We Are Wise Owls

Early Prevention Using a Digital Video Intervention in the Afterschool Setting

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A recent survey of U.S. youth substance use showed that rates for alcohol, tobacco, and marijuana use were similar to those during the previous year—with a rise, however, in overdose deaths, possibly due to synthetic opioid abuse. About 20–30% of high schoolers reported vaping, with a small increase in vaping cannabis in the preceding year. Past-year use of alcohol for high school seniors was 52%, between 6% and 8% of high schoolers reported illicit drug use other than marijuana, and over one-fifth of middle schoolers perceived taking prescription narcotics as high-risk behavior (National Institute on Drug Abuse, 2022).

Initiation of substance use may be due to a youth's natural curiosity about substances, media exposure, or easy availability of products such as alcohol or tobacco (Chadda, 2019). Although the age of initiation of these behaviors is generally in middle and high school, contributing individual, family, and community risk factors (such as parent and peer permissive attitudes and use, childhood trauma, school/academic problems, family troubles, and poverty/violence) can be experienced much earlier (National Institute on Drug Abuse, 2016). Developmental system models of substance use describe the risk factors—and interactions of risk factors—in childhood and adolescence that may be

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predictive of future use or addiction (Partnership to End Addiction, 2022).

Some individual and environmental risk factors experienced during childhood, such as family problems, are predictive of behavioral and conduct problems that manifest in grade school in conflict with peers and teachers. These problems may then lead to peer rejection, delinquency, and substance use in secondary grades. Specifically, problem behaviors during early and late elementary school were shown to be related to progressively delinquent behaviors and substance use in secondary school. Disadvantaged children who experienced risk factors before middle school were most at risk of future substance use or addiction (Partnership to End Addiction, 2022).

Early Prevention and Digital Interventions

A window of opportunity, therefore, opens for early prevention. With decreases in protective factors and increases in risk factors occurring during pre-adolescent and teen years, the elementary age may be critical. The earlier the initiation, the higher the risk for future problems (National Institute on Drug Abuse, 2016). Early childhood, therefore, is a key period for education about safe, healthy behaviors to prevent later substance use (Chadda, 2019). During this developmental period, a child's brain is growing and forming neurological connections that can be especially affected by these individual, family, and community risk factors. As children are attempting to successfully navigate the transition from the home environment to the academic and social environment of the school, their social–emotional and behavioral health may be affected by the same risk factors (National Institute on Drug Abuse, 2016).

Substance use prevention literature focusing on population-based interventions supports the effectiveness of life stage-based early prevention interventions for children. Investments in evidence-based, universal prevention interventions (targeted toward a general population and considering all as "at risk") in early childhood seem to reduce later costs for drug treatment, poor health, and academic problems—not only socially, but also economically (Fox et al., 2015).

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Elementary school is an ideal age and setting at which early prevention can be addressed. For example, a review found that at this age, many children could already identify and were aware of some effects of alcohol and acquired attitudes toward the substance from parents and adults, and their awareness and knowledge increased as they became older (Jones et al., 2017). Reviews and meta-analyses have indicated that universal, school-based prevention interventions at the elementary-age level have shown at least small, positive effects on alcohol, tobacco, and other drug use. The interventions that showed the most promise included strategies focused on social–emotional learning and healthy, alternative activities (Onrust et al., 2016).

Specifically, interventions focused on substance use prevention and improving personal and life skills in the early years are critical in this developmental stage to delay or prevent future use and pro-use attitudes. The health and social costs of substance use in children and youth can be considered a public health issue; effective interventions across the lifespan are needed. Because early childhood risk factors and early substance exposure can lead to later use and increased risk of mental health issues, early prevention is considered necessary (Nebhinani et al., 2022). Many states recommend starting school-based prevention education in the early elementary grades as a best practice, with continuing booster sessions throughout the elementary years (Pettingill, 2018).

Digital media interventions, including character-focused media, can include audio, video, and photos that may be an engaging and interactive prevention education strategy for elementary-aged children (Reid Chassiakos et al., 2016). Knowledge acquisition and cost-effectiveness were generally favorable with digital interventions, but they showed only moderate effectiveness for attitude changes (Pradhan et al., 2019). When digital interventions were studied for use in promoting and educating for general health in children and teens, limited effectiveness was demonstrated. However, effectiveness may improve when used as part of a multicomponent or hybrid intervention (Fernandez-Leon et al., 2025; Oh et al., 2022). Specifically, in universal substance

use prevention in the school setting, digital media interventions showed limited to some potential promise for reduced use, but studies have focused mostly on adolescents (Fernandez-Leon et al., 2025; Greene et al., 2021; Liu et al., 2023).

An overview of systematic reviews of mental health and substance use prevention interventions for elementary school students (and interventions extending through middle school) was also conducted. Universal interventions demonstrated some positive effects on academics, social behaviors, and substance use. The review found a lack of digital interventions, programs conducted outside the school setting, and interventions for the early elementary level, with recommendations for more study in these areas (Harrison et al., 2022).

Afterschool Prevention

With a focus on decreasing risk factors for substance use such as low age of initiation and permissive attitudes and use among parents and peers, community-based interventions can help positively influence a young person's likelihood of use and future use (National Institute on Drug Abuse, 2016). Thus, the afterschool setting may be another setting where early prevention interventions can be successful. A systematic review found that afterschool programs that promote general health and positive development for children and teens tend to improve participant self-worth and community involvement. Possessing these characteristics decreases youth susceptibility to risky health, social, and substance use behaviors (Donovan et al., 2025).

The afterschool setting may be another setting where early prevention interventions can be successful.

Afterschool programs generally provide students with extended learning and enrichment opportunities. Those that follow best practices such as standardized curricula and reinforcing activities have demonstrated increased academic achievement, school attendance, classroom participation, and improved social behaviors in student participants (Afterschool Alliance, 2017). One U.S. state's study showed mixed evidence for improved academic achievement but some positive outcomes for social behaviors, class participation, and health-related behaviors (Biddle & Mette, 2016). A longitudinal study of elementary afterschool student participants found that academic and social behaviors improved over time, with sustained program participation leading to better outcomes (Grogan et al., 2014). Participation in quality afterschool programs at the elementary level has demonstrated student improvements in social behaviors. Following developmental models, Vandell et al. (2021) determined that participation in early childhood education as well as afterschool programs during preschool and elementary school led to improved social behaviors in adolescence and fewer law violations in adults.

Purpose

Risk factors experienced in childhood may predict future substance use; therefore, prevention education should start early (Chadda, 2019; Partnership to End Addiction, 2022). Both school- and community- or afterschool-based prevention interventions may improve knowledge and skills leading to decreased risk factors for use (Afterschool Alliance, 2017). More studies on digital interventions and interventions in elementary-level and in afterschool programs were recommended (Harrison et al., 2022). Therefore, this exploratory study was undertaken to determine student participant knowledge and attitudes about healthy, drug-free lifestyles pre- and post-interactive digital video prevention intervention in an elementary afterschool setting.

Methods

Sample

After institutional review board approval, afterschool program administrator consent, parent/guardian consent, and elementary student participant assent, 42/42 (100%) elementary students in an afterschool program consented to study participation. The program was a collaboration between a youth-serving agency and a small, rural school district in a midwestern U.S. state. Student participants were in kindergarten through second grade. Thirteen kindergarten students participated, as did 14 first-grade students and 15 second-grade students. Most

students were boys (27/42, 64.3%), and almost all (38/42, 90.0%) were White.

Instruments

Demographic information was collected from participants; their pre- and post-program knowledge about healthy, drug-free lifestyles was measured using confidential tests included in the Wise Owl's Drug Safety Kit curriculum, based on effective, age-appropriate strategies for K-3 drug education (Human Relations Media, 2024). The three tests included 10 statements that related to the three topic areas covered in the program and took approximately five minutes each to complete. The researcher read aloud each statement in the test; students circled their responses as to whether the statement was "true" (visual of a smiling cartoon owl) or "false" (visual of a frowning cartoon owl) in the test. Examples of statements included in the Part 1 test (*Is that good for me?*) are "Fruit is good for you," "Sleep helps your brain think better," and "Exercise is harmful to your body." Examples of statements included in the Part 2 test (*What is a drug?*) are "Alcohol is a drug that can be smoked," "Tobacco is a drug that makes a person's heart beat faster," and "It's against the law for kids to buy or drink alcohol." The Part 3 test (*What is medicine?*) included statements such as "Medicines are drugs that can help you when you're sick," "Only doctors need to read medicine labels," and "If something looks tasty, it is probably safe to eat." Answer keys to these tests were provided with the curriculum. A correct response to a statement was assigned one point, and an incorrect response was assigned zero. Students could earn a maximum score of 10 points for each quiz.

Post-intervention participant attitudes toward healthy, drug-free lifestyles were measured using the confidential, qualitative "Draw-Write-Tell" technique. A long-standing, creative, child-centered method for gauging child perceptions in health education research, this technique allows children to draw how they feel, write an explanation, and then verbally explain to the researcher about their drawing without preset queries. This strategy decreases researcher interference and presents the child's interpretation as the key data point. Researchers then obtain holistic perceptions and themes by linking the objects, people, and places drawn with the child's verbal description (Angell et al., 2014). After the last lesson, the researcher's verbal prompt asked participants to draw how they felt about a healthy, drug-free life, using paper and pencil provided. Student participants drew a picture of their attitudes in a box provided on a worksheet. Next, they wrote and verbally explained their picture to the researcher, who also took notes.

Procedure

An afterschool program (a partnership program between a school district and a local YMCA) was held on-site in three elementary school classrooms for two hours after school dismissal. The typical program schedule in each room was supervised by a certified district teacher and included physical activity, a healthy snack, homework assistance, and a special event provided by community organizations. A substance use prevention coalition sponsored and presented the event "We Are Wise Owls."

Wise Owl's Drug Safety Kit's (Human Relations Media, 2024) curriculum uses interactive digital videos (live-action and cartoon videos relating to drug safety), followed by posters, active learning activity cards and worksheets, and cooperative learning games to instruct students to make healthy lifestyle choices, especially related to drugs and medicines. After each video, discussion and concept reinforcement followed using the fun, interactive activities.

A substance use prevention coalition sponsored and presented the event "We Are Wise Owls."

Adult volunteers from a community-based substance use prevention coalition reviewed the Wise Owl's Drug Safety Kit's teacher's resource book (Human Relations Media, 2024), student learning objectives, and ancillary materials. They then previewed the three digital video prevention lessons, with accompanying posters and activity cards and worksheets, to prepare and practice the lessons for afterschool program presentation. The program was presented once each week for three weeks for 45 minutes each session during the fall school semester.

Immediately before teaching each of the three lessons, the coalition volunteers administered the written pre-knowledge quiz for that lesson to student participants.

Lesson 1, "Is that good for me?", was then taught by the volunteers. In lesson 1's video, participants were introduced to the characters Wise Owl and his niece Wendy, who teach viewers about healthy, drug-free lifestyles. Using three vignettes, healthy food choices, sleep and exercise, and alcohol abstinence were covered as participants learned that some "cool" things are not always safe. An interactive, reinforcing activity based on video content followed.

The next week, in lesson 2, "What is a drug?", Wise Owl teaches Wendy about the dangers of alcohol and tobacco through three vignettes, reinforcing the benefits of a drug-free lifestyle and noting that those who make safe, healthy choices are cool kids. An interactive, reinforcing activity based on video content followed.

During the final week, in lesson 3, "What is medicine?", Wendy learns that medicines can help but must be used correctly and safely. The three vignettes cover asking an adult for help, how medicines may look like candy, and that taking someone else's medicine is not safe. An interactive, reinforcing activity based on video content followed.

Immediately following instruction in each of the three lessons, the coalition volunteers administered the written post-knowledge quiz to student participants. Immediately following lesson 3, the coalition volunteers also administered the written Draw-Write-Tell attitude assessment to student participants.

Analysis

Students' pre- and post-tests were scored following the answer key provided by the Wise Owl's Drug Safety Kit curriculum. A correct response to each statement was assigned a score of one point, and an incorrect response was assigned a score of zero. The total summed score for each test was calculated for each student. Independent *t*-tests were then used to determine differences in pre-post knowledge item score and total summed score for the three tests.

A modified version of Kuhn's thematic analysis was used to examine post-program themes regarding participant attitudes depicted in the Draw-Write-Tell pictures. Elements and text were identified in relation to their location, relationships, motives, and activities. Interpretation was based on how the elements and text influenced their attitudes and perceptions (Kisovar-Ivanda, 2014; Kuhn, 2003). Specifically, objects, people, and places drawn in addition to any text and verbal explanation were identified and categorized by three researchers using consensus to decrease bias. Interpretation of any relationships and influences on perceptions and attitudes was made with participant school and community culture in mind. Main themes were then determined through triangulation of the drawing-writing-telling.

Results

An independent *t*-test was conducted to evaluate whether student participants' knowledge about healthy drug-free lifestyles improved after participating in the three interactive digital video prevention lessons (see Table 1). Results were as follows:

- Lesson 1: The test for summed scores was not significant, $t\ (71) = -1.85$, $p = .068$, but results showed an increase in overall scores after participating in the lesson. Student participants' knowledge that "It is against the law for kids to drink wine" increased significantly, $t\ (71) = -3.51$, $p < .001$.
- Lesson 2: The test for summed scores was significant, $t\ (76) = -3.39$, $p = .001$, and results showed an increase in overall scores after participating in the lesson. Specifically, four areas of knowledge significantly improved after participating in this lesson: the understanding that the brain sends signals to the bodies to help with breathing, thinking, and talking ($p < .001$); "Beer is a kind of alcohol" ($p = .006$); "Cigarettes are made of tobacco leaves" ($p = .009$); and "Tobacco can be smoked or chewed" ($p = .009$) (see Table 2).
- Lesson 3: The test for summed scores was not significant, $p = .059$, but results showed an increase in overall scores after students participated in the lesson. Student participants' knowledge that "Medicines are drugs that can help you when you're sick" increased significantly, $p = .05$ (see Table 1).

Results of the modified thematic analysis (Kisovar-Ivanda, 2014; Kuhn, 2003) determined that, based on their post-program pictures, participants' attitudes about healthy, drug-free lifestyles were emphatically "anti-drug." Objects, people, and places drawn generally fell into two categories or themes: saying "no" to drugs and to not take someone else's prescribed medicines. Results were easily placed in cultural context with the help of the participants, who

Table 1. Wise Owl Sum Score Table

	Pre/Post Test	*n*	*M(SD)*	Difference *M(SD)*	*t*	*p*
Part 1: "Is that Good for Me?" Sum Score	Pre	40	7.20(2.26)	–0.95(2.18)	–1.85	.068
	Post	33	8.15(2.09)			
Part 2: "What Is a Drug?" Sum Score	Pre	42	6.31(2.04)	–1.50(1.942)	–3.39	.379
	Post	36	7.81(1.82)			
Part 3: "What Is Medicine?" Sum Score	Pre	40	6.78 (1.86)	–0.69(1.61)	–1.88	.014
	Post	36	7.47(1.28)			

were excited to describe in detail all the features in the pictures they drew.

For kindergarten students, the message to "not take anyone else's medicines" was drawn in most (7/13, 54%) pictures as the primary theme, followed by a secondary theme of "eating healthy," with a few (3/13, 23%) pictures of apples. For first graders, the overall theme (9/14, 64%) was "say no to drugs, if offered." Pictures were drawn of owls with text saying "No." For second graders, pictures of family and friends with the themes of "saying no to alcohol, drugs, and cigarettes" were the most often (7/15, 47%) drawn. One text stated, "No, no, no drugs," and another, "I learned no to alcohol." Overall, most pictures described "saying no to taking other's medicines" and "saying no to any other type of drug" (see Figure 1).

Figure 1. One Student's Post-Program Illustration: "Do you want a drug? No!"

Discussion

This exploratory study examined a digital prevention intervention at the elementary level in an afterschool program. Starting substance use prevention interventions in the elementary years may positively influence future non-use (Chadda, 2019). Although many early prevention interventions are school based, programs conducted in the general community and in afterschool settings also show promise (National Institute on Drug Abuse, 2016). An elementary-level, afterschool-based substance use intervention was conducted by community volunteers that relied heavily on interactive digital videos to provide prevention content in a fun way for participants. After the intervention's completion, participant scores for overall knowledge of healthy, drug-free lifestyles improved, and they significantly improved their knowledge of how alcohol and medicines affect the body. Participant post-program attitudes about healthy, drug-free lifestyles were anti-use, as strong themes of "do not take anyone else's medicines," "say no to alcohol, drugs, and cigarettes," and "eat healthy" were evident.

Early Prevention and Digital Interventions

Prevention education at the elementary level is necessary because conducting prevention interventions after substance use patterns have already begun is too late. Problem behaviors experienced early in life are related to higher risk for future use (Partnership to End Addiction, 2022); therefore, the early elementary ages can be a critical period to introduce prevention education (Chadda, 2019). Although many young students were already aware of the negative effects of alcohol

Table 2. Wise Owl Lesson 2

Statement	Pre/ Post Test	*n*	*M(SD)*	Difference *M(SD)*	*t*	*p*
Alcohol is a drug that can be smoked.	Pre	41	0.439(0.502)	0.078(0.495)	0.689	.493
	Post	36	0.361(0.487)			
Alcohol changes how the brain works.	Pre	39	0.769(0.427)	–0.049(0.411)	–0.503	.312
	Post	33	0.818(0.392)			
Tobacco is a drug that makes a person's heart beat faster.	Pre	40	0.525(0.506)	–0.218(0.478)	–1.970	.001
	Post	35	0.743(0.443)			
Our brains send signals to our bodies that help us breathe, think, and talk.	Pre	42	0.691(0.468)	–0.309(0.346)	–4.287	<.001
	Post	35	1.000(0.000)			
Beer is a kind of alcohol.	Pre	42	0.619(0.492)	–0.267(0.423)	–2.854	<.001
	Post	35	0.886(0.323)			
Cigarettes are made of tobacco leaves.	Pre	42	0.643(0.485)	–0.246(0.417)	–2.681	<.001
	Post	36	0.889(0.319)			
Tobacco can be smoked or chewed.	Pre	42	0.595(0.497)	–0.262(0.438)	–2.690	<.001
	Post	35	0.857(0.355)			
Tobacco helps a person's lungs feel better.	Pre	41	0.732(0.449)	–0.125(0.408)	–1.335	.007
	Post	35	0.857(0.355)			
It's against the law for kids to buy or drink alcohol.	Pre	42	0.738(0.445)	–0.086(0.420)	–0.882	.074
	Post	34	0.824(0.387)			
Some grown-ups make choices that are not good for them.	Pre	41	0.683(0.471)	–0.123(0.440)	–1.220	.014
	Post	36	0.806(0.401)			

(Jones et al., 2017), participants in the current study were not; this program significantly improved their knowledge of how alcohol affects the body, that beer is alcohol, and that it was illegal for them to drink wine. Participants in the current study received age-appropriate, fact-based education reinforced by discussion with the community volunteers that may have helped improve knowledge scores. Starting prevention education early, as in the current study and recommended by many state education departments (Pettingill, 2018), may delay or prevent future use and pro-use attitudes (Chadda, 2019).

Problem behaviors at this early age as a result of family and community risk factor exposure may also lead to substance use in later years (National Institute on Drug Abuse, 2016; Nebhinani et al., 2022), especially for disadvantaged students (Partnership to End Addiction, 2022). Participants in the current study were generally from low-income homes, as the afterschool program was a partnership between the school district and a YMCA with many students' fees subsidized. Early prevention education for disadvantaged students may potentially decrease some risk factor exposure before middle school, where risk for future use increases (Partnership to End Addiction, 2022).

Although studied mostly in teens for prevention education with some limited effectiveness (Greene et al., 2021; Liu et al., 2023), digital media have been demonstrated to be an appealing teaching strategy

for this age group (Reid Chassiakos et al., 2016). The innovative, digital teaching strategy (use of technology for participatory education) used in this study, therefore, may have assisted in participant knowledge and attitude improvements. Possibly because of the interactive nature of the videos and the fact that the content was applied by the actors to everyday situations, participants' knowledge of those areas may have improved.

The curriculum also focused on positive attitudes and healthy, drug-free activities, similar to interventions in the literature that showed the most promise (Onrust et al., 2016). Participant attitudes post-intervention were strongly anti-drug and pro-healthy activities. The themes were action-oriented, such as "eat healthy, say no…" with pictures of fruits and vegetables and of participants saying no to peers. Again, because community risk factors such as parent and peer permissive attitudes toward use can be experienced in the elementary years (National Institute on Drug Abuse, 2016), pictures showing students taking action post-intervention through behaviors such as resisting peer pressure and making healthy choices is encouraging.

> The hybrid approach of lecture and digital seems to improve overall curricular effectiveness.

Afterschool Prevention

Community-based interventions, as in the current study that used community volunteers, can positively affect substance non-use in youth (National Institute on Drug Abuse, 2016). The discussions with the community volunteer facilitators—adults who were not the participants' regular teachers—about the video messages to make healthy lifestyle choices, especially about drugs and medicines, may have also reinforced prevention facts learned. It seems, overall, that participants showed some knowledge improvement and possessed anti-use attitudes after the digital media-based, afterschool intervention. Results of the current study in the out-of-school setting are like those demonstrated by universal, school-based programs (Harrison et al., 2022). Both found at least some positive outcomes, possibly because of the focus on social skills and healthy lifestyles (Onrust et al., 2016). Because afterschool enrichment programs may also decrease antisocial actions and improve health-related behaviors (Biddle & Mette, 2016), substance use prevention knowledge and attitudes could also be indirectly affected. In addition, these improved social actions and healthy behaviors are characteristics that decrease susceptibility to future substance use behaviors (Donovan et al., 2025).

Limitations

There are several limitations to this study. With a small sample size and from only one afterschool program for an exploratory-type study, generalizability is restricted. Although a one-group pre-post-test design for the knowledge quiz allowed testing under the control condition and then after the intervention, there may be other reasons, in addition to the lack of a control group, for our significant pre-post-test differences. Participants may have learned and remembered content (testing effect) from the pre-test, as each pre-test was given immediately before and each post-test was given immediately after each lesson, or another prevention lesson or activity may have been taught at school or through the media during the intervention period. In addition, the true-false style questions, although in a brief, age-appropriate quiz with pictures of owls as true-false symbols, may have allowed more guessing than other question types.

The addition of the qualitative Draw-Write-Tell method may have favored certain students with more artistic talents over the others. In addition, researcher inexperience in interpreting the student-drawn pictures may have biased the results. Moreover, with no pre-drawing, it cannot be determined whether there was a change in participant attitudes or if they were already strongly anti-drug before the intervention.

Implications for Early Prevention in the Afterschool Setting

Because the intervention in this current study demonstrated some positive effects similar to those of school-based programs, conducting interventions in the out-of-school time setting may be promising, especially for elementary-aged students. As part of enrichment activities, events, and programs in afterschool time, program directors and community substance use coalition leaders can work together to implement fun, educational, and effective prevention programming. Using the technology in school classrooms provided in the afterschool program, interventions featuring interactive,

digital video media can be delivered easily, and prevention programming can start earlier to try to mitigate individual, family, and community risk factors leading to substance use initiation by middle school.

Interestingly, adult volunteers' informal "debriefing" after each lesson indicated that they perceived that participants learned best when the information in the videos was immediately applied in "What would you do…?" scenarios, and they were excited that participant answers were factually correct. Volunteers noted that the participants were engaged in every lesson through active listening, asking questions, and completing activities. During conversations with volunteers, participants recognized healthy behaviors and prevention techniques, and practiced resistance skills. As lessons progressed, the participants continued to recall what they had learned from the previous lessons. Afterschool professional teaching staff present during the program remarked that participants seemed excited to listen to the volunteers, especially with the use of the videos. Ending each lesson with physically active and socially interactive review games also seemed to reinforce how fun it was to make healthy, positive behaviors a daily habit. Participants were also excited to tell the researchers all about their drawings. Researchers gleaned a wealth of information from the explanations that assisted in their thematic analysis.

Results also suggest that interventions for elementary-school students that are of short length and brief duration may still be effective. For afterschool directors, integrating effective substance use prevention interventions into a two-to-three-hour timeframe that must include physical activity, homework help, and other scheduled events may be challenging, but is now doable. For community prevention coalitions, although time-consuming, volunteering to facilitate interventions in the afterschool is a viable strategy to get the anti-drug message out to a receptive audience. Continuing and sustaining early substance use prevention interventions in the elementary afterschool program could lead to improved knowledge and behavior outcomes as do other programs described in the literature (Grogan et al., 2014).

Pre-packaged and digital prevention interventions, too, can make lessons easier for non-teachers like community volunteers to instruct in the afterschool setting. Pre-packaged, standardized lessons require only short preview and practice sessions, and curricular fidelity can be enhanced using digital interventions (Fernandez-Leon et al., 2025). More cost-effective than face-to-face life skills interventions, digital interventions can be integrated into those face-to-face lessons. The hybrid approach of lecture and digital seems to improve overall curricular effectiveness (Pradhan et al., 2025).

As this was an exploratory-type study that demonstrated some positive effects of a digital media intervention on participant knowledge and attitudes of healthy, drug-free lifestyles, confirmation of results in larger studies with control groups would be the next step. Other suggestions for future research are to examine whether any healthy behaviors that were drawn by participants were observed by their teachers, even in the short term. Furthermore, for the long term, it is recommended to track participants longitudinally to follow their future use or non-use patterns.

Conclusion

Elementary school-aged children experience risk factors that are predictive of future substance use, but this age is far before they typically receive drug prevention education. The digital video-based, afterschool intervention in this exploratory study can bridge this gap. Interventions in afterschool settings allow students to receive extended learning opportunities that may have helped increase participant knowledge about healthy, drug-free lifestyles. Moreover, qualitative results demonstrated participant positive attitudes toward healthy, non-use activities. Although the afterschool intervention program in the current study was of short length and duration so it could be developmentally appropriate for early elementary-age students, it did demonstrate promising results.

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