Evaluation of the Keepin' it REAL Drug Prevention Program

by

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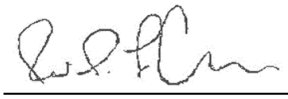

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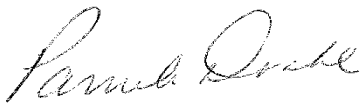

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Abstract

Alcohol, tobacco, and other drug (ATOD) use among adolescents is a severe public health problem in the United States. ATOD prevention programs have been implemented in schools to reduce the adverse health and social consequences of youth ATOD use. This study examined the effectiveness of the keepin' it REAL (kiR) drug prevention program among 118 adolescents from two different high schools in Southern California. A quasi-experimental design was utilized to determine the impact of the program on adolescents' ATOD use behaviors. It was hypothesized that students who received the kiR program would report a decrease in ATOD use behaviors and an increase in intention to abstain from ATOD use, intention to avoid ATOD use, intention to use ATOD resistance skills, and self-efficacy to refuse ATOD offers compared to students who did not receive the kiR program. A series of two-way repeated-measures ANOVAs were used to examine changes in outcome variables between the treatment and comparison group. Results indicate that there was no effect of the kiR program on any of the outcome variables of interest. Future research is warranted to examine the impact of kiR on ATOD use behaviors and whether health educators should continue to use the kiR program to reduce ATOD use among adolescents in high school.

Key Words: Drug Prevention, Adolescents, Resistance Skills

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Introduction

Alcohol, tobacco, and other drug (ATOD) use among adolescents is a public health problem in the United States (U.S.). Adolescent ATOD use affects families and communities, resulting in lower academic achievement, incarceration, and increased morbidity (Hawkins et al., 2015). In the U.S., approximately 50% of adolescents aged 12 or older reported using alcohol in the past month, and 17.2% of adolescents aged 12 to 17 reported using illicit drugs including marijuana, hallucinogens, cocaine, and inhalants in the past year (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020). In California, 20.2% of adolescents aged 12 to 17 reported using marijuana, cigarettes, or alcohol in the past month (SAMHSA, 2018). ATOD use has been linked to several physical and mental health consequences including cancer, overdose, depression, anxiety, and suicide (SAMHSA, 2017). Students who use ATOD during their adolescence are at an increased risk of dropping out of school (SAMHSA, 2017). Consequently, adolescents who drop out of school are more likely than their peers who are enrolled in school to have higher rates of criminal behavior and incarceration (SAMHSA, 2017). Therefore, ATOD use among adolescents contributes to various adverse health and behavioral outcomes such as emotional problems, involvement with the juvenile system, diseases, brain damage, and school dropout (Hawkins et al., 2015).

Several school-based drug prevention programs for youth have been developed to reduce the adverse health and social consequences of ATOD use. However, some ATOD prevention programs are more effective than others in reducing early initiation of ATOD use and influencing psycho-social factors (e.g., self-efficacy to refuse drug offers) (Botvin & Griffin, 2016). In a meta-analysis of 120 experimental or quasi-experimental school-based adolescent drug prevention programs (5^{th}-12^{th} grade), effectiveness depended on whether the program was

interactive or non-interactive (Markwood, 1997; Ennett et al., 2003). Tobler found that programs delivered in a non-interactive way (e.g., lecture as the main teaching method) were substantially less effective than programs delivered in an interactive way (e.g., guided discussion among students) (Markwood, 1997; Ennett et al., 2003). Thus, the evaluation of school-based ATOD prevention programs is important so that public health professionals and policymakers can advocate for and implement programs that are effective in reducing adolescent ATOD use.

Literature Review

Drug Use Among Adolescents

In the U.S., approximately 8.33% (2.08 million) of adolescents aged 12 to 17 years reported using drugs in the past month (SAMHSA, 2020). Among those adolescents, 8.2% (2.1 million) used alcohol, 1.4% (350,000) smoked cigarettes, 5.1% (1.3 million) used an e-cigarette or other vaping device to vape nicotine, and 13.8% (3.4 million) used an illicit drug (SAMHSA, 2020). Marijuana is the most used illicit drug among adolescents (NCDAS, 2022). In California, the initiation of marijuana use in the past year was 5.2% compared to adolescents nationwide (4.8%) (SAMHSA, 2020). According to the 2019 California Healthy Kids Survey (CHKS), 7% of seventh graders, 15% of ninth graders, and 23% of eleventh graders used alcohol or drugs in the past 30 days (CHKS, 2022). In Riverside County, 19.3% of adolescents in grades seven, nine, and eleven reported using alcohol seven or more times in their entire life (KidsData, 2022). Across grade levels, the estimated proportion of students who have ever used alcohol, cigarettes, e-cigarettes, and marijuana has not increased, yet has remained relatively high since 2017 (CHKS, 2022).

Consequences of ATOD Use

Adolescents who use ATOD are at particular risk for negative health and social consequences including school dropout, unemployment, risky sexual behaviors, and increased utilization of healthcare services (Hawkins et al., 2015). Additionally, adolescence is a critical period for brain development; thus, ATOD use is attributable to permanent and irreversible brain damage (Botvin & Griffin, 2016). The effect of ATOD on the adolescent brain may interfere with their academic performance, increasing their risk of dropping out of school (Botvin & Griffin, 2016). According to the National Survey on Drug Use and Health (NSDUH), high

school dropouts are more likely to be current cigarette users (55.9 vs. 20.2 percent), alcohol users (41.1 vs. 33.7 percent), and to engage in binge alcohol use (31.8 vs. 22.1 percent), illicit drug use (31.4 vs. 18.1 percent), and marijuana use (27.5 vs. 15.6 percent) compared to high school graduates (SAMHSA, 2020). Consequently, high school dropouts are more likely to earn less when employed, receive public assistance, suffer poor health, and engage in delinquent behavior leading to additional healthcare costs, and an increased demand on the juvenile and criminal justice system (Botvin & Griffin, 2016). Due to poor judgment and a lack of impulse control, adolescents who use ATOD may also engage in unprotected sex, leading to a higher risk of sexually transmitted diseases, teen pregnancy, and aggressive or violent behavior (Hawkins et al., 2015). Additionally, adolescents who abuse drugs with needles increase their risk of contracting blood-borne diseases like HIV/AIDS and Hepatitis (Hawkins et al., 2015). Despite the litany of consequences, adolescents often believe that ATOD use is not a serious problem (NIDA, 2014).

Risk Factors for Adolescent ATOD Use

The most common and serious risk factors for adolescent ATOD use include both individual and community-level factors. Individual risk factors include mental health issues such as anxiety and depression (Whitesell et al., 2013). Adolescents who are socially anxious may use ATOD to alleviate social anxiety, enhance social situations, increase positive affect, and cope with stress or problems related to school, family, and friends (Blumenthal et al., 2010). As such, adolescents with anxiety are at greater risk for ATOD use because they are more likely to yield to peer pressure to use ATOD (Buckner et al., 2013). Furthermore, adolescence is a high-risk period for the development of major depressive symptoms as well as ATOD dependence (Lemyre et al., 2018). Previous research has revealed that depression and substance use disorders

are often linked with each other (Whitesell et al., 2013). Adolescents with depression may use addictive compounds found in ATOD to ease their feelings of sadness, pain, gloom, or anger (Whitesell et al., 2013). Adolescents may find temporary relief from their symptoms, reinforcing further use of ATOD and resulting in a more rapid progression to dependence (Lemyre et al., 2018). As a result, adolescents with mental health issues such as anxiety and depression are susceptible to ATOD use (Lemyre et al., 2018).

Community-level factors that affect adolescent ATOD use include the availability of substances in the neighborhood, lack of surveillance in and around school, and association with substance-using peers (Hawkins et al., 2015). According to Handley et al. (2015), the type of neighborhood in which an adolescent lives is generally predictive of ATOD use. For example, adolescents who live in disadvantaged neighborhoods are more likely to be offered ATOD compared to adolescents who live in more stable and less disadvantaged neighborhoods (Handley et al., 2015). As a result, adolescents from disadvantaged neighborhoods have greater exposure to ATOD and more opportunities to obtain them. Aside from the availability of substances in the neighborhood, the school environment is also an important indicator of ATOD use among adolescents (Broman, 2016). This is because they typically spend about 6.5 to 8 hours per day within school premises every day. Previous research suggests that students who feel emotionally connected to their school may be more likely to report peer's deviant behavior and less likely to use ATOD than students who feel disconnected from their school (Grana et al., 2010). In fact, students who attend schools in disrepair are more likely to smoke marijuana and use other illicit drugs (Grana et al., 2010). Additionally, Grana et al. (2010) argue that substance-using peers may instill the idea that ATOD behavior is normal and acceptable. As a result, adolescents may begin to associate with delinquent and substance-using peers to gain social

standing or to join a group (Grana et al., 2010). Others may feel inclined to interact with them because they are afraid of peer rejection (Lemyre et al., 2018). Nonetheless, both individual and community-level factors pose great risks for adolescent ATOD use. Therefore, ATOD prevention in schools is necessary to reduce adolescent ATOD use.

History of ATOD Prevention in Schools

The literature on ATOD prevention programs indicates that only about one-fourth of ATOD prevention programs are effective in reducing adolescent ATOD use (LaChausse, 2020). One of the most effective ATOD prevention programs for youth is the Life Skills Training (LST) program (Botvin, 1998). LST is a universal prevention approach that teaches personal self-management skills, social skills, and other cognitive-behavioral skills needed to reduce ATOD use among adolescents (Botvin, 1998). LST was developed based on a social-cognitive approach to prevention because previous studies suggest that information dissemination approaches that provide students with information about the dangers of ATOD are not effective in reducing ATOD use among adolescents (Botvin, 1998). While informational approaches may increase student knowledge regarding the consequences of ATOD use, these approaches are not sufficient to change ATOD use behaviors (Durlak, 1997). In fact, the most effective school-based ATOD prevention programs limit the amount of instruction aimed at increasing student knowledge or awareness, as these factors have little effect on actual behavior (Durlak, 1997). The best practices in adolescent ATOD prevention focus on improving social and emotional skills, drug resistance skills, and self-efficacy to abstain from ATOD use (Botvin et al., 2015). Additionally, successful ATOD prevention programs utilize interactive teaching methods such as role-play scenarios, peer discussion groups, and brainstorming to increase student involvement and participation (Markwood, 1997). These programs include lessons where teachers (or facilitators)

model skills (e.g., avoiding or leaving situations that can lead to ATOD use) and provide opportunities for students to practice using such skills, increasing their confidence (i.e., self-efficacy) to use them in their everyday life (Durlak, 1997).

Keepin' it REAL Program

Keepin' it REAL (kiR) is an evidence-based drug prevention program that uses four resistance strategies - Refuse, Explain, Avoid, and Leave (REAL) - to combat the influence of negative peer pressure and protect against ATOD use (Shin, 2020). The kiR program consists of ten 45-minute lessons that teach adolescents to be competent communicators, assess risk, and value their perceptions and feelings (Shin, 2020). Appendix A provides an overview of the 10-lesson program.

According to Hopfer et al. (2013), the kiR program is based on several theories, including Communication Competence Theory, Narrative Theory, Focus Theory of Normative Conduct, and Ecological Risk and Resilience Perspective. Communication Competence Theory defines communication competence as the ability to use an effective and appropriate communication pattern that produces mutual outcomes for the people involved (Gosin et al., 2003). For example, a competent communicator will assertively resist drug offers in a clear, non-offensive, and respectful manner. As a result, continued pressure is less likely, resistance is successful, and the relationship between both parties is maintained. Communication Competence Theory identifies four necessary components: knowledge, motivation, skills, and outcomes (Gosin et al., 2003). The knowledge component was guided by Narrative Theory, which suggests that adolescents may better understand the context of drug use by observing and listening to the stories of others (Gosin et al., 2003). Additionally, this narrative-based framework appears to be effective in teaching refusal strategies in drug offer situations by enhancing students' identification with

prevention messages and main characters who function as anti-ATOD use agents (Shin, 2020). The motivation component was guided by the Focus Theory of Normative Conduct, which distinguishes descriptive norms (what most people in a group think, feel, or do), injunctive norms (the way people feel that others ought to behave in a group), and personal norms (how an individual believes that he or she should behave) (Gosin et al., 2003). These perceived norms have been strongly linked to adolescent ATOD use behavior and beliefs about the acceptability of ATOD use (Grana et al., 2010). The skills component was guided by the Ecological Risk and Resilience Perspective, which suggests that protective factors may buffer the effects of risk factors within a child's environment (Gosin et al., 2003). Outcomes are the consequences for self, others, and relationships. To produce desirable outcomes, adolescents need a combination of adequate knowledge, motivation, and skills (Gosin et al., 2003). Overall, these theories provide a basis for the content and structure of the kiR program (Hopfer et al., 2013).

Previous studies on kiR have utilized experimental designs to examine the effectiveness of the program and to determine whether the program caused an impact on adolescent ATOD use behavior. Hecht et al. (2003) conducted a study in which thirty-five middle schools were randomly assigned to the control group or 1 of 3 versions of the kiR program (Mexican American/Spanish, non-Latino/rural, and multicultural). Students completed baseline and follow-up surveys/questionnaires over a two-year period. About two months after the program, students in the treatment group reported adopting more resistance strategies compared to students in the control group (Hecht et al., 2003). Approximately 14 months after the kiR program, students in the treatment group reported significantly less use of alcohol and marijuana (Hecht et al., 2003). As a result, the kiR program demonstrated statistically significant effects on the use of resistance strategies, alcohol, and marijuana (Hecht et al., 2003). More recently, Kulis et al. (2020)

conducted a study on Mantente REAL, a culturally adapted Spanish language version of the kiR program. The efficacy of this version was tested using a clustered randomized design. Seventh-grade students in four public schools were randomly assigned to the treatment group or the control group (Kulis et al., 2020). Teachers in the treatment group were trained to deliver the Mantente REAL manualized program. Findings indicate that students who received the Mantente REAL program reported relatively less frequent use of alcohol and illicit drugs other than marijuana compared to students who did not receive the program (Kulis et al., 2020).

Furthermore, Elek et al. (2006) conducted a randomized controlled trial (RCT) of kiR in 35 middle schools in Phoenix, Arizona. Results demonstrate that the multicultural version of the program was the most broadly effective, having impacts on both alcohol and marijuana use (Elek et al.,2006). Kulis et al. (2007) expanded on this data by examining differences in gender, ethnicity, and acculturation. Findings indicate that kiR was significantly more effective among boys than among girls in preventing increases in recent alcohol and cigarette use (Kulis et al., 2007). Marsiglia et al. (2016) took a unique approach to evaluation of the kiR program by adding a culturally grounded parenting component called Familias Preparando la Nueva Generacion (FPNG) to the RCT. Participants were surveyed at the beginning of 7th grade and at the end of 8th grade (18 months later). Results indicate that when FPNG and kiR were combined, youth were less likely to use alcohol and cigarettes at follow-up, compared to youth who only participated in kiR without parental participation in FPNG (Marsiglia et al., 2016). These findings also suggest that a combination of culturally grounded parent and youth interventions play an important role in reducing adolescent ATOD use (Marsiglia et al., 2016). As a result, RCTs deliver the highest level of evidence surrounding the effect of the kiR program on adolescent ATOD use.

Program Evaluation

Program evaluation can inform decisions about future health promotion and disease prevention programs by examining the effectiveness and efficiency of existing programs (Centers for Disease Control & Prevention [CDC], 2021). There are two broad categories of evaluation: formative and summative. Formative evaluations are conducted during program development and implementation, providing information on how to improve the program (CDC, 2022). Meanwhile, summative evaluations are conducted once the program is disseminated widely, informing the extent to which the program achieved its goals (CDC, 2022). Process evaluations fall within the category of formative evaluation. Process evaluation assesses the type, quantity, and quality of program activities or services (CDC, 2021). Outcome evaluations and impact evaluations fall within the category of summative evaluation. Outcome evaluation measures short-term and medium-term changes in program participants such as changes in knowledge, awareness, attitudes, beliefs, behaviors, social norms, and/or skills (CDC, 2021). Impact evaluation examines the effectiveness of programs (CDC, 2021). Overall, program evaluation can be used to maintain or improve the quality of health promotion and disease prevention programs (CDC, 2022).

Process Evaluation Methods

Process evaluation includes elements of implementation fidelity; the degree to which a program reaches the intended audience and is delivered as originally planned (LaChausse et al., 2014). Some variables that affect implementation fidelity include teacher training and technical assistance (LaChausse et al., 2014). Teacher training and ongoing technical assistance before implementation and throughout the implementation process ensure favorable implementation results for ATOD prevention programs (Little et al., 2013). Additionally, these features provide

information on the types of services being delivered, the resources used to deliver those services, program providers, the issues encountered during implementation, and ways to resolve such issues, increasing teachers' skills, self-efficacy, and comfort with the program's curricula (Little et al., 2013). Implementation fidelity increases when teachers are comfortable with the program's curricula and have strong teaching skills, self-efficacy, enthusiasm, and beliefs about the value of the program (LaChausse et al., 2014). Teachers who are uncomfortable with the program's curricula may make changes to the intervention, impacting the quality of program delivery (Botvin et al., 2018). Additionally, when teacher training is inadequate, teachers may avoid parts of the intervention or fail to implement core program components (Botvin et al., 2018). Consequently, programs that are not implemented completely or as intended are less likely to be effective (Dusenbury et al., 2003). Therefore, teacher training and ongoing technical assistance ensure that teachers feel comfortable and confident enough to implement a program the way it was originally intended.

Another method of process evaluation includes continuous assessment, such as a pre-and post-test (Escribano et al., 2016). In The Project Towards No Drug (TND) Abuse Dissemination Trial, students rated the program on whether it was enjoyable, believable, or interesting by using a four-point Likert scale ranging from (1) "*definitely yes*" to (4) "*definitely not*" (Rohrbach et al., 2010). Students also completed five items that evaluated the teacher's delivery and whether they encouraged student participation, showed respect toward students, demonstrated confidence, were prepared, and responded to students' questions (Rohrbach et al., 2010). The student's evaluation of the program process assessed three items: how well the lesson went, the extent to which the teacher elicited student participation and responses, and whether the objectives of the lesson were met (Rohrbach et al., 2010). In another study, participants were informed on how to

handle the implementation process and were provided with checklists for implementation at their school (Bast et al., 2019). They were encouraged to provide their input and/or consult with The Danish Cancer Society regarding implementation issues (Bast et al., 2019). Students participated in process evaluation by providing feedback during the implementation process and identifying successful/unsuccessful aspects of the program. This increases implementation fidelity by improving the quality and delivery of the program (Bast et al., 2019).

Implementation Fidelity

Dane and Schneider proposed five features of implementation fidelity in the prevention program evaluation literature: adherence, dose, quality, participant responsiveness, and program differentiation (Ennett et al., 2011). Adherence is the extent to which the implementation of the program is consistent with the way it was developed (Ennett et al., 2011). Adherence is typically measured using teacher self-reports about topics that were covered in class and the extent to which the teacher implemented the lesson as intended (Escribano et al., 2016). The dose is the amount of program content delivered and received by participants (Ennett et al., 2011). Dose can be measured using teacher self-reports for all lessons including the number of sessions completed, length of time of the program, intensity of the program, and student attendance (Dusenbury et al., 2003). Quality of delivery can be defined as the way a teacher delivers the program content (Ennett et al., 2011). The quality of delivery is measured using self-reports and classroom observations of teacher-student interactions during the program (Dusenbury et al., 2003). Observers typically rate the teachers' implementation qualities (e.g., level of enthusiasm, knowledge of program content, ability to address questions or concerns during implementation, etc.) on a five-point Likert scale ranging from 1 (*poor*) to 5 (*excellent*) (Vroom et al., 2020). Participant responsiveness is the degree to which participants are engaged or involved in the

lesson (Ennett et al., 2011). Hansen measured participants' responsiveness by asking students who participated in All-Stars and DARE whether they felt their opinions were heard, participated in group discussions, talked about the program with their parents, and would recommend the program to their peers (Dusenbury et al., 2003). Program differentiation refers to the components of the program that can be differentiated from other programs (Ennett et al., 2011). Measures of program differentiation include component analysis, which could be used to establish the elements of effective prevention programs (Dusenbury et al., 2003). The literature suggests that the effectiveness of evidence-based drug prevention programs depends on these five features of implementation fidelity (Dusenbury et al., 2003). Therefore, if any of the five features are compromised, the fidelity of implementation may also be compromised, undermining the program's effectiveness.

Impact Evaluation Methods

Impact evaluation methods include three broad categories: experimental designs, quasi-experimental designs, and non-experimental designs (CDC, 2022). Each method differs in its approach to causal attribution (i.e., causal link between observed changes and a specific program) (CDC, 2021). An experimental design, such as the randomized controlled trial (RCT), consists of a randomly assigned treatment group and control group (CDC, 2022). This study design can make causal inferences, reduce selection bias, and minimize internal threats to validity (CDC, 2022). On the one hand, RCTs can be quite expensive, time-consuming, and difficult to perform. Another experimental design is the quasi-experimental design, which consists of a treatment group and control group without random assignment (CDC, 2021). The nonequivalent group's design is the most common type of quasi-experimental design, in which participants are not randomly assigned to treatment or control conditions but are rather assigned

based on convenience (CDC, 2022). This design also requires a pretest and posttest for both groups (CDC, 2022). When examining the effectiveness of ATOD prevention programs, it is critical to use a design that can examine program effects (i.e., experimental design) as non-experimental designs (e.g., one group pretest-posttest design) do not include a treatment or comparison group, making it difficult to assess what the sample's outcomes would have been absent the intervention (LaChausse, 2017). Overall, the appropriate impact research design and method for impact evaluation must include some type of experimental design to determine whether an ATOD prevention program is effective in reducing ATOD use or changing risk and protective factors (Flannery et al., 2014).

Many ATOD prevention programs use impact evaluation for four reasons: advocacy (i.e., demonstrating the value of ATOD programs), allocation of investment, analysis to inform continuous improvement, and accountability (Rogers et al., 2015). Research has shown that any given impact evaluation is likely to have a combination of these reasons, although each may require different evidence and different methods of collecting it (Rogers et al., 2015). Rohrbach et al. (2010) utilized a RCT of 65 high schools in the United States to examine the short-term effects of two training approaches for The Project TND Abuse Dissemination Trial. Velasco et al. (2017) utilized a quasi-experimental design that included 31 schools in the treatment group and 24 schools in the control group to determine whether a drug abuse prevention program designed for adolescents in the U.S. was effective for youth in Italy (Velasco et al., 2017). These studies demonstrate good impact evaluations because they are replicable, have string internal validity, and can estimate program impacts accurately.

Conclusion

Alcohol, tobacco, and other drug (ATOD) use pose many risks for adolescents including poor physical health, academic difficulties, poor peer relationships, involvement with the juvenile system, and increased risk for sexually transmitted diseases (Hawkins et al., 2015). These risks can be attributed to increased costs in drug enforcement, healthcare, and treatment for mental, emotional, or behavioral problems (Botvin & Griffin, 2016). The National Survey on Drug Use and Health (NSDUH) found that current cigarette users, alcohol users, and marijuana users were more likely to be high school dropouts (SAMHSA, 2020). Adolescents may use ATOD to alleviate social anxiety, "fit in", and/or cope with stress related to school, family, and friends. Therefore, the ideal time to intervene is during adolescence, to prevent a wide range of undesirable consequences (Gorman, 2003). ATOD use can be prevented through the implementation of effective school-based drug prevention programs (Shin, 2020). Keepin' it REAL (kiR) is an evidence-based drug prevention program designed to prevent ATOD use among vulnerable populations such as middle school and high school students (Shin, 2020). To evaluate the effectiveness of drug prevention programs (such as kiR), program evaluation should include an assessment of the five features of implementation fidelity: adherence, dose, quality, participant responsiveness, and program differentiation (Ennett et al., 2011).

Purpose of the Study

The purpose of this study is to evaluate the effectiveness of keepin' it REAL (kiR) drug prevention program. First, this study will examine the degree to which teachers implemented the program with fidelity. Second, this study will determine the overall impact of kiR on adolescents' ATOD use behaviors (i.e., alcohol use, tobacco use, marijuana use, vape use), intention to use ATOD, decision to avoid ATOD use, ATOD use resistance skills, and self-

efficacy to refuse ATOD offers. This study will provide information to stakeholders regarding the effectiveness of the kiR program as well as areas of improvement.

Research Questions

The following research questions were addressed:

1. To what extent was the kiR drug prevention program implemented with fidelity?
2. What effect does kiR have on adolescents' behavior regarding current ATOD use?
3. What effect does kiR have on adolescents' intention to use ATOD?
4. What effect does kiR have on adolescents' decision to avoid ATOD use?
5. What effect does kiR have on adolescent's ATOD use resistance skills?
6. What effect does kiR have on adolescent's self-efficacy to refuse ATOD offers?

Hypotheses

H_1: Students who receive kiR will report a decrease in current ATOD use behaviors when compared to students who do not receive kiR.

H_2: Students who receive kiR will report an increase in intentions to abstain from ATOD use when compared to students who do not receive kiR.

H_3: Students who receive kiR will report an increase in decisions to avoid ATOD use when compared to students who do not receive kiR.

H_4: Students who receive kiR will report an increase in intentions to use ATOD resistance skills when compared to students who do not receive kiR.

H_5: Students who receive kiR will report an increase in self-efficacy to refuse ATOD offers when compared to students who do not receive kiR.

Method

Participant Recruitment and Setting

A quasi-experimental design with a treatment and comparison group was employed, with data collection taking place from April 2022 to May 2022 at two different suburban high schools in Southern California (see Appendix E). The treatment group consisted of three health classes of ninth-grade students with two health teachers who received training prior to delivery of the kiR drug prevention program. The comparison group consisted of three health classes of students in grades 9-12 with two health teachers who did not implement the kiR program. The comparison group was selected by district staff as matched health classes from another high school in the same district. Students enrolled in health classes were eligible to participate in the study. Prior to survey administration, parent/guardian consent forms were distributed to the study teachers (see Appendix B). The consent form described the purpose of the study, risks/benefits of participation, the voluntary nature of participation, confidentiality of responses, and the researcher's contact information. The consent form was double-sided and included an English-to-Spanish translation (see Appendix C). Students were asked to give the consent form to their parent/guardian and return it 4-5 days later. Study teachers were advised to remind students daily to return their parent/guardian consent forms and to highlight the names of the students who returned consent on the roster provided. A $25 gift card was granted to teachers who reached a 95% consent return rate for each class period. Both negative and positive consent forms counted toward the 95% consent return rate. A total of 118 participants from two different high schools completed both the pretest and the posttest. The treatment group consisted of 47 students and the comparison group consisted of 71 students. This study was reviewed and approved by the Institutional Review Board (IRB) at California Baptist University.

Procedures and Instrumentation

Students who returned positive parent/guardian consent completed a pencil-and-paper survey at the beginning of class (see Appendix D). During this time, non-participating students worked on an alternate activity assigned by their teacher. Approximately one week prior to program implementation, both the treatment group and the comparison group completed the pretest. Once the pretest data were collected, participants in the treatment group completed all ten lessons of the kiR program over a three-week period. Meanwhile, participants in the comparison group received normal classroom instruction and completed regularly assigned tasks by their teacher. Approximately one week after the completion of the program, both the treatment group and the comparison group completed the posttest. Each student was assigned a unique participant ID for the pretest and the posttest. This ID number consisted of their school site (schools were assigned a number ranging from 1-2 based on their status in the treatment/comparison group), teacher (teachers were assigned a number ranging from 1-4 based on their status in the treatment/comparison group), class period (1-6), and three-to-four-digit numbers ranging from 0-1000 (numbers were assigned using the "RANDBETWEEN" function on Excel). The participant IDs were preprinted on each survey to match the pretest and the posttest and to track student responses. Each student's verbal assent was obtained during the survey briefing. During the assent briefing, the data collection team reiterated that the study was completely voluntary and that students did not have to participate if they did not want to. When a student asked a question, the researcher responded with "Do the best you can or leave that question blank" to limit bias. The survey took approximately twelve minutes to complete. The data collection procedure was the same for both the treatment group and the comparison group. All data collection was conducted by the researcher.

During program implementation, health teachers in the treatment group completed a fidelity log immediately after each lesson. The fidelity logs measured the extent to which the program activities were implemented as intended. Depending on the number of activities for each lesson, the teachers were asked to circle a response ranging from 0 "*No*" (Activity was not covered in class) to 2 "*Yes, Completely*" (Activity was covered with no changes). The fidelity logs included items such as the date of the lesson, school site, class period, the number of students that were present on the date of the lesson, and a comment section for any notable changes that were made during the specified lesson (see Appendix F). To further understand the way the kiR program was implemented, lesson observations were conducted by the researcher. The researcher observed one lesson from each teacher in the treatment group. The lesson date and class period were randomly selected. The health teachers were notified that they would be observed but had no prior knowledge as to the date or time when the observation would occur. The purpose of the observation was to assess the overall quality of the program session and the delivery of information. Implementation quality variables included teacher engagement (clarity, time management skills, knowledge of the program, enthusiasm, poise and confidence, rapport and communication with participants, ability to address questions), student engagement (level of understanding, participation), and a global rating of the overall quality of the program session. The researcher rated the teachers' implementation qualities (e.g., clarity, level of enthusiasm, knowledge of program/lesson content, time management, etc.) on a five-point Likert scale ranging from 1 to 5, with lower scores indicating poor lesson quality and delivery, and higher scores indicating excellent lesson quality and delivery (see Appendix G).

Measures

The student survey included publicly available, reliable, and valid measures of knowledge, attitudes, and behaviors regarding alcohol, tobacco, and other drug (ATOD) use (Hecht et al., 2003). For the purpose of this study, "other drugs" is operationally defined as marijuana and vape use. Behaviors regarding ATOD use, such as current ATOD use, were assessed using the following item from the kiR evaluation form: "How many days in the past 30 days have you: …had alcohol to drink?, …smoked cigarettes?, and …smoked marijuana?". The item was altered to reflect the time span and purpose of this study. Therefore, to measure the frequency of current ATOD use in the past week, the following items were used: "Last week, how many times did you drink alcohol (beer, wine, hard liquor)?", "Last week, how many times have you smoked cigarettes?", "Last week, how many times did you use marijuana ("weed", "pot", etc.)?", "Last week, how many times did you vape?", "Last week, how many times did you use any illegal drug (meth, heroin, cocaine, ecstasy, etc.)?". A bogus pipeline question was included to assess whether survey participants were providing authentic responses.

ATOD use resistance skills were assessed using a 6-point Likert scale, with scores ranging from 0 = "*I was not offered*" to 5 = "*Always*". For example, this item included four statements, "In the past week, when cigarettes, vape, alcohol, or other illegal drugs were offered to you, how often did: …say "No" without giving a reason why?, … decide to leave the situation without accepting the offer?, …give an explanation or excuse to turn down the offer?, and ...use some other way to not accept the offer?". Any score of 0 (*I was not offered*) was excluded from data analysis. A frequency distribution was conducted to help identify any errors and ensure accuracy.

To measure participants' self-efficacy to refuse ATOD offers, the following items were assessed: "How sure are you that you would say NO if a family member (parent, brother, sister, aunt, uncle, etc.) offered you cigarettes, alcohol, or marijuana?", "How sure are you that you would say NO if someone you don't know very well offered you cigarettes, alcohol, or marijuana?", and "How sure are you that you would say NO if a friend you really liked offered you cigarettes, alcohol, or marijuana?". The response format ranged from 1= "*Not at all sure*" to 5= "*Very sure*". To assess the overall score of self-efficacy, a scale score was computed by summing each individual item. These items have demonstrated adequate reliability (Cronbach's alpha= .87).

A brief demographics section asked participants about their gender identity, age, race, and ethnicity (Hispanic/Non-Hispanic) (see Table 1). Additionally, the variable for age was recoded into a new variable to demonstrate the actual age in ratio level. These items and scales were the same for both the pretest and the posttest. Appendix D shows the student survey.

Table 1

Demographic Characteristics of the Participants

Characteristic	Treatment Group (n=47)		Comparison Group (n=71)	
	n	*%*	*n*	*%*
Gender				
Male	13	27.7	46	64.8
Female	33	70.2	23	32.4
Do not identify as female, male, or transgender	1	2.1	2	2.8
Ethnicity				
Hispanic/Latino	44	93.6	56	78.9
Non-Hispanic	3	6.4	15	21.1
Race				
White	5	10.6	24	33.8
African American	0	0	6	8.5
American Indian	1	2.1	1	1.4
Asian	2	4.3	1	1.4
Other	37	78.7	36	50.7
Age (Mean/SD)	14.47/0.50		16.37/1.41	

Note. Due to self-reported missing data, n varies by response.

Results

Implementation Fidelity

Fidelity logs were completed by the study teachers who received kiR training to provide valuable information including the extent to which the activities of the lessons were covered with no changes (see Appendix F). On average, the study teachers covered 83.3% of the activities in lesson 1, 60% of the activities in lesson 2, 52.4% of the activities in lesson 3, 80.9% of the activities in lesson 4, 47.6% of the activities in lesson 5, 52.4% of the activities in lesson 6, 88.9% of the activities in lesson 7, 61.9% of the activities in lesson 8, 88.9% of the activities in lesson 9, and 85.7% of the activities in lesson 10 with no changes. Table 2 depicts the fidelity log scores, percentages, and the average of the two teachers that reported covering the activities of the lessons completely and with no changes. Lesson observations were conducted to assess the lesson quality and the delivery of program content. Table 3 summarizes the teacher's score for each item on the kiR observation form (see Appendix G). Overall, teacher number one received an average score of 2.91 and a total score of 32 out of 55. Teacher number two received an average score of 4.82 and a total score of 53 out of 55.

Table 2

Fidelity Log Scores, Percentages, and Average Completion for Study Teachers

Lesson	Teacher 1				Teacher 2		Average Completion
	Period 2		Period 4		Period 3		
	n	%	*n*	%	*n*	%	%
1	10	62.5	14	87.5	16	100.0	83.3
2	4	40.0	4	40.0	10	100.0	60.0
3	6	42.9	4	28.6	12	85.7	52.4
4	8	57.1	12	85.7	14	100.0	80.9
5	10	71.4	8	57.1	2	14.3	47.6
6	10	71.4	10	71.4	2	14.3	52.4
7	10	83.3	10	83.3	12	100.0	88.9
8	12	85.7	12	85.7	2	14.3	61.9
9	10	83.3	10	83.3	12	100.0	88.9
10	12	85.7	10	71.4	14	100.0	85.7

Note. Total points ranged from 10-16 points across lessons, with 6 lessons being 14 points.

Table 3

Observation Scores by Teacher

Variable	Teacher	
	Teacher 1	Teacher 2
1. In general, how clear were the program teacher's explanations of the activities?	3/5	5/5
2. To what extent did the teacher keep track of time during the session and activities?	3/5	4/5
3. To what extent did the presentation of materials seem rushed or hurried?	2/5	4/5
4. To what extent did the participants appear to understand the material?	3/5	5/5
5. How exactly did the group members participate in discussions and activities?	3/5	5/5
6. On the following scale, rate the teacher on the following qualities:	3/5	5/5
a. Knowledge of the program		
b. Level of enthusiasm	3/5	5/5
c. Poise and confidence	3/5	5/5
d. Rapport and communication with participants	3/5	5/5
e. Effectively addressed questions and concerns	3/5	5/5
7. Rate the overall quality of the program session	3/5	5/5
Total Score:	32	53

Note. Observation total scores = score out of 55 points.

Data Analysis

A series of two-way repeated-measures ANOVAs were calculated to compare current ATOD use, students' intention to use ATOD, decision to avoid ATOD use, intention to use ATOD resistance skills, and self-efficacy to refuse ATOD offers of participants (treatment group and comparison group) at two different time points: before program implementation and after program implementation (see Table 4).

Table 4

Means and Standard Deviations of Study Variables by Group

Variable	Treatment Group				Comparison Group			
	Pre		Post		Pre		Post	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Number of times used ATOD (*Past 30 days*)								
Alcohol	0.11	0.60	0.37	1.55	0.20	0.50	0.21	0.74
*Alcohol	0.11	0.60	0.16	0.56	0.20	0.50	0.21	0.74
Tobacco	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.12
Marijuana	0.00	0.00	0.06	0.25	0.54	2.48	0.45	1.82
Vape	0.06	0.32	0.06	0.32	0.30	1.29	0.38	1.43
Intentions to use ATOD (1 = *Definitely No* to 4 = *Definitely Yes*)								
Alcohol	1.68	0.76	1.64	0.76	1.96	0.89	2.04	0.92
Tobacco	1.06	0.25	1.09	0.28	1.14	0.49	1.20	0.60
Marijuana	1.24	0.57	1.34	0.73	1.70	0.97	1.55	0.88
Illegal drug	1.04	0.29	1.04	0.20	1.08	0.41	1.07	0.39
Decision to avoid ATOD use (1 = *Never* to 5 = *Always*)								
Alcohol	3.02	1.45	2.94	1.50	2.52	1.50	2.48	1.51
Tobacco	3.40	1.68	3.49	1.65	2.93	1.77	2.82	1.78
Marijuana	3.30	1.61	3.43	1.61	2.77	1.65	2.66	1.71
Intention to use ATOD resistance skills (1 = *Never* to 5 = *Always*)								
Resist- Say No	4.44	0.62	3.63	1.01	3.48	1.48	3.54	1.53
Resist- Leave	3.70	1.08	3.76	1.20	2.65	1.52	2.71	1.60
Resist- Explain	3.33	1.43	3.41	1.18	2.68	1.42	2.69	1.52
Resist- Other	3.11	1.63	3.32	1.29	2.07	1.36	2.58	1.59
Self-Efficacy to refuse ATOD offer (1 = *Not at all sure* to 5 = *Very sure*)								
Family	3.70	1.37	3.66	1.29	3.51	1.53	3.54	1.52
Stranger	4.38	1.44	4.36	1.44	4.30	1.46	4.29	1.46
Friend	3.79	1.43	3.94	1.42	3.73	1.49	3.48	1.53

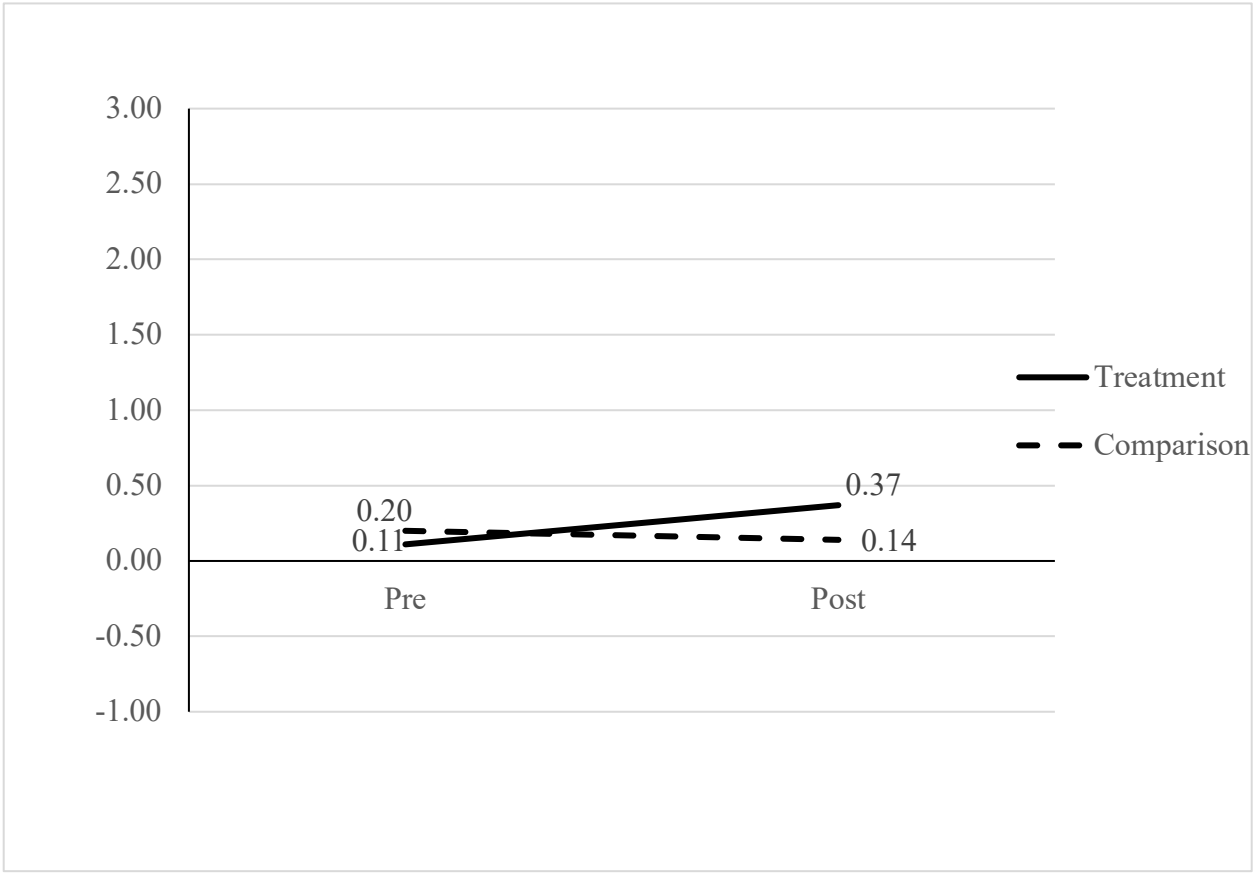
Note. All of the results were not statistically significant; *Based on sensitivity analysis

Current Alcohol Use (Past 30 days)

The main effect of time, $F(1, 114) = 1.81$, $p = 0.18$, was not statistically significant. However, the time by group interaction, $F(1, 114) = 4.41$, $p = 0.04$ was statistically significant. Current alcohol use (*past 30 days*) scores increased from pretest (M = 0.11, SD= 0.60) to posttest (M = 0.37, SD= 1.55) for the treatment group F(1, 114) = 4.91, $p = 0.03$, but did not change from pretest (M = 0.20, SD = 0.50) to posttest (M = 0.21, SD = 0.74) for the comparison group. The current data indicate that the program significantly increases current alcohol use among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 1).

Figure 1

No Significant Changes in Current Alcohol Use from Pretest to Posttest

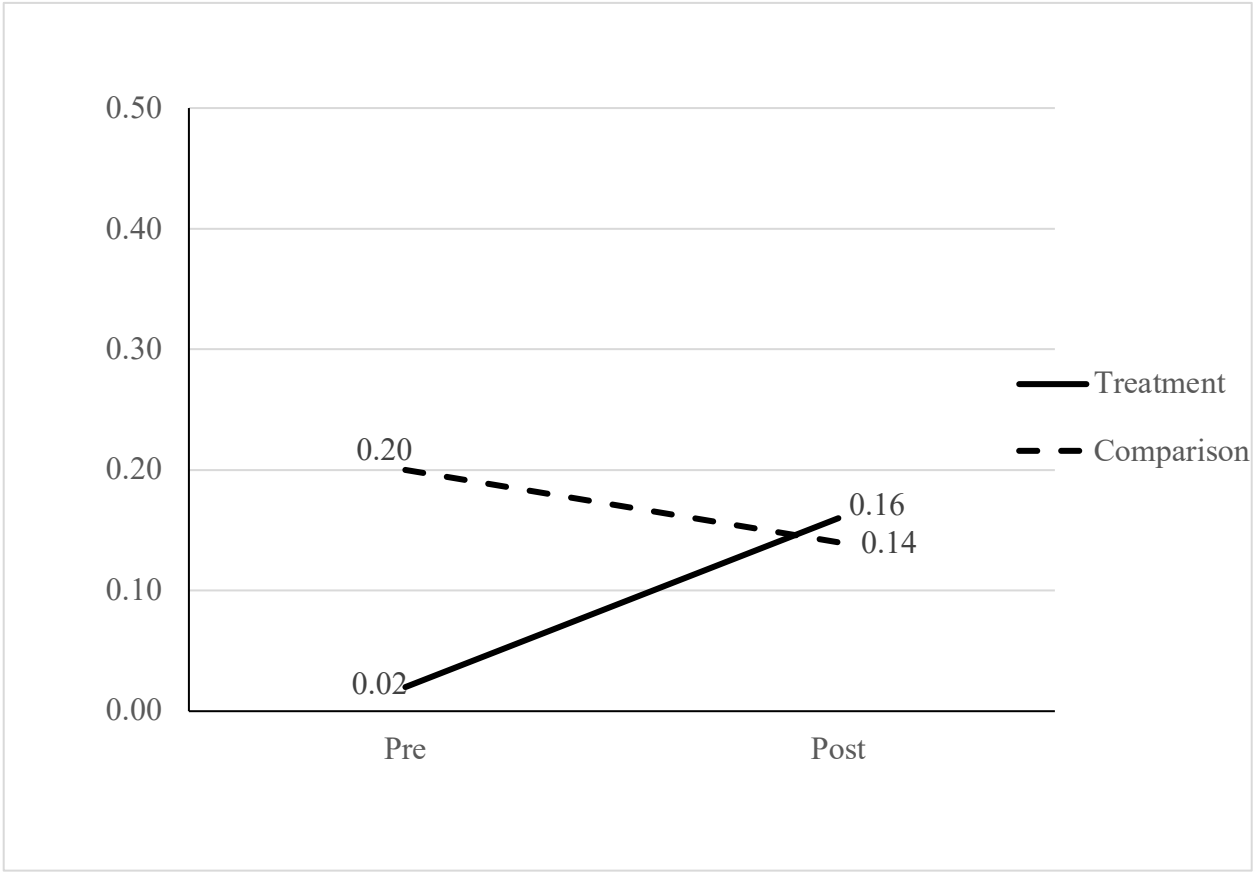


Note. $p > .05$, no statistical significance.

Conversely, this spurious effect of the program on current alcohol use among those students receiving the kiR program (treatment group) was examined due to extreme scores (X_i = 10). A Z-score was calculated to determine the probability that a score of 10 would be in a distribution of current alcohol use scores in this population. This analysis revealed that the probability that a student would report drinking alcohol (beer, wine, hard liquor) 10 times or more is less than *.0001*. Therefore, it is highly unlikely that there would be a score of 10 in this distribution of scores. Additionally, it is more likely that the subject that reported a score of 10 for current alcohol use during the posttest was simply clowning (e.g., joking, messing around, etc.). For that reason, this extreme score of 10 was set to missing data. Then, a sensitivity analysis was conducted to examine the extent to which results would be affected by this change. This analysis revealed that the main effect of time $F(1, 113) = 0.46$, $p = 0.50$, and the time by group interaction $F(1, 113) = 2.88$, $p = 0.09$ were not statistically significant. Therefore, there was no change in current alcohol use among the treatment group from pretest (M = 0.11, SD = 0.60) to posttest (M = 0.16, SD = 0.56) because of the program (see Figure 2).

Figure 2

No Significant Changes in Alcohol Use from Pretest to Posttest (Sensitivity Analysis)



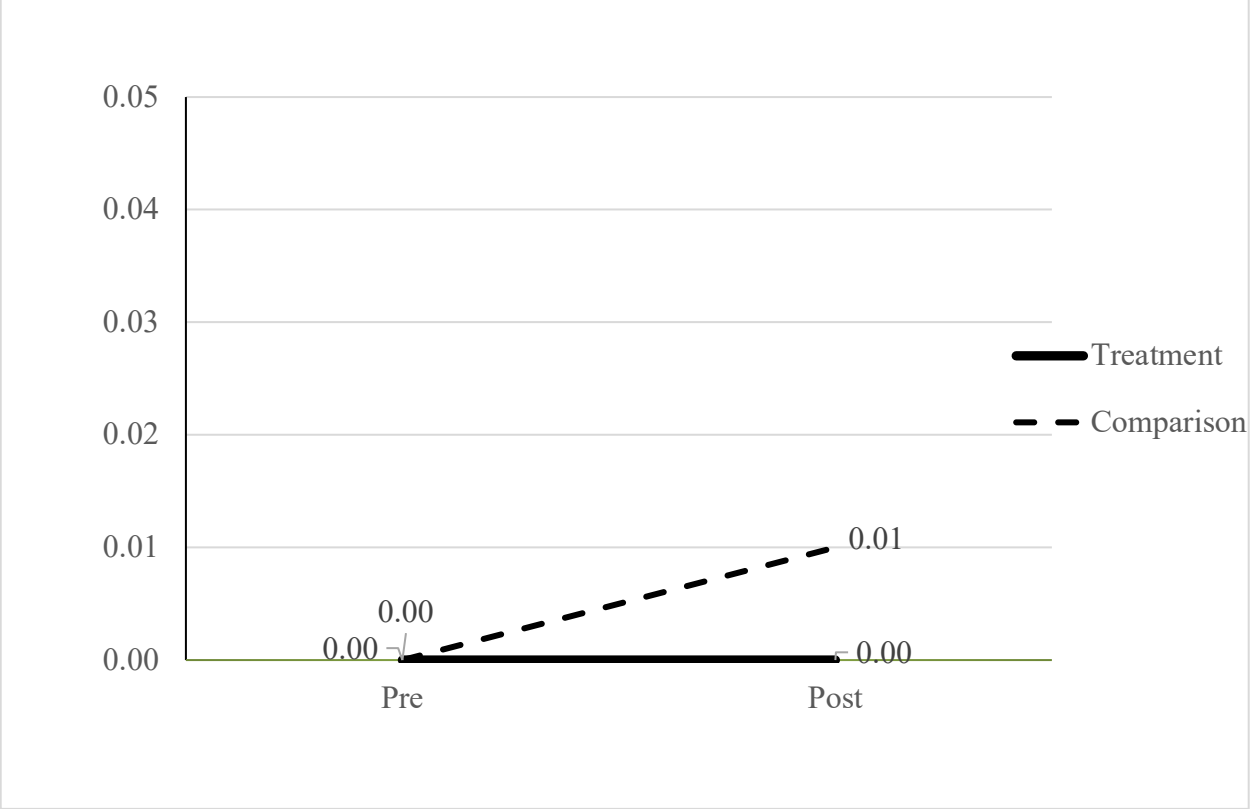
Note. This figure is based on the sensitivity analysis for current alcohol use.

Current Tobacco Use (Past 30 days)

The main effect of time, $F(1, 116) = 0.66$, $p = 0.42$, and the time by group interaction, $F(1, 116) = 0.66$, $p = 0.42$, were not statistically significant. Current tobacco use (*past 30 days*) scores did not change from pretest (M = 0.00, SD= 0.00) to posttest (M = 0.00, SD= 0.00) for the treatment group, or from pretest (M = 0.00, SD = 0.00) to posttest (M = 0.01, SD = 0.12) for the comparison group. The current data indicate that the program does not have any effect on current tobacco use among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 3).

Figure 3

No Significant Changes in Tobacco Use from Pretest to Posttest

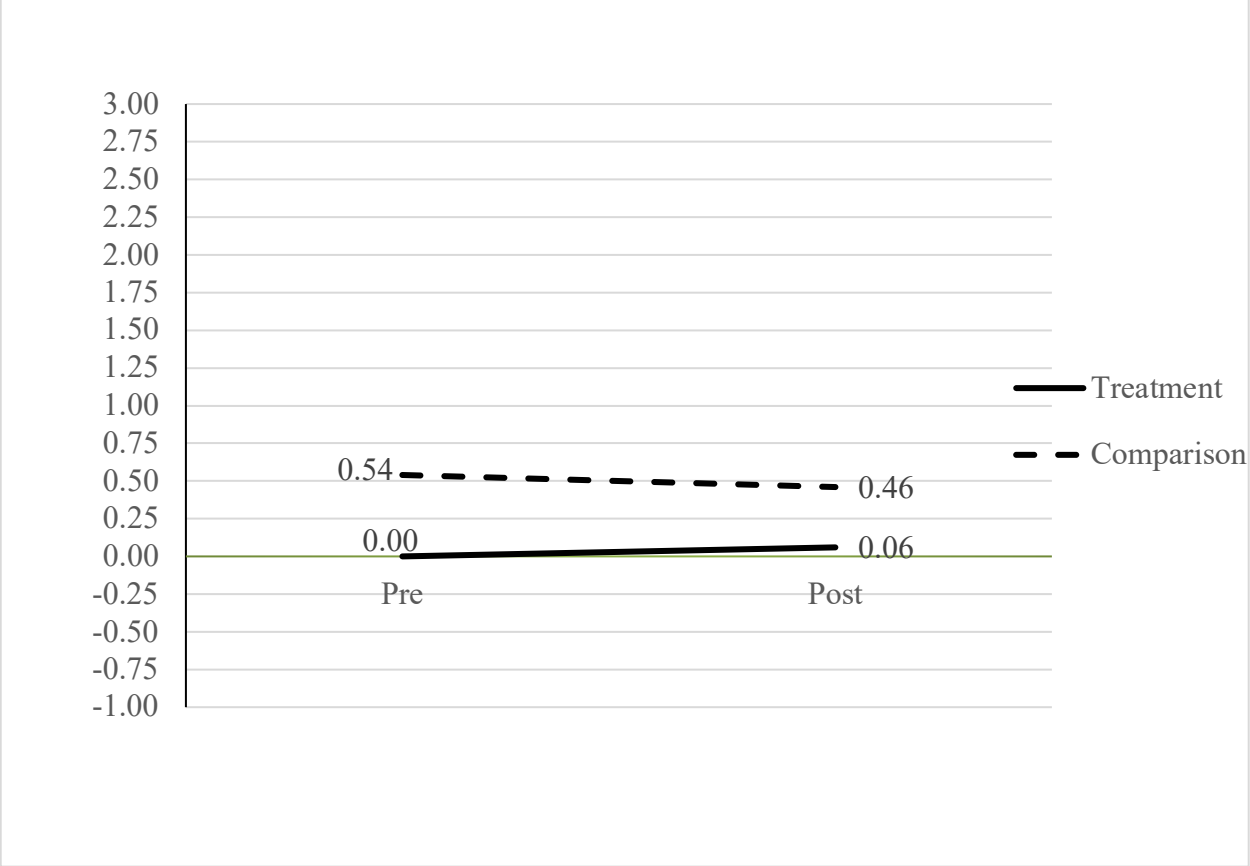


Current Marijuana Use (Past 30 days)

The main effect of time, $F(1, 115) = 0.01$, $p = 0.93$, and the time by group interaction, $F(1, 115) = 0.33$, $p = 0.56$, were not statistically significant. Current marijuana use (*past 30 days*) scores did not change from pretest (M = 0.00, SD= 0.00) to posttest (M = 0.06, SD= 0.25) for the treatment group, or from pretest (M = 0.54, SD = 2.48) to posttest (M = 0.45, SD = 1.82) for the comparison group. The current data indicate that the program does not have any effect on current marijuana use among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 4).

Figure 4

No Significant Changes in Marijuana Use from Pretest to Posttest

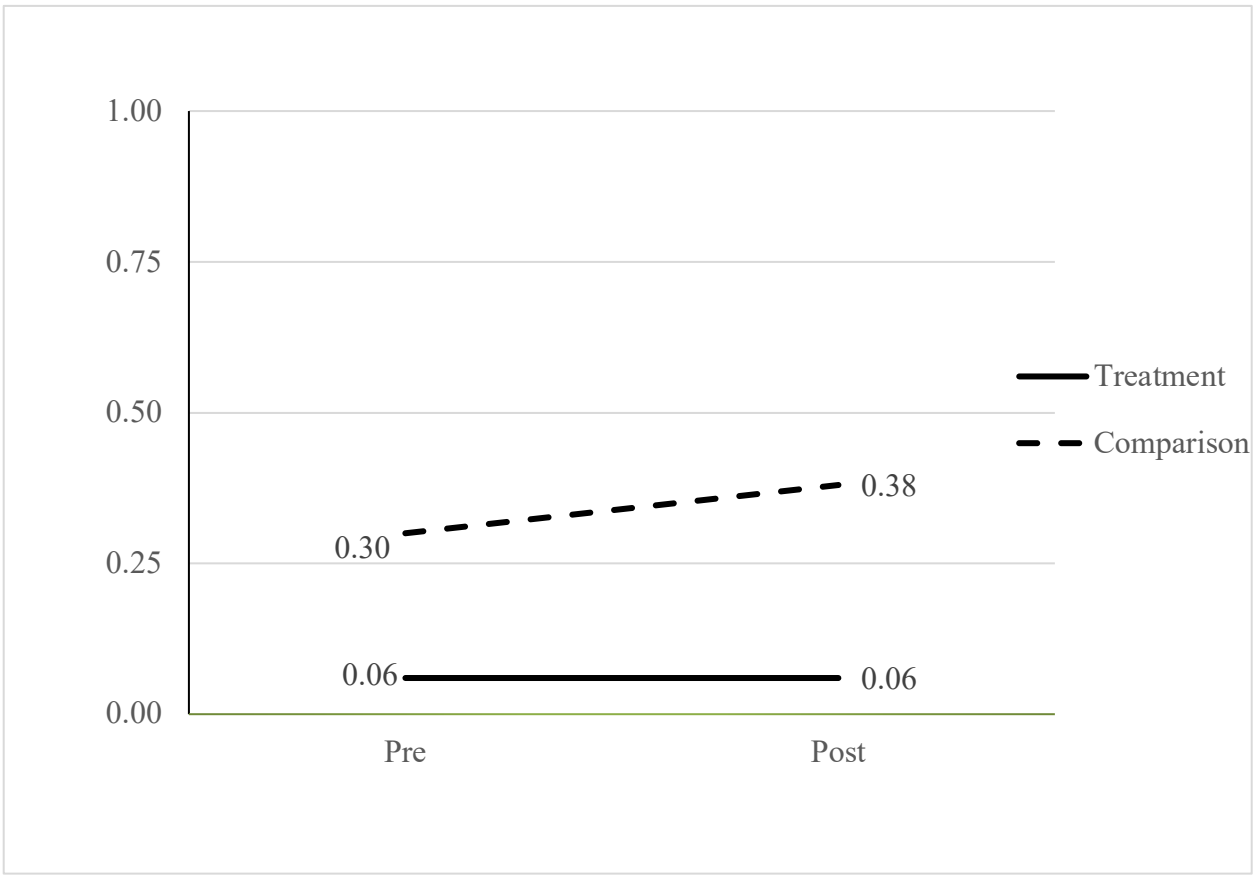


Current Vape Use (Past 30 days)

The main effect of time, $F(1, 116) = 0.15$, $p = 0.70$, and the time by group interaction, $F(1, 116) = 0.15$, $p = 0.70$, were not statistically significant. Current vape use (*past 30 days*) scores did not change from pretest (M = 0.06, SD= 0.32) to posttest (M = 0.06, SD= 0.32) for the treatment group, or from pretest (M = 0.30, SD = 1.29) to posttest (M = 0.38, SD = 1.43) for the comparison group. The current data indicate that the program does not have any effect on current vape use among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 5).

Figure 5

No Significant Changes in Vape Use from Pretest to Posttest

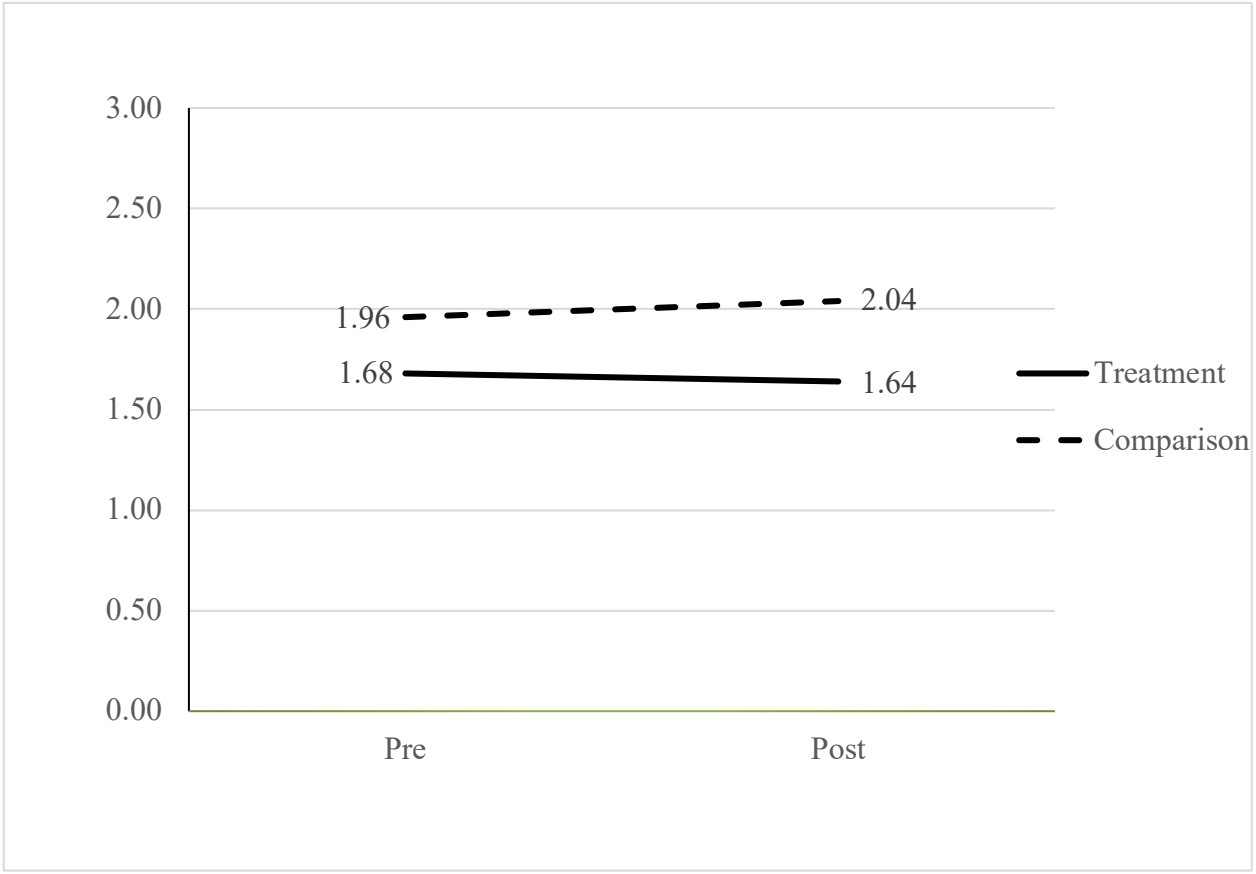


Intentions of Alcohol Use

The main effect of time, $F(1, 116) = 0.10$, $p = 0.75$, and the time by group interaction, $F(1, 116) = 0.96$, $p = 0.33$, were not statistically significant. Intentions to consume alcohol did not change from pretest (M = 1.68, SD= 0.76) to posttest (M = 1.64, SD= 0.76) for the treatment group, or from pretest (M = 1.96, SD = 0.89) to posttest (M = 2.04, SD = 0.92) for the comparison group. The current data indicate that the program does not have any effect on alcohol use intentions among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 6).

Figure 6

No Significant Changes in Alcohol Use Intentions from Pretest to Posttest

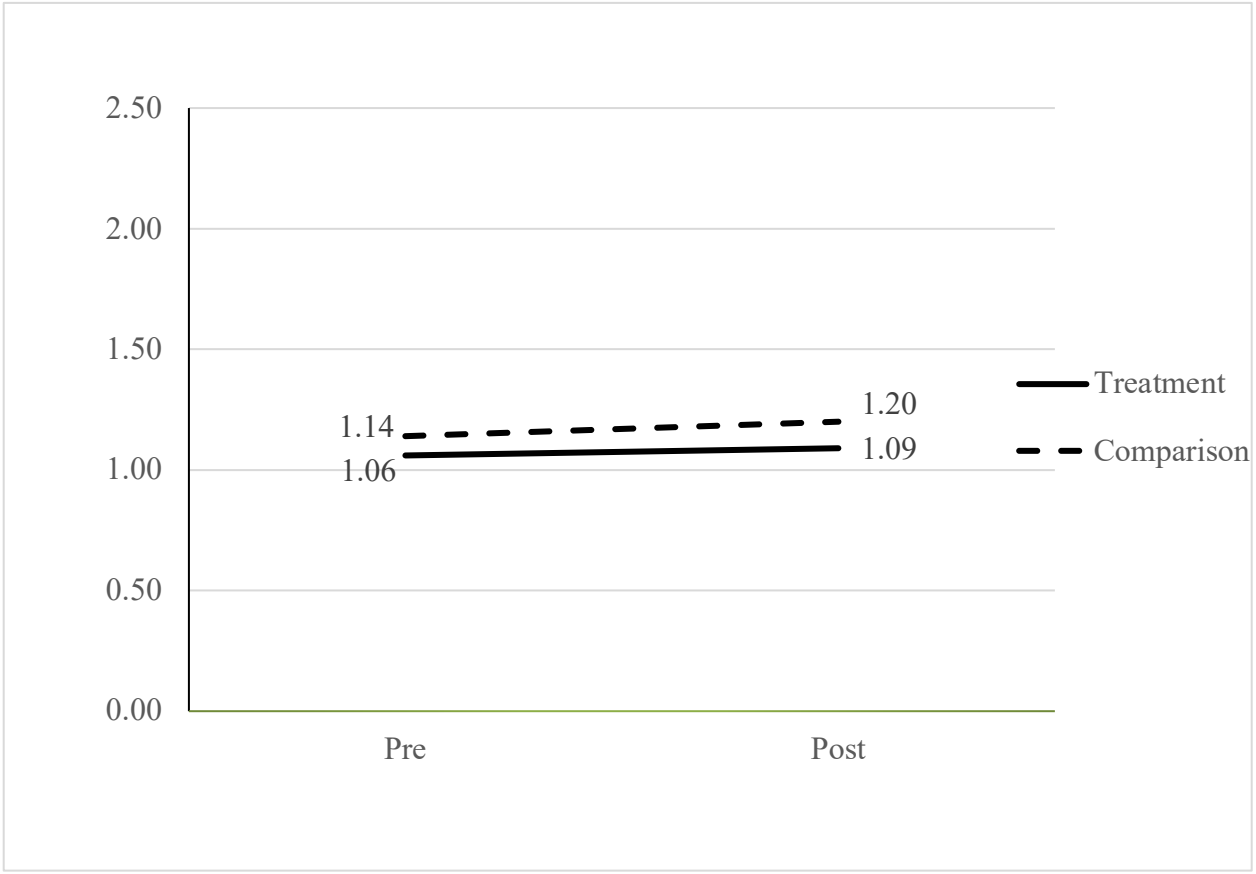


Intentions of Tobacco Use

The main effect of time, $F(1, 116) = 0.74$, $p = 0.39$, and the time by group interaction, $F(1, 116) = 0.15$, $p = 0.70$, were not statistically significant. Intentions to use tobacco did not change from pretest (M = 1.06, SD= 0.25) to posttest (M = 1.09, SD= 0.28) for the treatment group, or from pretest (M = 1.14, SD = 0.49) to posttest (M = 1.20, SD = 0.60) for the comparison group. The current data indicate that the program does not have any effect on tobacco use intentions among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 7).

Figure 7

No Significant Changes in Tobacco Use Intentions from Pretest to Posttest

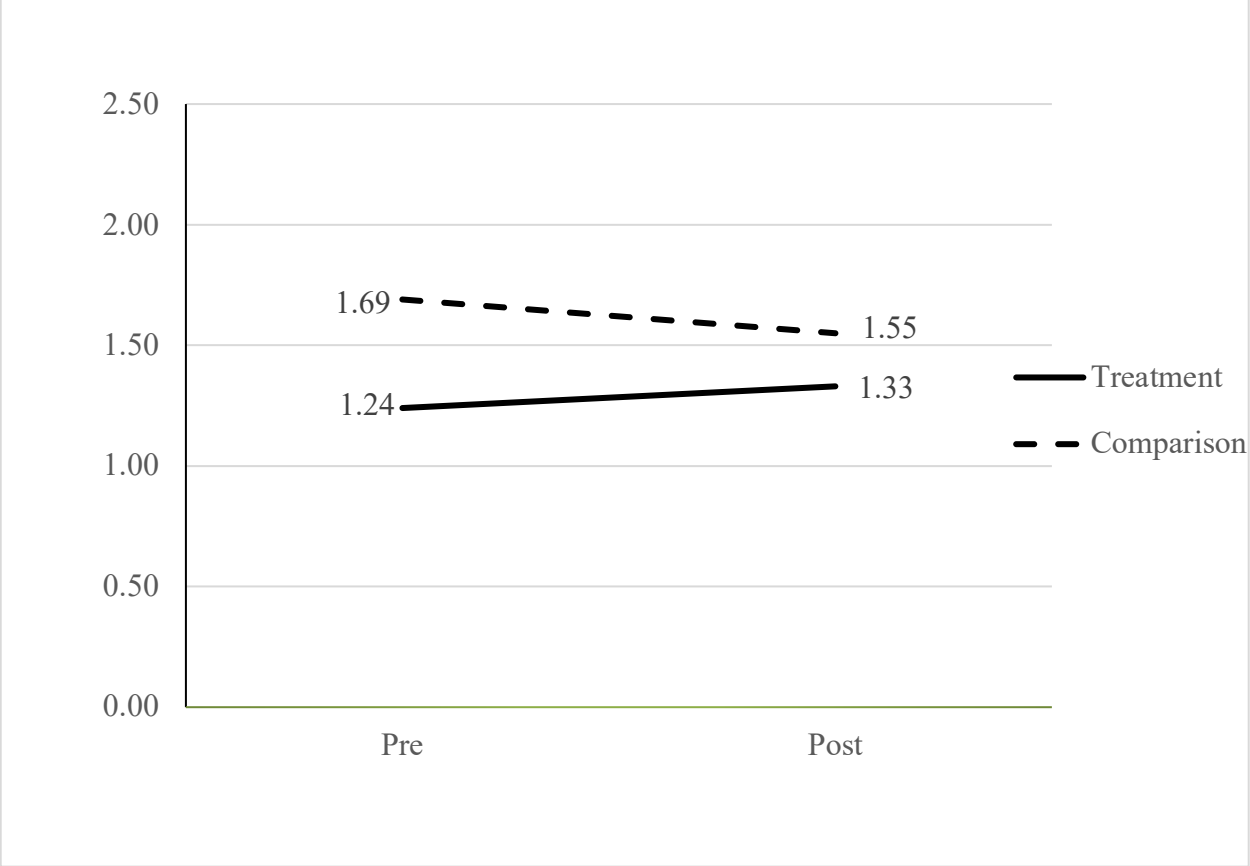


Intentions of Marijuana Use

The main effect of time, $F(1, 115) = 0.14$, $p = 0.71$, and the time by group interaction, $F(1, 115) = 2.44$, $p = 0.12$, were not statistically significant. Intentions to use marijuana did not change from pretest (M = 1.24, SD= 0.57) to posttest (M = 1.34, SD= 0.73) for the treatment group, or from pretest (M = 1.70, SD = 0.97) to posttest (M = 1.55, SD = 0.88) for the comparison group. The current data indicate that the program does not have any effect on marijuana use intentions among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 8).

Figure 8

No Significant Changes in Marijuana Use Intentions from Pretest to Posttest

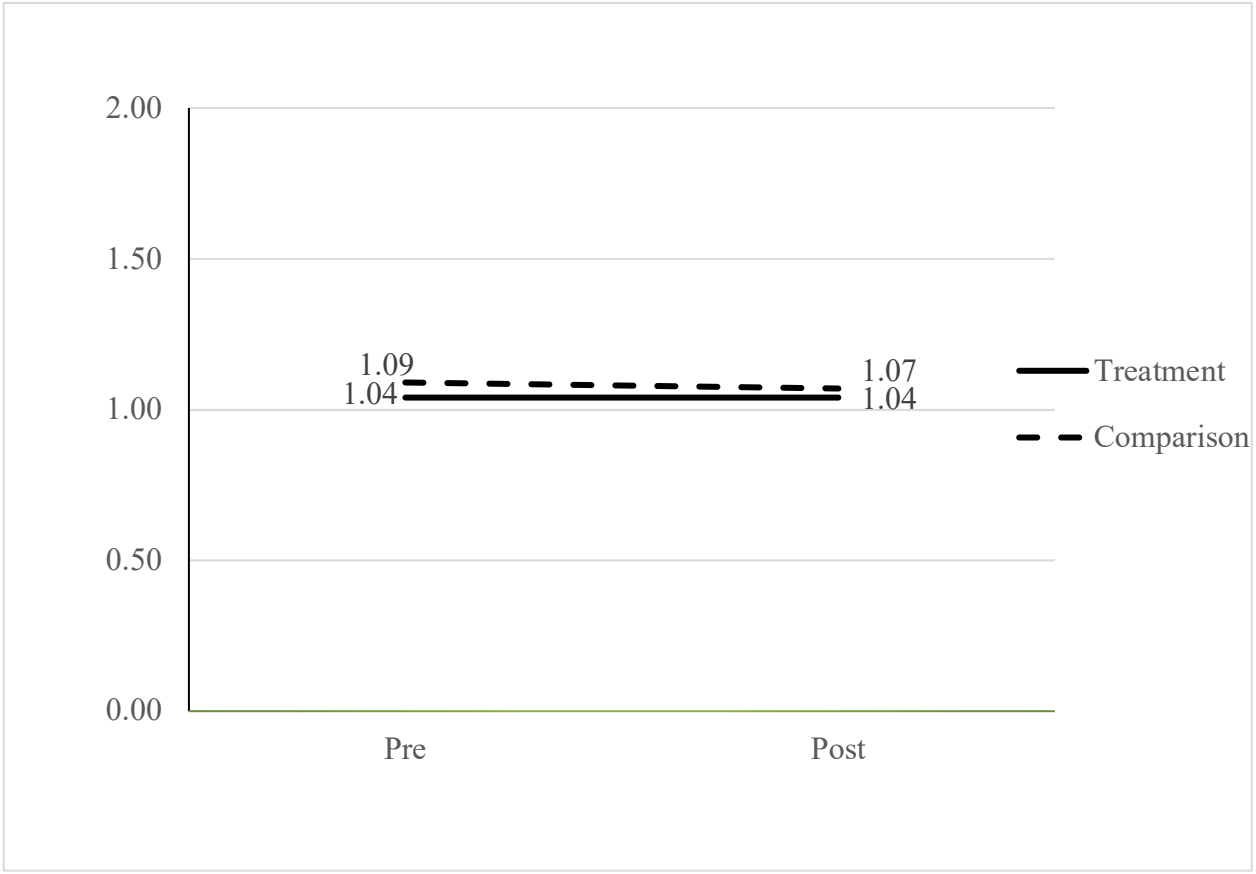


Intentions of Illegal Drug Use

The main effect of time, $F(1, 116) = 0.02$, $p = 0.88$, and the time by group interaction, $F(1, 116) = 0.02$, $p = 0.88$, were not statistically significant. Intentions to use illegal drugs did not change from pretest (M = 1.04, SD= 0.29) to posttest (M = 1.04, SD= 0.20) for the treatment group, or from pretest (M = 1.08, SD = 0.41) to posttest (M = 1.07, SD = 0.39) for the comparison group. The current data indicate that the program does not have any effect on illegal drug use intentions among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 9).

Figure 9

No Significant Changes in Illegal Drug Use Intentions from Pretest to Posttest

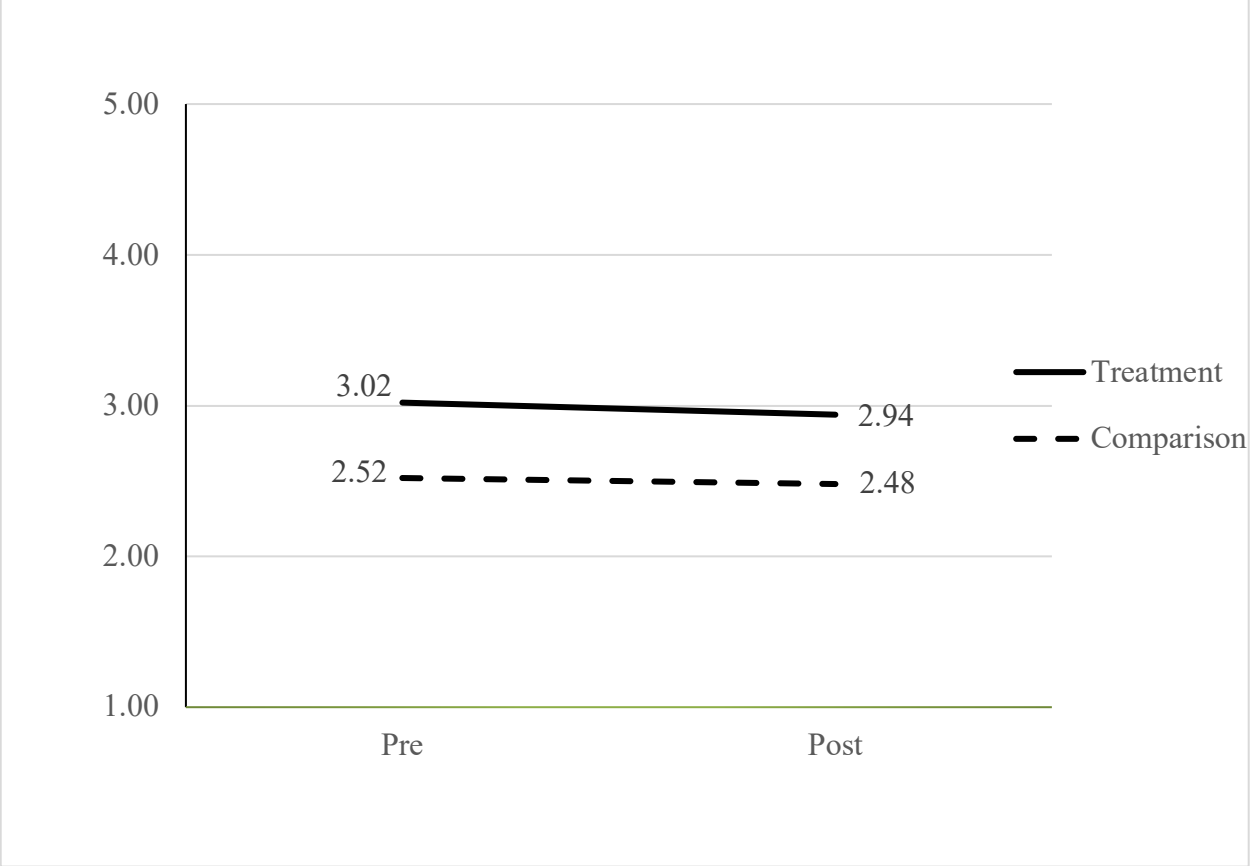


Avoid Alcohol Use

The main effect of time, $F(1, 116) = 0.14$, $p = 0.71$, and the time by group interaction, $F(1, 116) = 0.02$, $p = 0.90$, were not statistically significant. Students' decision to avoid drinking alcohol did not change from pretest (M = 3.02, SD= 1.45) to posttest (M = 2.94, SD= 1.50) for the treatment group, or from pretest (M = 2.52, SD = 1.50) to posttest (M = 2.48, SD = 1.51) for the comparison group. The current data indicate that the program does not have any effect on decisions to avoid situations where adolescents will be drinking alcohol among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 10).

Figure 10

No Significant Changes in Students' Decision to Avoid Alcohol from Pretest to Posttest

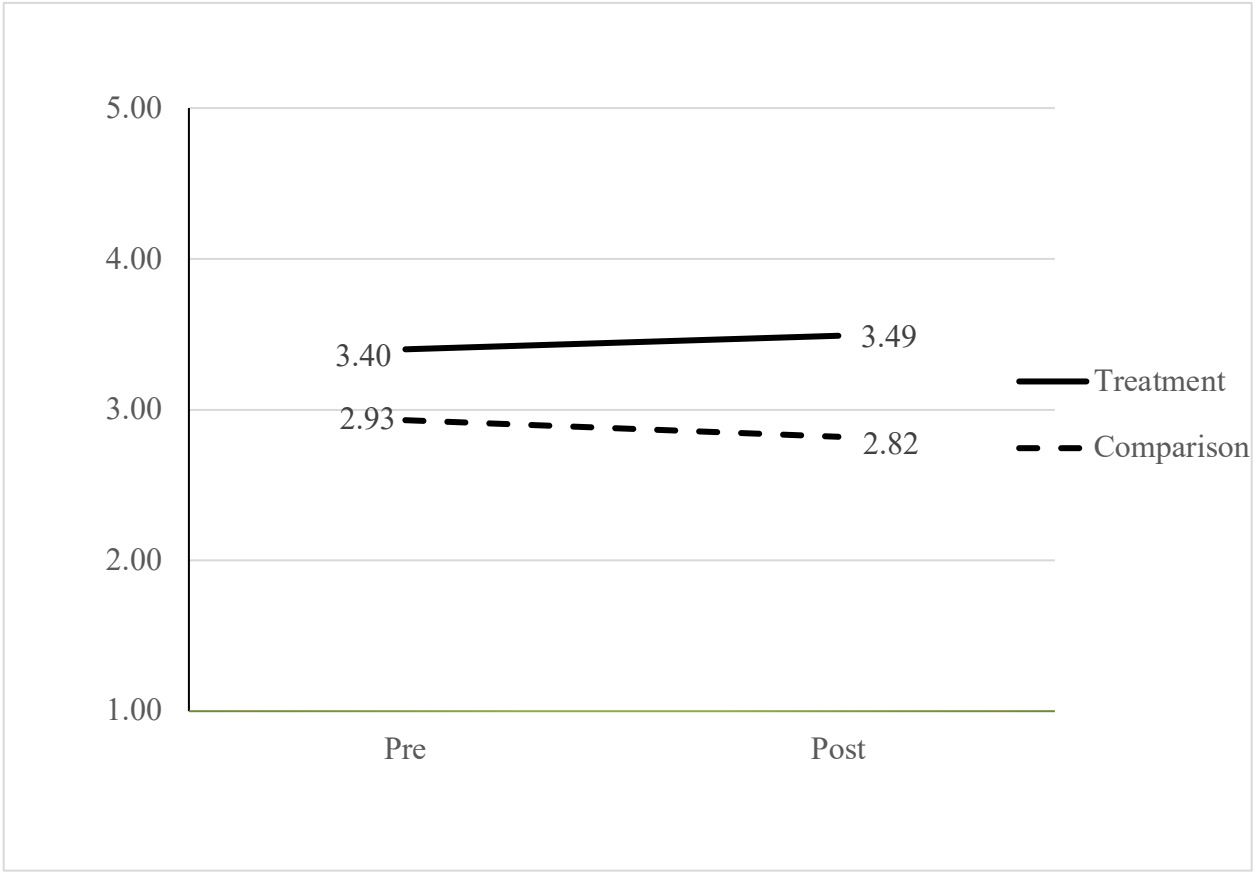


Avoid Tobacco Use

The main effect of time, $F(1, 116) = 0.01$, $p = 0.94$, and the time by group interaction, $F(1, 116) = 0.29$, $p = 0.59$, were not statistically significant. Students' decision to avoid smoking tobacco did not change from pretest (M = 3.40, SD= 1.68) to posttest (M = 3.49, SD= 1.65) for the treatment group, or from pretest (M = 2.93, SD = 1.77) to posttest (M = 2.82, SD = 1.78) for the comparison group. The current data indicate that the program does not have any effect on decisions to avoid situations where adolescents will be smoking tobacco among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 11).

Figure 11

No Significant Changes in Students' Decision to Avoid Tobacco from Pretest to Posttest

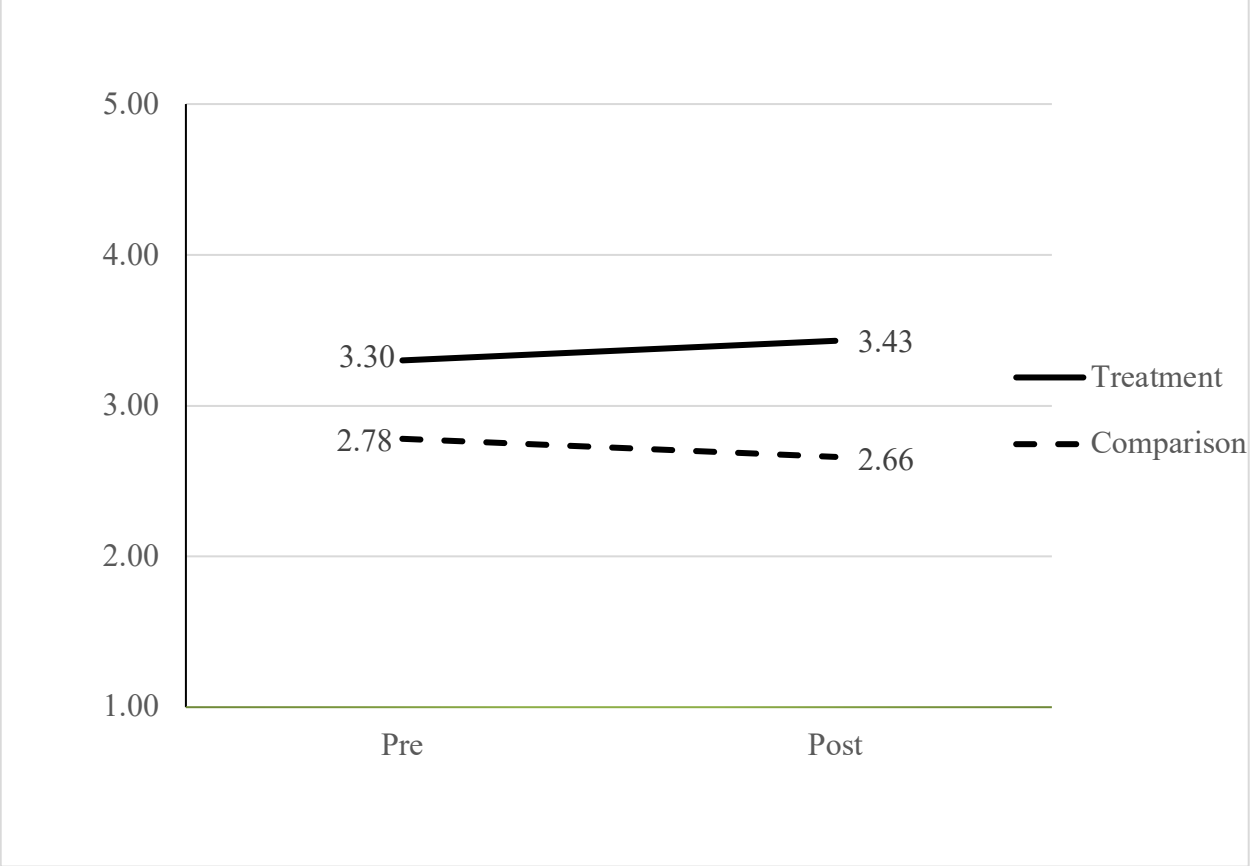


Avoid Marijuana Use

The main effect of time, $F(1, 116) = 0.00$, $p = 0.97$, and the time by group interaction, $F(1, 116) = 0.44$, $p = 0.51$, were not statistically significant. Students' decision to avoid using marijuana did not change from pretest (M = 3.30, SD= 1.61) to posttest (M = 3.43, SD= 1.61) for the treatment group, or from pretest (M = 2.77, SD = 1.65) to posttest (M = 2.66, SD = 1.71) for the comparison group. The current data indicate that the program does not have any effect on decisions to avoid situations where adolescents will be using marijuana among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 12).

Figure 12

No Significant Changes in Students' Decision to Avoid Marijuana from Pretest to Posttest

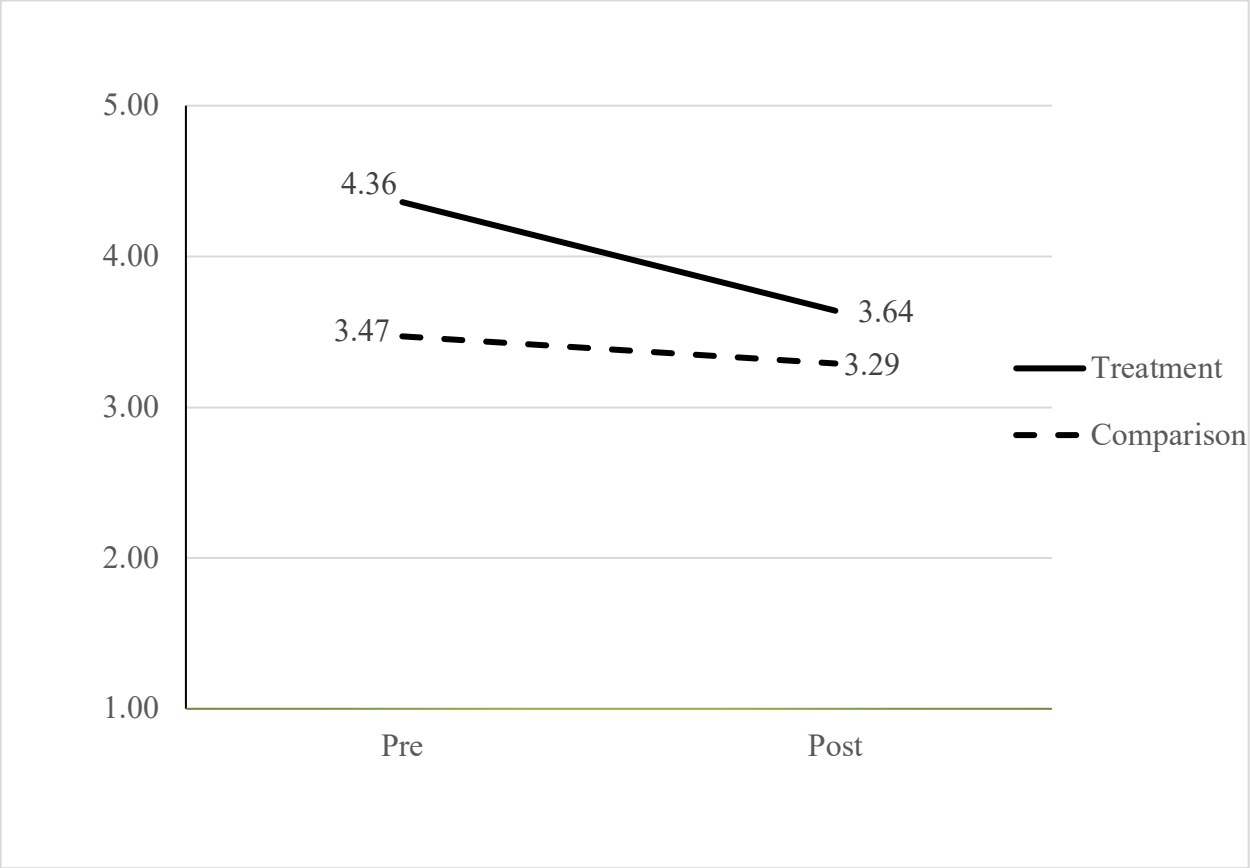


ATOD Resistance Skills (Saying "No")

The main effect of time, $F(1, 29) = 2.79$, $p = 0.11$, and the time by group interaction, $F(1, 29) = 1.02$, $p = 0.32$, were not statistically significant. Students' intention to use ATOD resistance skills by saying "no" did not change from pretest (M = 4.44, SD= 0.62) to posttest (M = 3.63, SD= 1.01) for the treatment group, or from pretest (M = 3.48, SD = 1.48) to posttest (M = 3.54, SD = 1.53) for the comparison group. The current data indicate that the program does not have any effect on intention to use ATOD resistance skills by saying "no" without giving a reason why among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 13).

Figure 13

No Significant Changes in Students' Intention to Use ATOD Resistance Skills by Saying "NO" from Pretest to Posttest



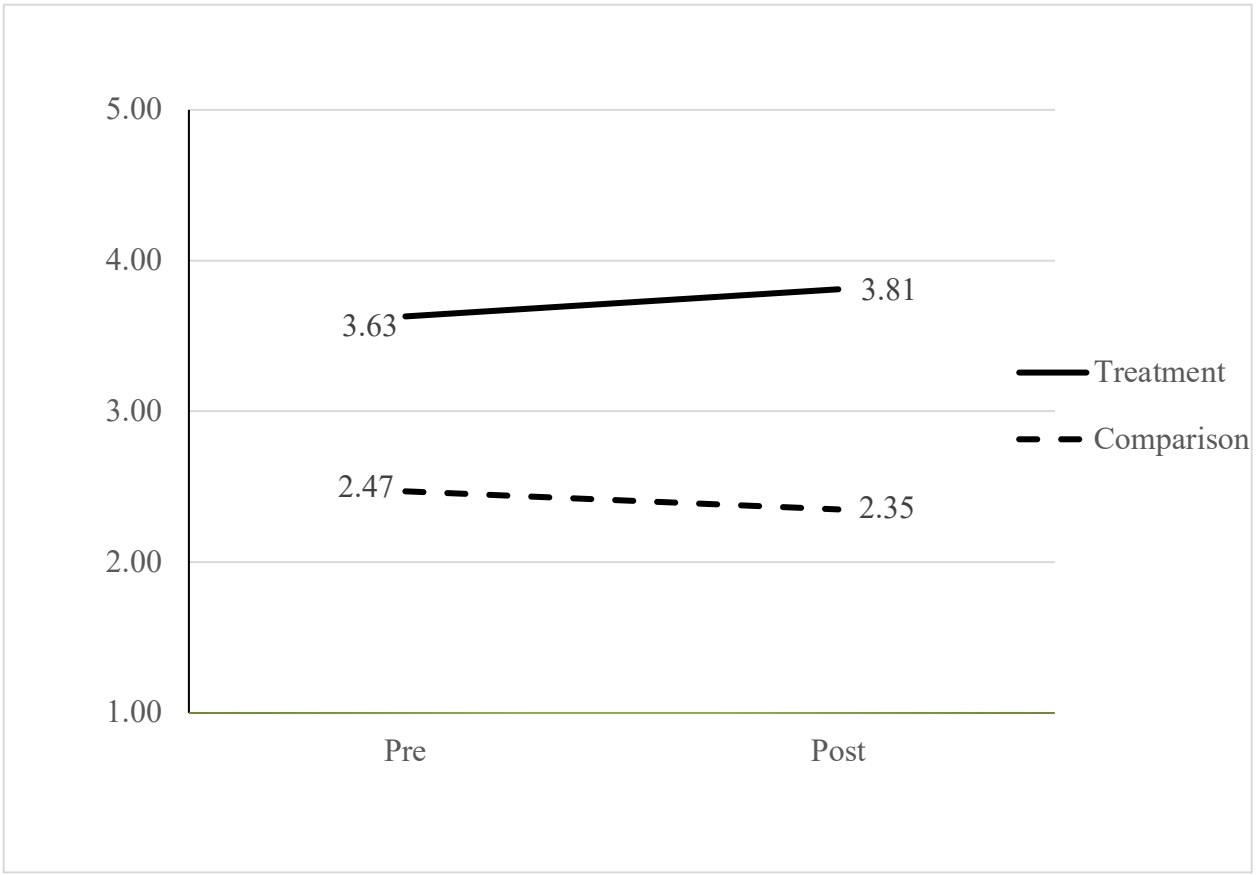
ATOD Resistance Skills (Leaving the Situation)

The main effect of time, $F(1, 31) = 0.04$, $p = 0.85$, and the time by group interaction, $F(1, 31) = 0.74$, $p = 0.40$, were not statistically significant. Students' intention to use ATOD resistance skills by leaving the situation did not change from pretest (M = 3.70, SD= 1.08) to posttest (M = 3.76, SD= 1.20) for the treatment group, or from pretest (M = 2.65, SD = 1.52) to posttest (M = 2.71, SD = 1.60) for the comparison group. The current data indicate that the program does not have any effect on intention to use ATOD resistance skills by leaving the situation without accepting the offer among those students receiving the kiR program (treatment

group) compared to those students who did not receive the program (comparison group) (see Figure 14).

Figure 14

No Significant Changes in Students' Intention to Use ATOD Resistance Skills by Leaving the Situation from Pretest to Posttest



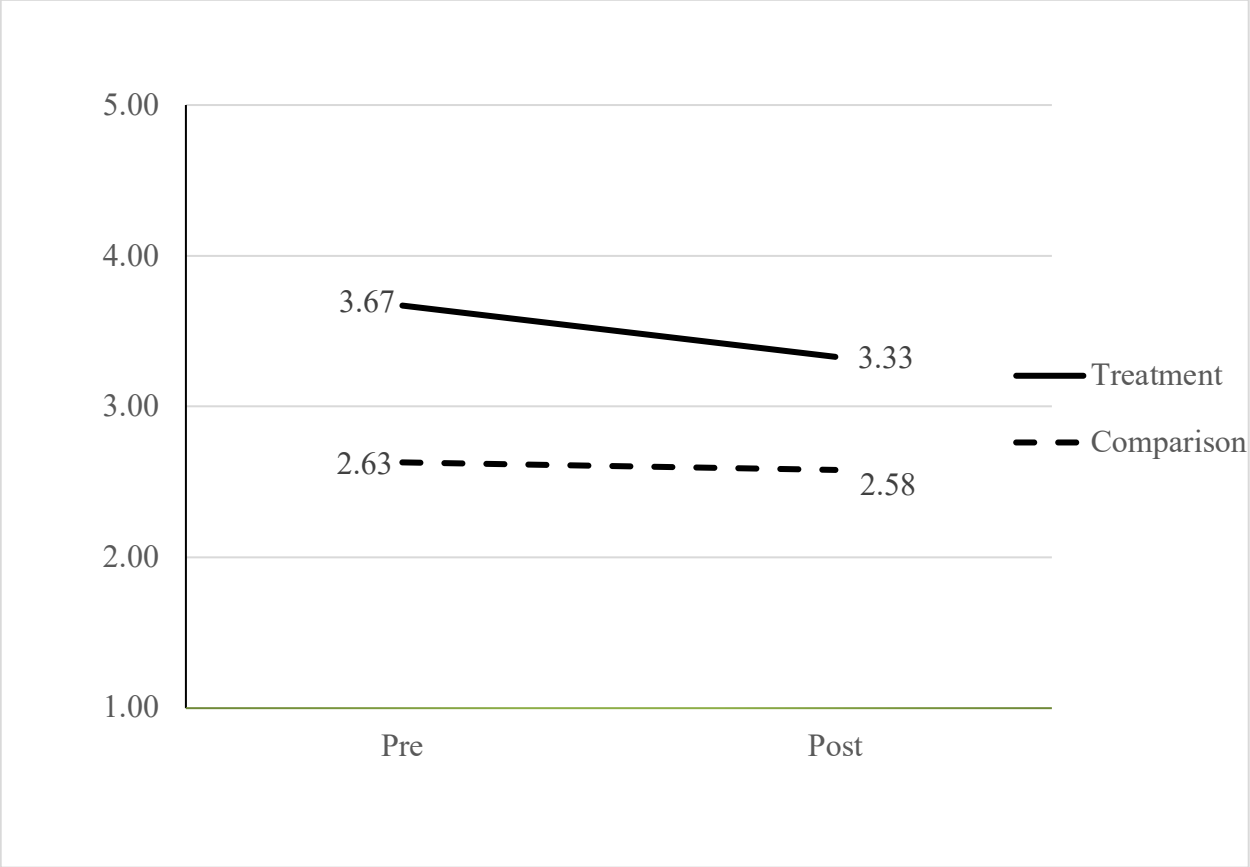
ATOD Resistance Skills (Giving an Explanation or Excuse)

The main effect of time, $F(1, 32) = 0.69$, $p = 0.41$, and the time by group interaction, $F(1, 32) = 0.36$, $p = 0.55$, were not statistically significant. Students' intention to use ATOD resistance skills by giving an explanation or excuse to turn down the offer did not change from pretest ($M = 3.33$, $SD = 1.43$) to posttest ($M = 3.41$, $SD = 1.18$) for the treatment group, or from pretest ($M = 2.68$, $SD = 1.42$) to posttest ($M = 2.69$, $SD = 1.52$) for the comparison group. The

current data indicate that the program does not have any effect on intention to use ATOD resistance skills by giving an explanation or excuse to turn down the offer among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 15).

Figure 15

No Significant Changes in Students' Intention to Use ATOD Resistance Skills by Explaining or Making an Excuse to Turn Down the Offer from Pretest to Posttest



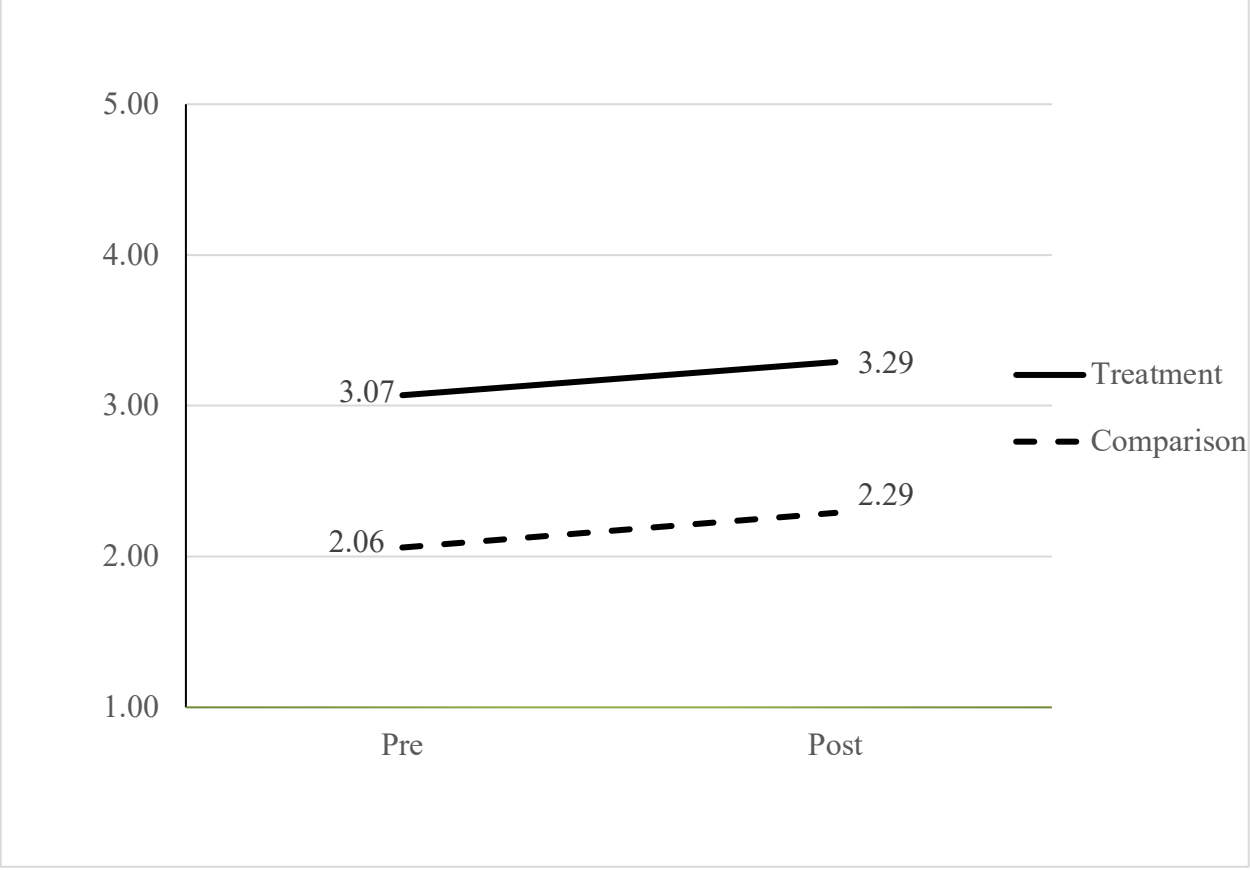
ATOD Resistance Skills (Using Some Other Way to Deny the Offer)

The main effect of time, $F(1, 29) = 0.46$, $p = 0.50$, and the time by group interaction, $F(1, 29) = 0.00$, $p = 0.98$, were not statistically significant. Students' intention to use ATOD resistance skills by using some other way to deny the offer did not change from pretest (M =

3.11, SD= 1.63) to posttest (M = 3.32, SD= 1.29) for the treatment group, or from pretest (M = 2.07, SD = 1.36) to posttest (M = 2.58, SD = 1.59) for the comparison group. The current data indicate that the program does not have any effect on intention to use ATOD resistance skills by using some other way to deny the offer among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 16).

Figure 16

No Significant Changes in Students' Intention to Use ATOD Resistance Skills by Using Some Other Way to Turn Down the Offer from Pretest to Posttest

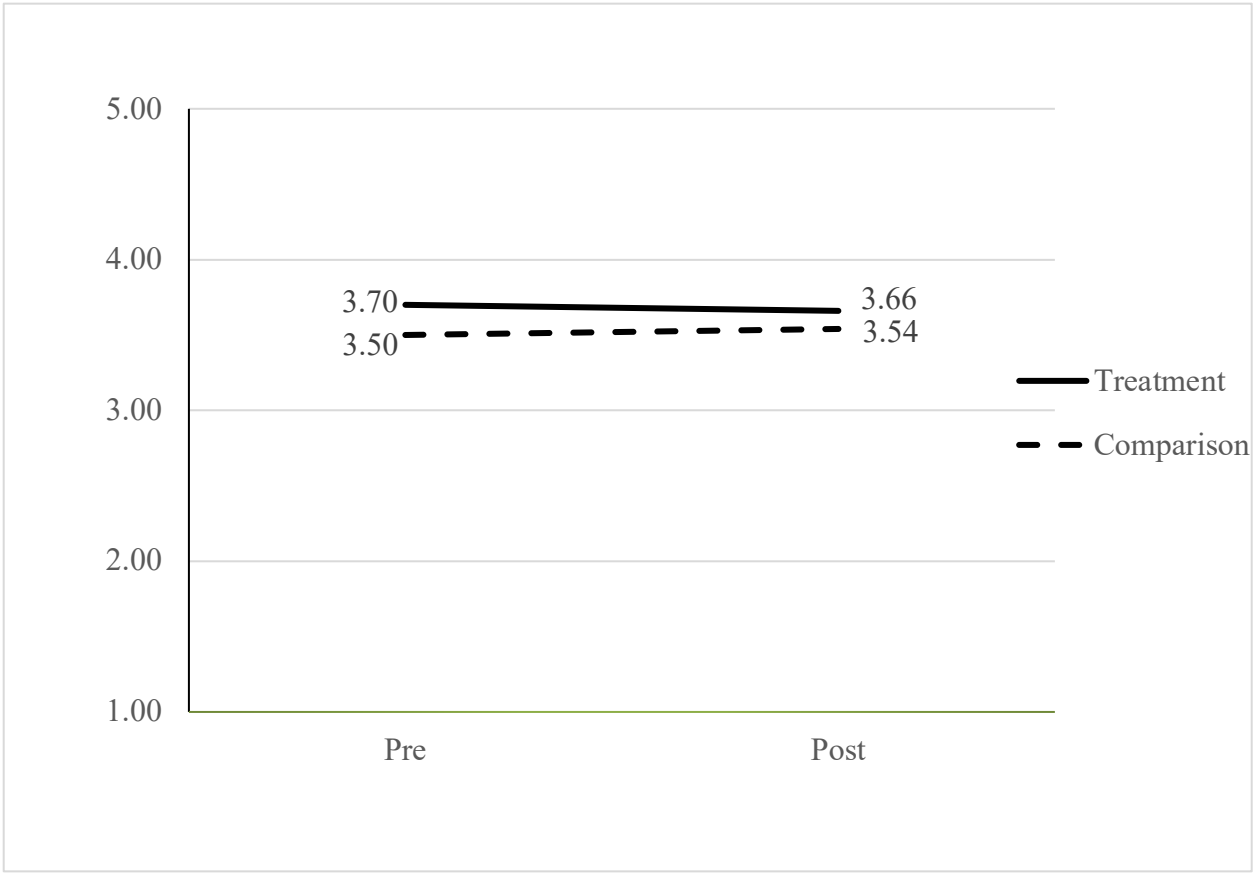


Self-Efficacy to Refuse a Family Member's ATOD Offer

The main effect of time, $F(1, 115) = 0.00$, $p = 1.00$, and the time by group interaction, $F(1, 115) = 0.11$, $p = 0.74$, were not statistically significant. Self-efficacy scores did not change from pretest (M = 3.70, SD= 1.37) to posttest (M = 3.66, SD= 1.29) for the treatment group, or from pretest (M = 3.51, SD = 1.53) to posttest (M = 3.54, SD = 1.52) for the comparison group. The current data indicate that the program did not have any effect on self-efficacy to refuse a family member's (e.g., parent, brother, sister, aunt, etc.) ATOD offer among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 17).

Figure 17

No Significant Changes in Students' Self-Efficacy to Refuse a Family Member's ATOD Offer from Pretest to Posttest

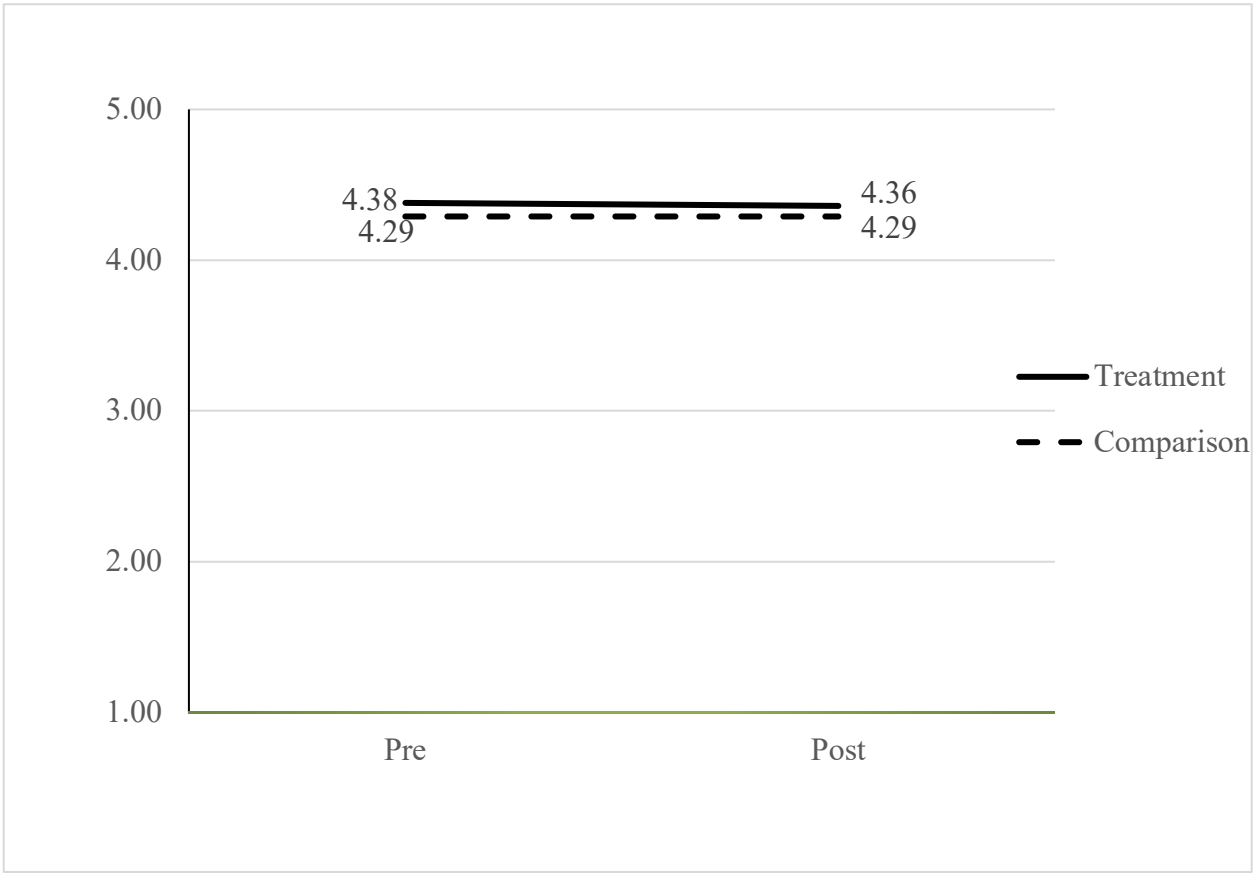


Self-Efficacy to Refuse a Stranger's ATOD Offer

The main effect of time, $F(1, 115) = 0.01$, $p = 0.94$, and the time by group interaction, $F(1, 115) = 0.01$, $p = 0.94$, were not statistically significant. Self-efficacy scores did not change from pretest (M = 4.38, SD= 1.44) to posttest (M = 4.36, SD= 1.44) for the treatment group, or from pretest (M = 4.30, SD = 1.46) to posttest (M = 4.29, SD = 1.46) for the comparison group. This shows that that the program did not have any effect on self-efficacy to refuse a stranger's ATOD offer among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 18).

Figure 18

No Significant Changes in Students' Self-Efficacy to Refuse a Stranger's ATOD Offer from Pretest to Posttest

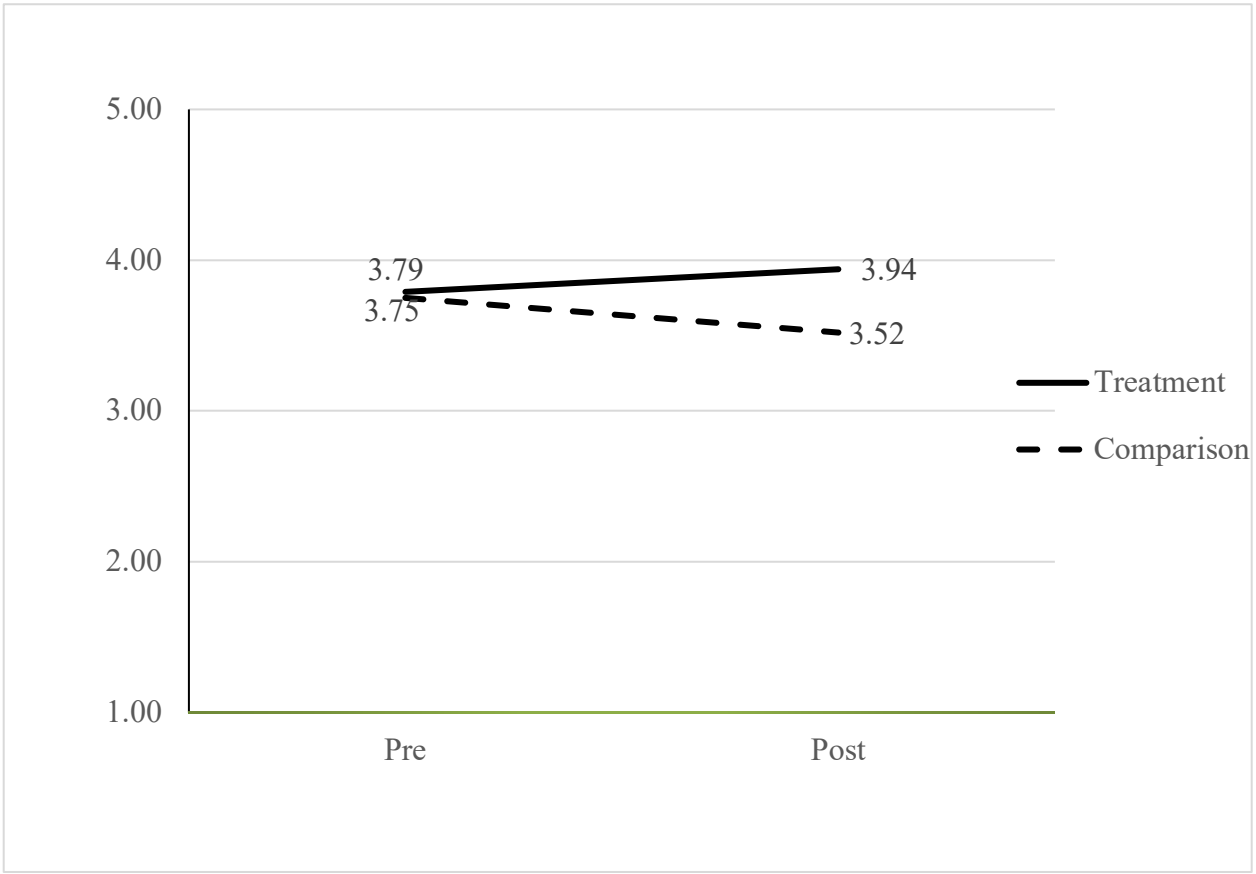


Self-Efficacy to Refuse a Friend's ATOD Offer

The main effect of time, $F(1, 113) = 0.10$, $p = 0.76$, and the time by group interaction, $F(1, 113) = 1.90$, $p = 0.17$, were not statistically significant. Self-efficacy scores did not change from pretest (M = 3.79, SD= 1.43) to posttest (M = 3.94, SD= 1.42) for the treatment group, or from pretest (M = 3.73, SD = 1.49) to posttest (M = 3.48, SD = 1.53) for the comparison group. The current data indicate that the program did not have any effect on self-efficacy to refuse a friend's ATOD offer among those students receiving the kiR program (treatment group) compared to those students who did not receive the program (comparison group) (see Figure 19).

Figure 19

No Significant Changes in Students' Self-Efficacy to Refuse a Friend's ATOD Offer from Pretest to Posttest



Discussion

Summary of Major Findings

The primary purpose of this study was to determine the impact of kiR on adolescents' ATOD use behaviors (i.e., alcohol use, tobacco use, marijuana use, vape use), intentions to use ATOD, decisions to avoid ATOD use, ATOD use resistance skills, and self-efficacy to refuse ATOD offers. The secondary purpose of this study was to describe the extent to which the program was implemented with fidelity via teacher self-reports and classroom observations. Overall, the results of this study suggest that there was no effect of the kiR program on any of the outcome variables. Therefore, the hypotheses were not supported by the results.

The findings of this study are inconsistent with previous research from Hecht et al. (2003), which demonstrated that the kiR drug prevention program had significant effects on drug use, norms, attitudes, and resistance strategies. On the other hand, this study is consistent with previous research from Pettigrew et al. (2015), which found no effects of the kiR program on students' self-efficacy (i.e., their belief that they possessed the ability to use the REAL strategies if they received a drug offer) or response efficacy (i.e., the belief that the resistance strategies taught in the lessons will be effective). Pettigrew et al. (2015) speculated that an immediate posttest might be too soon to detect any changes in self and response efficacy among young adolescents. Moreover, developing self and response efficacy may be a gradual process that requires students to be exposed to situations where they can apply (or not) refusal skills (Pettigrew et al., 2015). Similarly, this study conducted surveys on two separate occasions spaced approximately one month apart, which might not have provided enough time for adolescents to participate in the risk behavior and/or change their self-efficacy to refuse ATOD offers.

Study Limitations

There are at least five research limitations that should be noted. First, the sample sizes were not equal between the treatment and comparison group. The treatment group consisted of 47 students in ninth grade and the comparison group consisted of 71 students in grades 9-12. Second, the groups were not equivalent on several baseline characteristics (i.e., age, grade level, and gender). Among those in the treatment group, 48.9% were 14 years old and 51.1% were 15 years old. Among those in the comparison group, 14.1% were 14 years old, 16.9% were 15 years old, 7.0% were 16 years old, 32.4% were 17 years old, and 28.2% were 18 years old. All the students in the treatment group were in ninth grade, while the students in the comparison group varied in grade level (9-12). There were more males in the comparison group (64.8%) than there were in the treatment group (27.7%). Additionally, there were more females in the treatment group (70.2%) than there were in the comparison group (32.4%). These baseline differences are typically expected in a quasi-experimental design because there is no randomization into treatment and comparison groups. Third, there was a low number of teachers implementing the program. One reason why this may have occurred is because teachers were unable to attend the six hour/one-day training due to COVID-19, last-minute scheduling changes, and/or they were simply not interested in the supplemental drug prevention curriculum. As a result, no analyses could be conducted to examine the effect of implementation fidelity on the outcomes of interest because there would have been a lack of variability between the two teachers. Fourth, the use of self-report methods may have increased the potential for biases. For example, teachers were entrusted to complete the fidelity logs immediately after each lesson; However, there was no way of knowing whether teachers were completing them after each lesson or at the end of each school day, increasing the potential for recall bias (i.e., the inability to remember whether certain

components were implemented during the lesson). It is possible that teachers required more specific instructions on the reporting of implementation fidelity. Student outcomes were also based solely on student self-reports. Therefore, the results may be biased in terms of how accurate and truthful the student responses were. Additionally, the anonymity of a self-report measure may lead to a reduction in accountability and diminish student motivation to respond to items conscientiously (Dusenbury et al., 2003). Fifth, the time span of this study was insufficient. This study took place at the end of the school year when teachers had other commitments and approximately 3-4 weeks to implement the kiR program. Due to competing tasks (e.g., teaching both prevention education and core subject area), teachers implemented the program on Mondays, Wednesdays, and Fridays, and reserved Tuesdays and Thursdays for their core curriculum. This may have compromised student learning, consistency of the program, perception of the value of the program, and delivery of the program. Finally, the short time span might not have provided enough time to change adolescent ATOD use behavior because the students simply did not have enough time to participate in the risk behavior and/or practice applying the skills that they learned in each lesson of the kiR program.

Future Research

Future studies should utilize a randomized controlled trial (RCT) to investigate the effectiveness of the kiR program. This would make for a stronger study and overcome many of the limitations of the current study. However, conducting RCT's in schools with students is difficult because it may require schools and school administrators to adjust school schedules to accommodate the research study. Additionally, future studies should include more teachers in both the treatment group and the comparison group to examine the effect of implementation fidelity on outcome variables.

Furthermore, it is unknown if students received the full breadth of the program (10 lessons) because the teachers reported omitting activities and/or delivering certain components of the lesson online. In some cases, teachers reported covering approximately 15-40% of the entire lesson with no changes. Therefore, future studies should attempt to ensure that teachers in the treatment group implement the program with an optimal amount of fidelity. This might require researchers to provide ongoing training or technical assistance. Rohrbach et al. (2010) suggested that the extent and type of training that is provided to teachers before implementation begins as well as throughout the implementation process determines their ability to deliver evidence-based prevention programs with fidelity and achieve targeted outcomes. Future research is warranted to examine the relationship between the type of training provided to classroom teachers and fidelity of implementation. Finally, future researchers should consider conducting 3-month or 6-month follow-up data collection to capture changes in outcome variables.

Public Health Implications

Findings from this study have implications for adolescent ATOD use prevention research. First, it must be noted that nearly all the studies on kiR involve middle school students. Therefore, this study is among the very few to examine the overall impact of kiR on high school students' ATOD use behaviors (i.e., alcohol use, tobacco use, marijuana use, vape use), intentions to use ATOD, decisions to avoid ATOD use, ATOD use resistance skills, and self-efficacy to refuse ATOD offers. Despite the limitations of this study, the kiR program may not be effective in reducing ATOD use among high school students because of the lack of implementation fidelity. As a result, it is important that teachers maintain the fidelity of implementation to enhance the effectiveness of ATOD prevention programs in schools. The findings of this study can be used to encourage qualified health teachers to participate in ATOD

prevention programs and training. This would ensure that health teachers have sufficient and up-to-date knowledge on best practices in ATOD prevention. This is especially beneficial for schools that continue to use outdated health curricula, which present ineffective ATOD prevention strategies such as scare tactics, testimonials, and information dissemination approaches (Botvin, 1998). By providing a certain type of training, teachers will feel confident enough to deliver ATOD prevention programs and teach adolescents essential skills such as drug resistance skills, decision-making skills, and communication skills commonly taught in effective ATOD prevention programs. Additionally, continual education and retraining of teachers through booster training courses and/or workshops may be helpful in maintaining program effects.

Summary

This study was an evaluation of the keepin' it REAL (kiR) drug prevention program, which utilized a quasi-experimental design to compare the treatment and comparison group. The findings of this study can be interpreted as devaluing the importance of the kiR program and emphasizing teacher characteristics; however, both play a crucial role in program implementation and effectiveness. The limitation of time was a major hindrance, making it difficult to properly assess adolescents' ATOD use behaviors, intentions to use ATOD, decisions to avoid ATOD use, ATOD use resistance skills, and self-efficacy to refuse ATOD offers. Future research is warranted to further examine the impact of kiR on ATOD use behaviors among high school students, preferably a longitudinal study to allow program effects to take place.

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Appendix A: Overview of Lessons

Lesson 1: Options and Choices	Understand the purpose of the keepin' it REAL program, recognize that behaviors have favorable or unfavorable consequences, and differentiate between simple preference and wise choice.
Lesson 2: Risks	Identify risks that could be potentially harmful, risks present in a situation, and risks present in seemingly safe situations.
Lesson 3: Communication and Conflict	A discussion of three different communication styles: passive, aggressive, and assertive. Verbalize preferences that are not popular and acknowledge others' views without agreeing with them.
Lesson 4: Refuse	Video of students using assertiveness techniques and refusal skills. An activity on saying "NO" assertively.
Lesson 5: Explain	Video and discussion on explanations that students give for not doing drugs, including alcohol and cigarettes.
Lesson 6: Avoid	Video on how students avoid harmful situations, an activity on how to avoid situations using the ABCD problem solving method, and an avoid scenarios group activity.
Lesson 7: Leave	Video on how some students remove themselves from situations where they are uncomfortable. A role-play activity on all four resistance strategies.
Lesson 8: Norms	A questionnaire on norms and a name acrostic activity to help students know what it means to value themselves.
Lesson 9: Feelings	A discussion and role-play group activity on feelings. Students identify how the characters disagreed and how they explained that their feelings were valid.
Lesson 10: Support Networks	Review of skills learned in the keepin' it REAL program.

Appendix B: Consent Form

Parent/Guardian Consent Form

Your child is being asked to participate in a research project conducted by Dr. Robert G. LaChausse in the Department of Public Health Sciences at California Baptist University (CBU). Your child's school district has chosen your child's school and his/her health classes to participate in this research project. The Institutional Review Board (IRB) at CBU has reviewed and approved this study in accordance with federal ethical guidelines and procedures. State of California Educational Code #51513 requires that parents must be notified and provide consent in order for students to participate in any survey.

PURPOSE: The purpose of this study is to examine the effectiveness of the school's health curriculum.

PARTICIPATION: Students will be asked to complete a brief, confidential survey during their health class on two separate occasions spaced approximately 3 months apart. The survey takes about 10 minutes to complete. The survey asks questions about health including tobacco and drug use. These questions do not imply that your child is involved in any inappropriate behavior. A copy of the survey is available for your review by contacting your student's health teacher. Your child's name will not be associated with his/her responses at any time and his/her responses to the survey questions will not be shared with anyone. Only the researcher will see individual survey responses. Your child does not have to participate in this study and may stop at any time. Your child does not have to answer any question that he/she does not want to.

RISKS & BENEFITS: The risks associated with your son/daughter's participation in this study seem to be limited to possible nervousness over answering questions about their own beliefs and behaviors. We will reduce any possible risks by telling your child that there are no wrong or right answers and that responses are confidential. We expect this research to benefit our understanding of health education programs in schools. If your child should experience any unease with this survey, you or your child can contact your school counselor or the Riverside CARES helpline at (800) 706-7500.

VOLUNTARY PARTICIPATION: Your child's participation is completely voluntary. Your decision whether to allow your child to participate will in no way affect your current or future relationship with your child's school, his/her grades, or CBU. You have the right to withdraw your child from the study at any time without penalty by contacting the researcher, Dr. Robert LaChausse, at (951) 552-8484 or rlachausse@calbaptist.edu.

CONFIDENTIALITY: Your child's individual privacy will be maintained in all publications or presentations resulting from this study. Your child's name will not be associated with his/her responses at any time. Data will be presented in group form only. To preserve the confidentiality of your child's responses, we will ask your child not to write or submit his/her name anywhere on the survey.

If you have any questions or would like more information, please contact Dr. LaChausse at (951) 552-8484 or rlachausse@calbaptist.edu. You can also contact the IRB Chairperson at 951.343-4507 or IRB@calbaptist.edu.

Please check the box indicating your choice below and have your child return this form to their health teacher.

☐ I voluntarily give my consent for my child to participate in this research study.

☐ I **DO NOT** want my child to participate in this research study.

Name of Student: _____ *(Please print)*

Parent/Guardian Signature: _____

Signature of Researcher: _____

Appendix C: Consent Form (Spanish Version)

Formulario De Consentimiento De Los Padres/Tutores

Se le está pidiendo a su hijo/hija que participe en un estudio de investigación realizado por el Dr. Robert G. LaChausse en el Departamento de Ciencias de la Salud Pública de la Universidad Bautista de California (CBU). El distrito escolar de su hijo/hija ha escogido la escuela y la clase de salud de su estudiante para participar en este estudio de investigación. La Junta de Revisión Institucional (IRB) de CBU ha revisado y aprobado este estudio de acuerdo con las pautas y procedimientos éticos federales. El Código Educativo del Estado de California #51513 requiere que los padres den su consentimiento para que su estudiante participe en una encuesta.

PROPÓSITO: El propósito de este estudio es examinar la efectividad del plan de estudios de salud de la escuela.

PARTICIPACIÓN: Se les pedirá a los estudiantes que completen una encuesta confidencial durante su clase de salud en dos ocasiones separadas con 3 meses de diferencia. La encuesta tarda unos 10 minutos en completarse. Hace preguntas sobre la salud, incluido el consumo de alcohol, tabaco, y otras drogas. Estas preguntas no implican que su hijo/hija esté involucrado en algún comportamiento inapropiado. Puede revisar una copia de la encuesta comunicándose con el maestro de salud de su estudiante. El nombre de su hijo/hija no se asociará con sus respuestas en ningún momento y no se compartirán con nadie. Solo el investigador verá las respuestas individuales de la encuesta. Su hijo/hija no tiene que participar en este estudio y puede dejarlo en cualquier momento. Su hijo/hija no tiene que responder una pregunta que no quiere.

RIESGOS Y BENEFICIOS: El riesgo asociado con la participación de su hijo/hija en este estudio puede incluir un posible nerviosismo al responder preguntas sobre sus propias creencias y comportamientos. Reduciremos ese riesgo diciéndole a su hijo/hija que no hay respuestas correctas o incorrectas y que sus respuestas son confidenciales. Esperamos que esta investigación beneficie nuestra comprensión de los programas de educación para la salud en las escuelas. Si su estudiante experimenta alguna inquietud con esta encuesta, usted o su hijo/hija pueden comunicarse con su consejero escolar o con la línea de ayuda de Riverside CARES al (800) 706-7500.

PARTICIPACIÓN VOLUNTARIA: La participación de su hijo/hija es completamente voluntaria. Su decisión de permitir que su estudiante participe no afectará su relación con la escuela de su hijo/hija, sus calificaciones, o CBU. Tiene derecho a retirar a su hijo/hija del estudio en cualquier momento sin penalización comunicándose con el investigador, Dr. Robert LaChausse, al (951) 552-8484 o rlachausse@calbaptist.edu.

CONFIDENCIALIDAD: La privacidad individual de su estudiante se mantendrá en todas las publicaciones o presentaciones que resulten de este estudio. El nombre de su hijo/hija no se asociará con sus respuestas en ningún momento. Los datos se presentarán en forma de grupo únicamente. Para preservar la confidencialidad de las respuestas de su hijo/hija, le pediremos que no escriba su nombre en ninguna parte de la encuesta.

Si tiene alguna pregunta o desea obtener más información, comuníquese con el Dr. LaChausse al (951) 552-8484 o rlachausse@calbaptist.edu. También puede comunicarse con el presidente del IRB al (951) 343-4507 o IRB@calbaptist.edu.

Marque la casilla que indica su elección y pídale a su hijo/hija que devuelva este formulario a su maestro de salud.

- ☐ Doy mi consentimiento para que mi hijo/hija participe en este estudio de investigación.
- ☐ **NO** deseo que mi hijo/hija participe en este estudio de investigación.

Nombre del Estudiante: _____ *(Por favor imprimir)*

Firma del Padre/Tutor: _____

Firma del Investigador: _____

Appendix D: Student Survey

1. How do you describe yourself?

- ○ Male
- ○ Female
- ○ Transgender
- ○ Do not identify as female, male, or transgender

2. What is your age?

- ○ 13
- ○ 14
- ○ 15
- ○ 16
- ○ 17
- ○ 18 or older

3. Are you Hispanic (Latino)?

- ○ Yes
- ○ No

4. Which of the following best describes you?

- ○ White
- ○ Black or African American
- ○ American Indian
- ○ Asian
- ○ Native Hawaiian or Pacific Islander
- ○ Other

Continue to the next page

In your entire life, have you ever?

		Never	One time	2 times	3 times	4 times	5 times	6 times	7 times	8 times	9 times	10 times or more
5.	... drank alcohol?	○	○	○	○	○	○	○	○	○	○	○
6.	...smoked cigarettes?	○	○	○	○	○	○	○	○	○	○	○
7.	...smoked marijuana?	○	○	○	○	○	○	○	○	○	○	○
8.	...vaped?	○	○	○	○	○	○	○	○	○	○	○
9.	... used an illegal drug (meth, heroin, cocaine, ecstasy, etc.)?	○	○	○	○	○	○	○	○	○	○	○

What would you say if:		Definitely NO!	Probably No	Probably Yes	Definitely YES!
10.	...someone offered you alcohol to drink (beer, wine, hard liquor)?	○	○	○	○
11.	...someone offered you a cigarette?	○	○	○	○
12.	...someone offered you marijuana?	○	○	○	○
13.	...someone offered you any meth, heroin, cocaine, ecstasy, etc.	○	○	○	○

In the past week, how often have you intentionally decided to stay away from people or places where you knew people your age were:

		Never	Rarely	Sometimes	Often	Always
14.	...drinking alcohol?	○	○	○	○	○
15.	...smoking cigarettes?	○	○	○	○	○
16.	...smoking marijuana?	○	○	○	○	○

In the past week, when cigarettes, vape, alcohol, or other illegal drugs were offered to you, how often did you: (Fill in one answer for each way of responding)

		I was not offered	Never	Rarely	Sometimes	Often	Always
17.	...say "No" without giving a reason why?	○	○	○	○	○	○
18.	...decide to leave the situation without accepting the offer?	○	○	○	○	○	○
19.	...give an explanation or excuse to turn down the offer?	○	○	○	○	○	○
20.	...use some other way to not accept the offer?	○	○	○	○	○	○

How sure are you that you would say NO if:		Not at all sure	A little sure	Somewhat sure	Pretty sure	Very sure
21.	...a family member (parent, brother, sister, aunt, uncle, etc.) offered you cigarettes, alcohol, or marijuana?	○	○	○	○	○
22.	...someone you don't know very well offered you cigarettes, alcohol, or marijuana?	○	○	○	○	○
23.	...a friend you really liked offered you cigarettes, alcohol, or marijuana?	○	○	○	○	○

These next questions ask you about the past week. Please answer the following questions honestly.		Write in the number
24.	Last week, how many times did you drink alcohol (beer, wine, hard liquor)?	_____
25.	Last week, how many times have you smoked cigarettes?	_____
26.	Last week, how many times did you use marijuana ("weed", "pot" etc.)?	_____
27.	Last week, how many times did you vape?	_____
28.	Last week, how many times did you use any illegal drug (meth, heroin, cocaine, ecstasy, etc.)?	_____
29.	Last week, how many times did you use rohipnal ("blue sky")?	_____

30. In the past week, did you try to get or buy cigarettes, marijuana, vaping, alcohol, or other illegal drugs?

- ○ Yes
- ○ No

31. In the last month, have you learned about alcohol, smoking, and drug use at school?

- ○ Yes
- ○ No

You are done with your survey.

Thank you for your help.

Appendix E: Letter of Support

Dr. Trenton Hansen, Superintendent
4850 Pedley Road, Jurupa Valley, CA 92509 T (951) 360-4100

March 9, 2022

Robert LaChausse, Ph.D.
College of Health Science, Department of Public Health Science
California Baptist University
8432 Magnolia Avenue
Riverside, CA 92504

Dear Dr. LaChausse,

I have reviewed your proposed study to evaluate the Keepin It Real drug prevention supplemental curriculum in Jurupa Unified School District. I understand that you are working with our district's health teachers and have trained them in the program and provided curriculum materials as part of your CDC funded- Drug Free Communities (DFC) grant.

I believe that this study is worthwhile and want to commit out district's participation in this valuable and timely project. I am aware that you will surveying students in health courses in grades 9-12 and that you will be obtaining parent/guardian consent prior to survey administration in accordance with State of California Educational codes and federal ethics guidelines. I understand that you will make a report of findings available to me and the district at the end of the project.

Sincerely,

Dave Doubravsky
Assistant Superintendent
Education Services

LEARNING WITHOUT LIMITS

Appendix F: Keepin' it REAL Fidelity Logs

KEEPIN' IT REAL

FIDELITY LOGS

TEACHER: PERIOD:

KEEPIN' IT REAL TEACHER TRAINING //

FIDELITY LOGS

The KIR curriculum must be completed as designed to effectively reduce youth substance use. Fidelity logs must be submitted:

Fidelity logs provide valuable information including to what extent the lessons were completed and the number of students who received each lesson.

Each class period can vary by class disruptions, extended discussions, participation, etc.. Thus, it is important that you complete the log for each lesson *immediately* following each class period to recall what truly happened for that specific lesson (i.e., *morning announcements occurred and took away five minutes, or we had a longer than planned discussion about peer pressure and ran out of time to assign the homework, I assigned a worksheet instead of doing the group activity because the class was disruptive*...).

For future funding opportunities, fidelity information may be used in DFC reporting. Fidelity will be reported in group-form only; school sites and teacher information will not be reported.

Lesson observations may be requested for further fidelity purposes.

HOW TO SUBMIT FIDELITY LOGS

Fidelity logs will be collected on the post-test day following the implementation of the curriculum (TBD May 23rd - 25th).
The completion or extent to which the curriculum was implemented will in no way affect your standing with your school district, future opportunities with Healthy Jurupa Valley or with California Baptist University.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 1**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 Introduction Scenarios	Activity 2 Program Introduction	Activity 3 Real Strategies	Activity 4 Options, Choices & Consequences	Activity 5 Simple Preference and Wise Choice	Activity 6 Choices Activity	Activity 7 Conclusion	Activity 8 Homework
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 2**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 **Review**	**Activity 2** **Introductory Discussion**	**Activity 3** **The Guessing Game**	**Activity 4** **Conclusion**	**Activity 5** **Homework**
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 3**

Name:_____ Date: _____

School Site: _____ Class Period:_____ # students: _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 Review	Activity 2 Introductory Discussion	Activity 3 Conflict Stories	Activity 4 Discussion and Assertiveness	Activity 5 "I" Statements Activity	Activity 6 Conclusion	Activity 7 Homework
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 4**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 **Review**	**Activity 2** **Introductory Discussion**	**Activity 3** **Assertiveness Techniques**	**Activity 4** **Saying "No" Assertively**	**Activity 5** **Video & Discussion**	**Activity 5** **Conclusion**	**Activity 6** **Homework**
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 5**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 **Review**	**Activity 2** **Introductory Discussion**	**Activity 3** **Guidelines for Explaining**	**Activity 4** **Video & Discussion**	**Activity 5** **I Don't Like Activity**	**Activity 6** **Conclusion**	**Activity 7** **Homework**
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 6**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 Review	Activity 2 Introductory Discussion	Activity 3 Video & Discussion	Activity 4 How To Avoid	Activity 5 Avoid Scenarios Group Activity	Activity 6 Conclusion	Activity 7 Homework
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 7**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 **Review**	**Activity 2** **Introductory Discussion**	**Activity 3** **Video Preparation & Viewing**	**Activity 4** **Role Play Activity**	**Activity 5** **Conclusion**	**Activity 6** **Homework**
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 8**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 Review	**Activity 2** Introductory Discussion	**Activity 3** Norms Questionnaire	**Activity 4** Name Acrostic Activity	**Activity 5** Complete The Sentence Activity	**Activity 6** Conclusion	**Activity 7** Homework
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 9**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 **Review**	**Activity 2** **Introductory Discussion**	**Activity 3** **Activity and Discussion**	**Activity 4** **Role Play Group Activity**	**Activity 5** **Conclusion**	**Activity 6** **Homework**
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No

Note any specifics that occurred during this lesson.

KEEPIN' IT REAL FIDELITY WORKSHEET // **LESSON 10**

Name:_____ **Date:** _____

School Site: _____ **Class Period:**_____ **# students:** _____

For each activity circle the response that best describes the extent which the activity was covered and note any changes that were made.

Activity 1 **Review**	**Activity 2** **Introductory Discussion**	**Activity 3** **Eco-Map Activity**	**Activity 4** **Asking for Help**	**Activity 5** **Conclusion**	**Activity 6** **Take Home Challenge**	**Activity 7** **KIR Review**
Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely	Yes, Completely
Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes	Yes, with Changes
No	No	No	No	No	No	No

Note any specifics that occurred during this lesson.

Appendix G: Keepin' it REAL Observation Form

Keepin It Real Observation Form

Observer Name: _____	**Site: _____**
Date: _____	**Teacher: _____**
Lesson: _____	**Period: _____**
Number of Students: _____	

Directions: The purpose of the observation form is to measure the quality of implementation of the program delivery. Please use the guidelines within when completing the observation form and *do not* change the scoring provided; for example, do not circle multiple answers or score a 1.5 rather than a 1 or 2. This form should be used by program staff not directly responsible for the program's implementation but who have been trained in the program. **Please read through the items prior to the observation.**

KIR Observation Form

Instructions: The following questions assess the overall quality of the program session and delivery of the information. Use your best judgment and do not circle more than one response.

1. **In general, how clear were the program teacher's explanations of the activities?**

1	2	3	4	5
Not clear		**Somewhat clear**		**Very clear**

1. Most participants do not understand the instructions and cannot proceed; many questions asked.
3. About half of the group understands, while the other half asks questions for clarification.
5. 90-100% of the participants begins and completes the activity/discussion with no hesitation and no questions.

2. **To what extent did the teacher keep track of time during the session and activities?**

1	2	3	4	5
Not on time		**Some loss of time**		**Well on time**

1. Teacher does not have time to complete the material (particularly at the end of the session); regularly allows discussion to drag on (e.g., participants seem bored or begin discussing non-related issues in small groups).
3. Misses a few points; sometimes allows discussions to drag on.
5. Completes all content of the session; completes activities and discussions in a timely manner (using the suggested time limitations in the program manual, if available).

3. **To what extent did the presentation of materials seem rushed or hurried?**

1	2	3	4	5
Very rushed		**Somewhat rushed**		**Not rushed**

1. Teacher doesn't allow time for discussion; doesn't have time for examples; tells participants they are in a hurry; body language suggests stress or hurry.
3. Some deletion of discussion/activities; sometimes states but does not explain material
5. Does not rush participants or speech but still completes all the materials; appears relaxed.

KIR Observation Form

4. To what extent did the participants appear to understand the material?

1	2	3	4	5
Little understanding		**Some understanding**		**Good understanding**

Use your best judgment based on participant conversations and feedback.

1. Less than 25% seem to understand; 3. About half; 5. 75-100% understands

5. How exactly did the group members participate in discussions and activities?

1	2	3	4	5
Little participation		**Some participation**		**Active participation**

Use your best judgment based on participant conversations and feedback.

1. Less than 25% participation; 3. About half; 5. 75-100% participation

6. On the following scale, rate the teacher on the following qualities:

a. Knowledge of the program

1	2	3	4	5
Poor		**Average**		**Excellent**

1. Cannot answer questions, mispronounces names; reads the manual.

5. Provides information above and beyond what's in the manual; seems very familiar with the concepts and answers questions with ease.

b. Level of enthusiasm

1	2	3	4	5
Poor		**Average**		**Excellent**

1. Presents information in a dry or boring way; lacks personal connection to material; appears "burned out."

5. Makes clear that the program is a great opportunity; gets participants talking and excited; outgoing.

KIR Observation Form

c. Poise and confidence

1	2	3	4	5
Poor		**Average**		**Excellent**

1. Appears nervous or hurried; does not have good eye contact
5. Does not hesitate in addressing concerns. Well organized, not nervous.

d. Rapport and communication with participants

1	2	3	4	5
Poor		**Average**		**Excellent**

1. Doesn't remember names; does not "connect' with participants; acts distant or unfriendly.
5. Gets participants talking and excited; very friendly; uses people's names when appropriate; seems to understand the community and its needs.

e. Effectively addressed questions and concerns

1	2	3	4	5
Poor		**Average**		**Excellent**

1. Engages in "power struggles"; responds negatively to comments; gives inaccurate information; doesn't direct participants elsewhere for further info.
5. Answers questions of fact with information, questions of value with validation; if doesn't know answer, is honest about it and directs them elsewhere.

KIR Observation Form

7. Rate the overall quality of the program session:

1	2	3	4	5
Poor		**Average**		**Excellent**

Summary measure of all the preceding questions. Asses both the extent of material covered and the performance of the teacher.

Excellent session looks like:

- Participants are doing rather than talking about activities
- Non-judgmental responses to questions
- Answering questions of fact with information, questions of value with validation
- Good time management and well-organized
- Completed the lesson
- Adequate pacing- not too fast and did not drag
- Using effective checks for understanding

Poor session looks like;

- Lecture-style of presenting the content
- Reading the content from the notebook
- Stumbling along with the content and failing to make connections to what has been discussed previously or what participants are contributing
- Uninvolved participants
- Getting into power struggles with participants about the content
- Judgmental response
- Flat affect and boring style
- Unorganized and random
- Loses track of time

Appendix H: Sample Lesson of the Keepin' it REAL Drug Prevention Program

Lesson 5: Explain

kiR
refuse · explain · avoid · leave

OBJECTIVES

- Explain the reasons for their actions in a way that everyone understands

preparation

- Read through the lesson
- Familiarize yourself with the resistance strategy **Explain**
- Think through the following student activities:
  - ***EXPLAIN*** *video discussion (view video for points of classroom discussion)*
  - *I DON'T LIKE. . .*

MATERIALS

- EXPLAIN video
- GUIDELINES FOR EXPLAINING Presentation Pages/ PowerPoint
- Student copies of the I DON'T LIKE... worksheet
- Student copies of the MY EXPLANATION homework sheet

LESSON STRUCTURE

Activity 1 Review	5 minutes
Activity 2 Introductory Discussion	5 minutes
Activity 3 Guidelines for Explaining	3 minutes
Activity 4 Video and Discussion	15 minutes
Activity 5 I Don't Like Activity	8 minutes
Activity 6 Conclusion	2 minutes
Activity 7 Homework	2 minutes

key terms

CONFIDENT:
The state of being sure about oneself.

CONFRONT:
To meet face to face; to challenge or oppose.

EXPLAIN:
To give a reason or reasons for something. "Explain" is one of the four primary drug resistance strategies of the kiR curriculum represented by the letter "E" in the acronym "REAL".

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Lesson 5: Explain

refuse · explain · avoid · leave

ACTIVITY 1 (5 minutes)

REVIEW

1. Review the homework from last week. Call on a few students to share examples of the refusals they heard people say.
2. Collect homework assignments.
3. Make the connection between last week's lesson and what students will be learning in this lesson by letting them know that today they will learn the second resistance strategy, **Explain**.
4. Briefly review that they learned to **Refuse** and be assertive in last week's lesson.

ACTIVITY 2 (5 minutes)

INTRODUCTORY DISCUSSION

1. Introduce the skill objectives of today's lesson. Introduce the idea that giving an explanation for why we do not want to do something is sometimes the best way to get away from situations or things we don't want to be involved in.
2. Ask students what some of the advantages are of giving an explanation. Some advantages are:

- The reasons we give can convince someone as to why a certain choice is not right for us.
- Giving a reason shows we have thought about our decisions carefully.

ACTIVITY 3 (3 minutes)

GUIDELINES FOR EXPLAINING

1. Explain that in order for students to be able to give a good explanation they need to know how to do it.
2. Display the GUIDELINES FOR EXPLAINING Presentation Pages/PowerPoint slide. Point out that using the guidelines can help students be direct so that everyone can be clear about their position.
3. Ask students, "Why is it important to be clear and make sure people understand your reasons for your actions?" Facilitate answers.
4. Go through each guideline using the following examples:

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Say what you don't like.
For example: "I don't like to be around cigarette smoke." Tell students it's important to be confident and clear about our position. Tell students that we can use what we learned in Lessons 3 and 4 about assertiveness to do this: being direct, looking the person in the eye, speaking up for ourselves.

Show or say how it affects you (how does it make you feel?)
For example: "I don't like being around cigarette smoke because it makes me cough and makes my clothes smell bad." Tell students that with this step we indicate WHY we don't like something or don't want to do something.

Say what you want to do or plan to do about it.
For example: "If you want to smoke, I'm going to have to go into the next room". The actions we actually take will make people we are explaining to know that we are serious about how we feel.

5. Bring in the concept of **confrontation**- sometimes to be clear about our position we will have to confront someone about why we think something they are doing and something they want to involve us in is wrong. For example, if your friend wants to involve you in shoplifting, taking drugs, or other behaviors that can have great consequences, you may have to be very direct in your explaining approach.

6. Direct students to watch for examples of the GUIDELINES FOR EXPLAINING in the video.

ACTIVITY 4 (15 minutes)

VIDEO AND DISCUSSION

1. Tell the students now we want to see how some kids say no. Ask students to pay attention to the explanations people give for not doing drugs, including alcohol and cigarettes. Encourage them to think about how they would handle these situations.

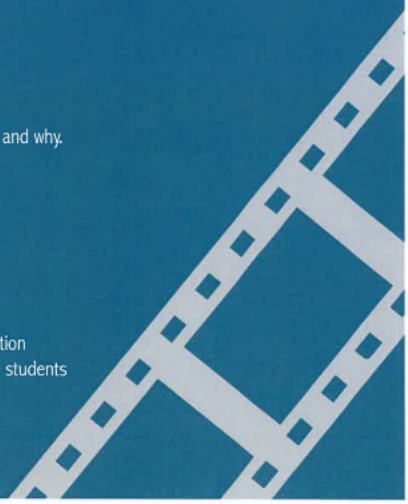
2. Play the **EXPLAIN** video.

3. At the end of the video, ask students to discuss which explanations they felt were most convincing, least convincing, and why.

4. Some other points to discuss are:

- Were the explanations assertive or passive?
- Did the reasons make sense?
- How would you explain why you don't want to do drugs?

5. Ask students to look at the Guidelines for Explaining Presentation Pages/PowerPoint slide to see if there were any examples the students used in the video.



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Lesson 5: Explain

refuse · explain · avoid · leave

ACTIVITY 5 (8 minutes)

I DON'T LIKE ACTIVITY

1. Tell students that the next exercise will give them practice ex plaining themselves- it will allow them to practice giving reasons for why they do not like something.

2. Distribute the I DON'T LIKE. . . worksheet. Go through the direc tions with students.

3. Direct students to complete the worksheet individually. When they are finished, direct each to explain why they do not like each particular thing to their partner.

ACTIVITY 6 (2 minutes)

CONCLUSION

1. Ask students to share some of the ideas that they learned in this lesson. Or, ask students to share some of their responses from the previous activity and their reasons why they do not like something.

2. Facilitate a brief class discussion regarding how it felt for stu dents to have to explain their positions.

3. Thank students for their participation

ACTIVITY 7 (2 minutes)

HOMEWORK

1. Pass out the MY EXPLANATION homework sheets.

2. Read over the directions with the students.

3. Provide examples to students if needed.

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