Miranda, 2022).

Unlike the previous three waves of the current opioid crisis (overprescription of opioids, black tar heroin, and then synthetic opioids), the fourth wave, where people are unknowingly ingesting fentanyl disguised as other types of prescription or illicit drugs, disproportionately affects young people, specifically black teens (Breitenbucher et al., 2023; CDC, 2022b). “These teenagers probably do not have a substance use disorder, they are experimenting, making a bad choice, and end up dead” (Muller & Ceron, 2022, p. 1). We must address the fourth wave of the opioid crisis in new ways that reduce stigma, increase public awareness, and provide comprehensive prevention and intervention services in order to eliminate fentanyl poisoning in schools (Breitenbucher et al., 2023).

This paper aims to present the continuum of overdose prevention and intervention activities currently being practiced in educational settings. These considerations are rooted in evidence-based research and aim to increase the effectiveness and impact of school-based activities combating the fentanyl and opioid epidemic, ultimately discussing challenges for addressing the fentanyl and xylazine public health crisis in youth, effective integrated strategies, and future directions.

Methodology

This paper presents existing successes, challenges, and recommendations that address the opioid and fentanyl crisis within our country. The authors conducted a qualitative cross-case analysis using existing literature, both empirical and public data sets (i.e., EBSCOhost research database system, DOJ, SAMHSA, CDC). After reviewing published literature on existing interventions, research instrumentation, methodologies, and findings, we conducted contextual stripping to identify general themes, delineating variation within the themes across studies, and creating a thematic profile. The analysis covered literature on general education, outreach, school-based interventions, referral to treatment, Narcan/naloxone training and distribution, and fentanyl testing strips as harm reduction (See figure 1).

School-Based Programs and Interventions

School-based mental health and social-emotional programs are common and essential for addressing the current fentanyl epidemic affecting youth in America. The average student is at risk or will be at risk for alcohol and substance use, violence, or mental health issues at least once during their school life (SAMHSA, 2019). The Substance Abuse and Mental Health Services Administration (SAMHSA) acknowledges educators’ impact in preventing substance use and misuse, especially when partnered with families to send





strong, consistent messaging about substance use (2022). To support these findings, SAMHSA provides fact sheets for families (2022) and handbooks for school administrators (2019) to guide these student support strategies.

Addressing the fentanyl crisis effectively requires implementing specific practices proven to yield positive health outcomes (Haegerich et al., 2019). Among these, two stand out for their effectiveness. The first practice involves intensive school and family-based programming in conjunction with education within public school settings. This approach leverages the combined strengths of educational institutions and family units in conveying critical messages and supporting students. The second practice focuses on engaging at-risk individuals through motivational interviewing. This technique helps understand and address their challenges, offers recommendations, and facilitates referrals to appropriate healthcare providers as needed. Together, these practices form a robust framework for preventing substance misuse and promoting the well-being of students.

School-Based Educational Curriculum

Schools are uniquely positioned to impact students' lives, not only through the scope of students they can reach, but also through the feasibility and consistent access they have to students' lives. Therefore, evidence-based best practice is essential for ensuring that the chosen interventions have the desired impact on the lives of youth. While the literature collectively describes an increased need for more rigorous research on specific substance-use programming and evaluations on effectiveness, several school-based interventions show promise that can guide administrators when choosing a curriculum to address the fentanyl and xylazine crisis.

This is Not About Drugs (TINAD) Program

The TINAD Program aims to alter the perceptions of the risk associated with prescription opioids and heroin among youth (Carson & Lane, 2021). The primary objective of TINAD is to heighten awareness regarding the prevalence and risks associated with prescription opioid misuse among adolescents. Importantly, the program is structured to seamlessly integrate into a single school class period. This design consideration significantly enhances TINAD's practicality and ease of implementation within the school curriculum, distinguishing it from longer-duration programs.

In one study among youth considered to be at low to moderate risk in seven high schools in and around Indianapolis, participants demonstrated a small but significant increase in understanding the similarities between opioids and heroin, the associated risks of opioid use, and awareness of available services for substance use disorders (SUDs). Participants showed no improvement in recognizing the signs of an overdose and understanding the risks associated with heroin use (Carson & Lane, 2021). Another study found that most

students (83%) liked the program and demonstrated significant changes in knowledge, self-efficacy, and safer attitudes; however, there was no marked change in intentions to misuse opioids in the future (Evans et al., 2020). Overall, researchers stated that TINAD showed promise for improving student opioid-related beliefs and impacting student perceptions of associated risks and was found to be feasible for classroom delivery as a brief prevention program (4 months) for middle and high school students (Evans et al., 2020).

Health and Opioid Prevention Education (HOPE) Curriculum

HOPE is a schoolwide drug prevention plan created in Ohio that requires collaboration between schools and the larger community to create programming that is “meaningful, relevant, and aligned with the skills-based approach” (Lorson et al., 2020, p. 20). This free K–12 opioid prevention curriculum is evidence-informed and has demonstrated positive outcomes in evidence-based drug prevention programs in schools (Ohio Department of High Education, 2020). Increased understanding and research on this curriculum’s implementation and impact is essential. However, it demonstrates promise through its unique focus on decision-making and interpersonal communication skills essential in building the ability for students to make healthy and drug-free choices (Lorson et al., 2020).

#iCANendthetrend.

While not specifically aimed at opioid use prevention, this virtual peer-led e-cigarette prevention and empowerment program created by Miley et al. (2022) is promising for prevention efforts, since students appear receptive to learning from someone older but still closer in age, such as college students. Overall findings showed positive reactions among the youth participating in the program, which emphasized liking the near-peer facilitator and virtual format. However, this trend was more likely to be expressed by middle school and high school participants (Miley et al., 2022).

Stanford Tobacco Prevention Toolkit

The Stanford Tobacco Prevention Toolkit emerges as a comprehensive, community-based participatory research (CBPR) initiative. This freely accessible online resource is designed with a focus on deterring tobacco usage among middle and high school students. The Toolkit encompasses a broad spectrum of tobacco-related topics, including emerging trends such as electronic cigarettes, traditional forms such as cigarettes, hookah, and smokeless tobacco, as well as fundamental issues of addiction and positive youth development.

A standout feature of the Toolkit is its diverse, interactive content. It includes engaging formats such as real-time quizzes, informative fact sheets, hands-on activities, and detailed presentations, all geared towards an immersive learning experience. The delivery of the Toolkit is primarily through trained educators, who have the flexibility to customize its content and duration. This adaptability allows educators to tailor their approach to drug prevention education, meeting the unique needs of their students.

This tobacco prevention program described by Gaiha et al. (2021) showed promise in increasing awareness and decreasing student intent to use. Researchers attributed their success in program development to their community-based approach, stating that this approach allowed the tool to adequately identify community-specific needs and topics of interest across students, educators, and parents (Gaiha et al., 2021). Overall feedback suggested that school-based prevention tools need the following qualities: relevant information, youth-friendly, avoids fear-inducing language, includes family at-home information, incorporated in classes other than health class, includes teaching refusal skills and resources available to students, and includes adequate educator training (Gaiha et al., 2021).

Screening and Referral to Treatment

Research indicates that the provision of an education curriculum improves knowledge and decreases intentions to use. Still, interventions such as motivational interviewing and referral to treatment are particularly helpful in reducing opioid overdoses. “Motivation interviewing that engage [students] in understanding discrepancies in behavior, resolving ambivalence, and exploring motivations and plans for change hold particular promise in reducing risky behavior and affecting health outcomes among those at highest risk for overdose” (Haegerich et al., 2019, p.8).

Screening, Brief Intervention, and Referral to Treatment (SBIRT)

The application of Screening, Brief Intervention, and Referral to Treatment (SBIRT) in adolescent populations, particularly within school settings, holds significant potential for preventing and reducing substance use. SBIRT is an evidence-based practice used to identify, reduce, and prevent any use of alcohol, tobacco, and other substances. The SAMHSA defines SBIRT as “a comprehensive, integrated, public health approach to the delivery of early intervention and treatment services for persons with substance use disorders (SUDs) as well as those who are at risk of developing these disorders” (2013). The relevance and effectiveness of SBIRT or brief interventions for adolescents are underscored by the research (Mitchell et al., 2016; Tanner-Smith et al., 2012; Winters et al., 2011). The adaptability of SBIRT’s brief interventions, which are designed to motivate behavior change, makes it an ideal approach for school environments, where time and resources may be limited.

Through SBIRT, practitioners identify and intervene to reduce substance use that increases the risk of physical and emotional health problems, disease, and injury, as well as school, work, family, and social problems. In addition, SAMHSA (2016) notes the growing evidence for the effectiveness of SBIRT in addressing other forms of substance use and related mental health challenges, such as depression, anxiety, and suicide risks. This evolving body of research points towards the promising potential of SBIRT as an emerging area for both practice and research in the field of adolescent substance use and mental health.

Preventing Poisonings and Emergency Response

Responding to the fourth wave of the opioid epidemic, where youth are often unknowingly ingesting fentanyl, research suggests additional programming beyond the educational curriculum and substance use prevention and intervention (Breitenbucher et al., 2023; CDC, 2022b; Muller & Ceron, 2022). Research suggests that the combination of public education and naloxone distribution significantly reduced opioid overdose deaths (Haegerich et al., 2019).

Narcan/Naloxone Administration

Naloxone, the generic form of the brand-name drug Narcan, has emerged as a crucial tool in combating the alarming rise in fentanyl overdoses, particularly among youth and in school environments. Given the increasing incidence of opioid use and overdoses in adolescents, the availability and prompt administration of naloxone in schools have become vital. This intervention can be a lifesaver for young individuals who have encountered both licit and illicit opioid use, including fentanyl (Abdelal et al., 2022; Kahn et al., 2022; White et al., 2021).

The urgency for naloxone to be readily accessible and distributed is underscored by its efficacy in reversing potentially lethal overdoses. Initiatives like take-home naloxone programs and over-the-counter naloxone

sprays have been piloted to enhance this accessibility (Bozat-Emre et al., 2018; Med Lett Drugs Ther, 2016). In the context of schools, these measures can be pivotal in providing immediate lifesaving interventions and in fostering a safer environment for students.

Kahn et al. (2022) examined overdose experiences and naloxone rescue in opioid users, finding that most individuals had little recollection of their overdoses. Acute withdrawal symptoms, disorientation, and intense emotions were common upon regaining consciousness. While naloxone is highly effective in saving lives, it does not address the underlying behaviors or addiction to opioids. Consequently, many individuals resume opioid use after an overdose (Kahn et al., 2022; White et al., 2021). This aspect is particularly concerning in adolescent populations, highlighting the need for comprehensive addiction treatment and support in conjunction with naloxone administration.

The increase in individuals receiving multiple administrations of naloxone, from 18.4% to 28.4% between 2015 and 2020 (Abdelal et al., 2022), points to the need for ongoing care and support systems, especially for youth. Kavanaugh (2022) presents a thought-provoking discussion on the pros and cons of naloxone use, emphasizing that while naloxone can undoubtedly save lives, it is not a solution to addiction. This insight is particularly relevant in school settings, where the administration of naloxone should be coupled with educational programs and resources for treating and healing from addiction.

Narcan/Naloxone Training and Education

Researchers have developed strategies to increase the training and education availability of fentanyl effects and the use of naloxone. This initiative extends beyond traditional first responders to encompass a broader group, including school personnel, teachers, nurses, and mental health providers. These individuals often serve as the initial points of contact in emergency situations within their respective environments, making their preparedness essential. Communities have implemented training protocols for first responders tasked with naloxone administration. Some training programs aim to provide first responders with the best practices for improving emergency response to individuals using drugs (e.g., opioids). Murray et al. (2022) developed asynchronous training for first responders to educate them on best practices for harm reduction strategies. In another study, a naloxone administration train-the-trainer model for first responders was piloted in Missouri as well as the development and deployment of an online course to improve the program's sustainability (Wood et al., 2021). Making naloxone available to those who need it is an essential lifesaving tool for schools.

Fentanyl Testing Strips

Young adults are highly willing to use fentanyl testing strips (Goldman et al., 2019; Krieger, Goedel, et al., 2018; Krieger, Yedinak, et al., 2018). The high willingness to use the testing strips adds to their value as a poisoning prevention strategy. Researchers have examined the benefits of rapid fentanyl test strips to detect fentanyl in illicit drugs (Goldman et al., 2019). Goldman and colleagues reported benefits among young adults who used fentanyl test strips, such as altered drug use behavior (e.g., not using the drug, keeping naloxone within proximity, and sharing the testing strips with friends).

The Challenges

Despite the urgent need for comprehensive school-based programming, statistics show that most students are not receiving the needed services (SAMHSA, 2019). Overall trends indicate decreased student participation in prevention programming and mental health treatment. Further, vulnerable youth populations—Latinx,

females, students in rural areas, and low socioeconomic status backgrounds—are significantly less likely to participate in mental health treatment (Salas-Wright et al., 2019).

Two of the biggest challenges faced in addressing these issues are (1) an overwhelming need for comprehensive mental health services within schools, and (2) a significant shortage of school-based mental health providers. These challenges exacerbate the existing problems and create substantial barriers to effective service delivery.

Several additional challenges have been identified that contribute to the insufficient reach and effectiveness of comprehensive school-based programming. A lack of training among school personnel in mental health and substance use issues hinders the implementation of effective interventions. Poor implementation further compounds these issues, resulting in programs that fail to meet the complex needs of the student body. These findings underscore the necessity for increased funding and resources, targeted training for educators and school staff, and improved implementation strategies to ensure that school-based mental health and substance use prevention programs effectively reach and serve all student populations, especially those that are most vulnerable.

In a study exploring New York’s school-based health center providers’ (SBHC) beliefs and perceptions surrounding strategies to prevent opioid misuse through SBIRT, 51% felt they did not have the skills to prevent it. In comparison, 66% felt they lacked confidence (Harris & Rich, 2022). SBHC participants recognized the severity of the crisis, but few felt that misuse and overdose were risky to the students they served (Harris & Rich, 2022).

Research has identified key challenges in the implementation of programs such as TINAD in school settings. A notable issue is the lack of sufficient training and confidence among school-based health center providers, as found in the study by Harris & Rich (2022). This deficiency hampers effective program delivery. Furthermore, while teachers were invited to go through the training cost-free, most teachers still needed to complete the training. In a study assessing the beliefs of SBHC providers, findings showed that even when believing the interventions to be effective, the providers did not implement prevention or treatment because of delivery barriers (Harris & Rich, 2022). While participants felt that SBIRT could be effective with the opioid crisis, only 47% were familiar with the model, and even then, there was no systematic delivery: 67% only did a brief intervention, and 78% only did referrals (Harris & Rich, 2022). This suggests that the training necessary for program delivery may not have long-term feasibility for the teachers responsible for implementing the program in the future (Evans et al., 2020).

Next Steps and Future Research

Increased rigorous research is needed to determine the impact and effectiveness of school-based preventative programs on student substance use, specifically opioid use. This research should focus on evaluating the effectiveness of these programs and identifying implementation barriers. It is essential to develop and provide targeted training for school staff members, encompassing education on attitudes towards substance misuse, skill-building, and specific roles in program administration. In addition, training should include practical aspects such as administering naloxone and using rapid fentanyl testing strips, as highlighted by Harris & Rich (2022). This comprehensive approach is vital for effective implementation and achieving desired outcomes in substance use prevention.

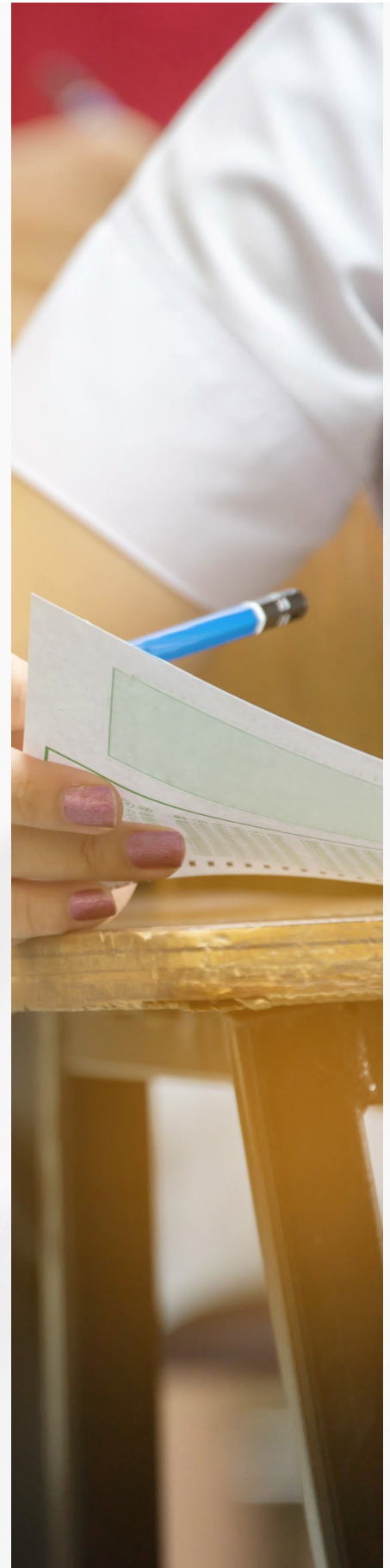
Conclusions and Recommendations

The opioid crisis presents a formidable challenge in the United States, particularly impacting young populations in educational settings. As the nation grapples with this epidemic, there is an increasing need to implement effective strategies within schools to combat the issue. Current research, including studies by Welsh et al. (2019), underscores the effectiveness of mandated alcohol and tobacco prevention programs in reducing substance abuse among youth. However, the successful implementation of these programs is not without challenges, including discrepancies between policy and practice, and the need to address various implementation barriers.

The delivery of drug prevention program curricula in schools is a multifaceted task requiring careful consideration and effective administration. This decision is as critical as the curriculum content, given the complexities of implementing these programs in educational settings. The challenge lies in determining the most effective provider, requiring schools to assess various options against the unique needs of their communities. Classroom teachers can effectively establish rapport and leverage their teaching skills for successful program implementation, but their already high workload may deter additional responsibilities. Alternatively, mental health professionals bring specialized training and experience in substance use disorders (SUDs), offering expertise in answering questions and screening youth. However, their scarcity and potential cost implications, coupled with a possible lack of classroom management skills, present significant challenges (Rigg & Menendez, 2018).

The role of law enforcement in school environments, particularly regarding the opioid crisis, has evolved to encompass more community-oriented and relationship-building functions. Law enforcement officers, including school resource officers (SROs), are integral in educating youth about the dangers of substances such as opioids and fentanyl. They play a key role in increasing awareness, implementing training and mentorship programs, and fostering a collaborative and inclusive atmosphere among law enforcement, students, teachers, and administrators. Trained SROs, adept in recognizing and responding to overdoses, are crucial in the fight against the opioid crisis. Their engagement in crisis intervention and de-escalation strategies is essential. However, addressing barriers such as negative perceptions of law enforcement and ensuring a cooperative approach between educators and law enforcement are vital for the successful implementation and management of these prevention programs.

To effectively address the fentanyl crisis, schools must adopt a comprehensive strategy that combines educational efforts with practical



interventions. Central to this approach is enhancing the curriculum to include in-depth education on the risks associated with opioids, specifically fentanyl. Programs such as TINAD and HOPE are critical in this regard and should be regularly updated to reflect the latest research and trends in substance abuse.

In addition, it is vital to equip staff members and students with skills and tools for immediate response, such as naloxone training and access to fentanyl testing strips. This hands-on approach must be supported by strong partnerships with law enforcement and healthcare providers, ensuring a coordinated response to potential incidents. Key action steps include:

- 1. Enhanced training and curriculum development:** Schools must invest in the development and delivery of specialized training for educators and staff. This includes SBIRT and motivational interviewing as intervention strategies, recognizing signs of substance misuse, and effectively using intervention tools such as naloxone. Incorporating programs such as TINAD, HOPE, and the Stanford Toolkit into the curriculum can also raise student awareness.
- 2. Collaborative efforts:** Building strong partnerships among schools, law enforcement, healthcare providers, and community organizations is essential. These collaborations can facilitate educational sessions, workshops, and community outreach programs, ensuring a coordinated response to the crisis.
- 3. Policy advocacy and resource allocation:** Advocating for policy changes that prioritize and fund substance abuse education and prevention programs is key. Engaging with local and state policymakers to secure the necessary resources will support the implementation of these critical programs.

By integrating these strategies, schools can create a more effective shield against the complexities of substance abuse, particularly the growing menace of fentanyl, ensuring the safety and well-being of their students. Addressing these challenges requires a collaborative effort to effectively protect and educate youth against the dangers of fentanyl and related substances. These additions, alongside the existing strategies, will strengthen the schools' capacity to address the complexities of substance abuse, particularly concerning fentanyl.

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Figures and Tables

Figure 1: Frequency of Strategies Reviewed

