

School-Based Harm Reduction with Adolescents: A Mixed Methods Pilot Study

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**School-Based Harm Reduction with Adolescents:
A Mixed Methods Pilot Study**

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Abstract

A pilot study of the Safety First: Real Drug Education for Teens curriculum showed significant results pre to post with high school freshmen. Negative outcomes of drug education are linked to failure to engage students because of developmentally inappropriate material or activities are too unrelated to young people to be meaningful. A few harm reduction studies showed significant increase in student's drug related knowledge. Students were less likely to consume substances and less likely to consume to harmful levels. More studies are necessary to evidence harm reduction efficacy in the classroom. The goal of this study was to measure harm reduction knowledge, attitude and behaviors, including drug policy advocacy, before and after Safety First. Data was analyzed using AVOVA, linear regression, t-tests and thematic coding. Survey results, corroborated by the qualitative findings, showed a significant change ($p < .05$) in high school freshmen knowledge, attitudes and behaviors in relationship to substance use pre to post class. These findings have implications for replication of the curriculum to other sites. Institutional Review Board approval was granted before the study was conducted with human subjects. The file number is 2017-0746. The date of initial registration was June 29th, 2017, and continued approval has been granted through August 8th, 2022.

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Research showed that common reasons drug education programs for youth fail are directly linked to lack of student interest, because they were not developmentally appropriate, or because activities did not relate to the actual lives of the students^{1 2}. A review of school based drug education studies³ showed that for drug education programs to be effective they should be based on the real experiences of young people, a harm reduction principle^{4 5}. The study of Drug Policy Alliance's (DPA) Safety First: Real Drug Education for Teens drug education curriculum for health education classes is grounded in harm reduction theory. The objective of the curriculum is to teach substance use harm reduction to support positive outcomes for young people.

Background

Harm Reduction Theory

A harm reduction approach is congruent with what is known about adolescent development and decision-making. Adolescence is a time of experimentation and risk-taking that has potentially negative outcomes. Unfortunately, the most prevalent drug education for teens is abstinence based, attaching stigma and moral judgment to substance use and users, instead of learning the effects and how to make informed, healthy decisions about use^{6 7}.

Harm reduction theory includes pragmatic strategies aimed at reducing dangers related to substance use. The theory emerged with the discovery of AIDS in 1981. The theory was important for reducing transmission of blood-borne infections and for addressing drug use. Evidence shows that harm reduction approaches greatly reduce morbidity and mortality associated with risky substance use behaviors^{8 9}.

Harm reduction is an ecological systems approach, addressing drug use from the micro level, individuals, families and communities to the macro level, local, state, and federal policies

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and norms^{10 11 12 13 14}. The theory promotes social justice with an emphasis on users' rights, health, social and economic development, as opposed to the demonization of drug consumption¹⁵. Critical to the practice of harm reduction is recognizing that realities of poverty, class, racism, social isolation, past trauma, sex and gender based discrimination and other social inequalities affect people's capacity to address drug-related harm.

Harm reduction interventions vary according to dynamic needs of individuals and communities. The basis is to meet substance users "where they're at," incorporating a spectrum of strategies from abstinence, to managing use, addressing conditions of use along with use itself. The theory adopts tenets of the trans theoretical stages of change model^{16 17} and motivational counseling¹⁸. These non-judgmental, amoral approaches encourage people to embark on incremental, harm-reducing goals.

School based harm reduction programs have rarely received the attention of researchers. Limited studies exist about harm reduction drug education with adolescents in the US¹⁹. Only a few studies, from Canada, Australia and the UK showed positive results^{20 21 22 23}. Classroom based harm reduction approaches are limited but are gaining traction in school settings because of the mixed or ineffective results from prevention and abstinence-based programs that fail to meet the real needs of youth^{24 25}. The small pool of studies showed increase in drug related knowledge. Students were less likely to consume substances and were less likely to consume to harmful levels with themselves and peers^{26 27 28 29 30}. Harm reduction can potentially address the shortfalls of prevention programs but remains contentious in the context of youth substance use, thus has not been widely studied within this population³¹.

. The overall goal of the study was to measure harm reduction knowledge and strategies before and after Safety First. DPA focused on diverse urban public schools for the pilot in New

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York City and San Francisco. Harm reduction principles require a non-judgmental, motivational, culturally relevant, actively engaging environment that puts student experience at the center of the curriculum³². Safety First teaches students about different types of drugs including the short and long-term effects. Students learn how to identify viable research about drugs and discuss and present their findings in the classroom. Drug beliefs are discussed, myths are dispelled, and facts are validated. Behaviors associated with substance use are studied and discussed to inform student's future decision making.

Outcomes showed significant change from pre to post Safety First ($p < .05$) in knowledge and behaviors related to substance use. The results corroborated the findings from the few other similar studies^{33 34 35 36 37}. This study evidenced need for further implementation of harm reduction based substance use curriculum as part of health education in high schools and for more research to measure the effects of the curriculum with various populations and locales.

Methods

Hypothesis

The hypotheses of this study were Safety First: Real Drug Education for Teens curriculum will cause students to meet the following objectives: 1) Acquire critical thinking skills to access and evaluate information about alcohol and other drugs; 2) Understand decision-making and goal setting skills that help students make healthy choices related to substance use; 3) Develop personal and social strategies to manage the risks, benefits and harms of alcohol and other drug use; 4) Know the impact of drug policies on personal and community health; and 5) Learn to advocate for health oriented drug policies. Thus student knowledge and behavior related to substance use and harm reduction were measured before and after Safety First as part of required health education classes.

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Data Collection

These hypotheses were tested through collection of data from validated pre/post quantitative surveys (see Appendix A) with items that measured substance use and harm reduction knowledge and behaviors^{38 39 40 41}; pre/post qualitative focus groups and one on one interviews with semi-structured field-tested guides; and field observation, on a weekly basis in each classes with a field tested template. The 14-session (55 minutes/class) curriculum was implemented and studied in four freshmen health education classes at a public school in New York City and five public schools, four classes each, in San Francisco, CA. Researchers committed to different class periods and conducted field observation on different class days weekly to ensure inter-rater reliability⁴².

Sample Demographics (Tables 1a-d)

Total number of freshmen surveyed was 701. Prior to Safety First the majority of students had not received any drug education (96%) (Table 1). Students were 14 (62%) and 15 years old (31%). Outliers included 13, 16, 17, 18 & 19 years old (7%) (Tables 1a). Students were males (54%), and female (45.6%). In NYC two identified as “Other” and one as gender non-conforming (0.4%) (Tables 1b). The largest total ethnic/racial group was Asian (43%), then Latinx (22%), mixed race (12%), white (12%), black (9%), Middle Eastern (1.8%) and Native American (.02%). In NYC white students were the largest total group, however youth of color made up the majority of the student population (Tables 1c). In San Francisco Asian students were the majority student population, then Latinx. Black and white students were next with the same representation (Tables 1c). Most NYC students resided in Brooklyn and Manhattan while other students were closely split between Queens and the Bronx. Most San Francisco students lived in Visitacion Valley and Excelsior district. Central Richmond, Outer Sunset and the

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Mission district tied for second (Tables 1e). A small number of students in both cities reported arrest or police contact or suspension (Tables 1f). Youth reported substance use as a reason for police involvement.

Sample Comparability

The total sample included three higher achieving schools and three lower achieving schools. The NYC school was unique because students apply and interview to be accepted. Pupils are high achieving coming in, average grades were “A’s” and “B’s (Tables 1f).” All students planned to attend college and graduate school (Tables 1g). Two out of the five San Francisco public schools were somewhat similar to the NYC site in grades and graduation rates, but neither is admission based. The remaining three had students with lower grade point averages and more of a range when asked about future plans. All are public schools in politically progressive US coastal cities. All are ethnically diverse, and to an extent reflective of their city’s populations. All consist of students from diverse economic backgrounds. Thus this body of research from a sample of 701 students in NYC and San Francisco can possibly be extrapolated to students in similar locales.

Data Analysis

Paired t-tests were run to measure change pre to post attributable to Safety First (Tables 2). One-way ANOVA tests were conducted to determine if there was an effect by demographics on substance use knowledge and behavior survey responses (Tables 2a). Linear regression was employed to determine if race or gender were predictive of answers. Qualitative responses were aggregated using Atlas.ti. Some responses were recoded into quant data. Thematic coding was conducted to analyze and identify the most prevalent written responses (Tables 2b). Outcomes

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showed that students learned critical thinking, decision-making and harm reduction strategies. Items that did not show significant results, or were null, also inform the future of Safety First.

Results

All students showed significant change in knowledge about harm reduction, abstinence, how to detect an opioid overdose, school specific drug policy, and how to advocate for harm reduction based drug policy after Safety First ($p = .001$) (Table 2-2e). Students were significantly more involved with advocacy activities after Safety First than before (Table 2). It is likely that learning about activism and advocacy as part of the curriculum contributed to this increase in advocacy activities. More youth advocated for less punitive drug policies. Students pointed to creating systems of support, reducing stigma, and lessening punishments. Some mentioned passing along what they learned to fellow classmates, family members, and school administrators to help them improve decision-making about drugs and create fairer drug policies.

ANOVAs revealed that the most significant effect on student response was from the school they attended (see Appendices B-D). Specific schools post Safety First showed more understanding of drug policies, how to advocate for harm reduction based initiatives, and how to respond to an opioid overdose. However, there was significant change across all student comprehension despite differences in how the curriculum was taught ($p = .001$) (Tables 2-2e).

Likert Scale Pre to Post

Paired t-tests were conducted to determine if there was a significant difference between students' scores on 20 Likert Scale items after the drug education course. The scale was one strongly agree and five strongly disagree. Seventeen were significant from pre to post Safety First ($p = .001$) (see Appendix C). Two of the three items that had no statistical significance, "People do not become dependent upon marijuana," and "If you overdose on a drug you will

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die,” still showed a shift towards disagree, the harm reduction response, through means comparison. The item “It is better not to drink water while using MDMA (“molly”)” did not show a significant change. The students agreed more with this statement after Safety First. The harm reduction answer was strongly disagree. More students also agreed that “Alcohol helps you deal with uncomfortable feelings” which showed a significant change from pre to post ($p = .037$), producing a null hypothesis. This outcome provides valuable feedback to the Safety First developers. They need to review how Safety First addresses harm reduction related to MDMA and alcohol.

Gender and race.

For San Francisco, an Independent Sample t-test showed “Gender” mattered on two items. More males strongly disagreed that “Marijuana is safe because it is all natural,” than females ($p = .001$). More females moved to strongly agreeing that “You can die from drinking too much alcohol at one time” after Safety First than males ($p = .001$). An independent t-test was administered to measure if gender had an impact on students’ scores on the Likert Scale items. There was a significant difference between males and females on two items in NYC (see Appendix C). Females were less likely to agree than males that, “People do not become dependent on marijuana,” ($p < .05$). Females were also less likely than males to agree that zero tolerance drug policies make schools safer ($p < .05$). A linear regression, demonstrated that race and gender ($p > .05$) were not predictive of significantly different test scores in either city. In San Francisco more males strongly disagreed than females about the item “Marijuana is safe because it is all natural” ($p = .001$). On the item “You can die from drinking too much alcohol at one time” females more strongly agreed than males ($p = .001$).

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An ANOVA test showed that race and religion had an effect on responses. Asian students were more likely to move towards disagreeing with the statement “Marijuana is safe because it is all natural” which was the harm reduction response, in comparison to Latinx and Black students ($p = .001$). Muslim students were more likely to move towards disagreeing with the statement “People do not become dependent upon marijuana,” in comparison to Jewish students ($p = .020$). ANOVA tests showed school site had the most effect on student responses to the Likert Scale items from pre to post (see Appendix C).

Pre to Post: Substance Use Behaviors

On the pre/post survey there were questions with options about amount and likelihood of substance use: 1) to understand prevalence of substance use amongst the population; and 2) to see if learning about harm reduction influenced students’ behaviors/decision making. The majority of students did not report smoking or vaping tobacco but the few students that did, smoked a significant amount, this did not change from pre to post (See Appendix D). For marijuana, students reported decreased use from pre to post ($p = .001$) (See Appendix D). Marijuana use with a date showed significant change from “I would probably not use” to almost completely “I would definitely not use marijuana” ($p = .001$). There was a decrease in alcohol use from pre to post ($p = .001$). There was also an overall decrease in students reporting prescription drug use ($p = .001$) (See Appendix D).

Students made significant change in their ability to describe specific harm reduction strategies ($p = .001$) in response to “What would you do to make substance use safer?” Average youth response moved from “2” just “Reduce harm” ($\mu = 2.25$) to “1” “Realize and plan for set/setting and limits around goal setting related to substance use,” or “Contents, dose, dosage” including reduction of use ($\mu = 1.60$).

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ANOVA tests were administered to see if the demographic factors had an effect on the substance use behavior outcomes from pre to post Safety First. A one-way ANOVA yielded that Asian students were more likely to move towards “I would definitely not take/smoke weed with family” than black students ($p = .002$). An independent sample t-test evidenced that young men were more likely than young women to use prescription drugs with friends ($p = .020$). Results evidence that students learned about harm reduction strategies. Prevalence of substance use amongst the population became clearer; harm reduction influenced students’ substance use behaviors/decision making from pre to post especially in relationship to marijuana and prescription drugs (See Appendix D).

Thematic qualitative coding was used to identify the most prevalent responses in the qualitative data. The findings enhanced and supported the quant data (see Appendix B). Student evaluation informed that teaching modalities could be more interactive to improve the classroom experience, but overall reflected that Safety First taught an effective harm reduction approach to substance use (see Appendix B).

Discussion

The purpose of this pilot study was to determine if DPA’s newly rolled out Safety First: Real Drug education for Teens increased harm reduction knowledge and behavior for high school freshmen. The findings from the pre and post survey, corroborated by the qualitative data, showed a significant increase in the student’s harm reduction knowledge about drug contents and effects, drug research, positive behaviors related to substance use, and drug policies. The results demonstrated that the curriculum did influence student substance use knowledge and behavior.

Substance Use Behavior Evidences Need for Harm Reduction

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A larger percentage of students believed that their classmates were using after Safety First than before. This change showed that the class made the students more aware of classmate substance use. This prevalence reflects national numbers for this age group⁴³. In 2016 SAMSHA's comprehensive report on drug abuse and health showed that 7.3 million youth between 12 and 20 reported alcohol use. About 1 in 5 drank alcohol in the past month. An estimated 855,000 adolescents aged 12 to 17 smoked cigarettes in the past month⁴⁴. An approximated 24.0 million 12 or older in 2016 were current users of marijuana and approximately 1.6 million adolescents used marijuana in the past month. The national study speaks to the prevalence of drug use by 14 and 15 year olds shown in the study⁴⁵. Student receptivity to harm reduction strategies, substantiated through the overall reduction in student use, validates the potential relevance of this approach with high school students, starting with freshmen.

Neighborhood, Class and Race

Interviews exposed a difference between student perceptions about substances based on neighborhood, class and race. Students that lived in a lower income predominantly black and brown neighborhood consistently believed that one should not do drugs because of the consequences students observed in the community. When asked, "What happens in your community when someone is under the influence of drugs or is found with drugs on them?" A 14-year-old African American young woman from Brownsville Brooklyn responded in the pre and post interview, "Arrest. People get shot. People go to the hospital. People go to jail."

When asked the same question a white female student that lived in the Upper Westside of Manhattan stated,

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...in my neighborhood it's pretty — I mean I have to admit that I live in a pretty fortunately privileged neighborhood. And so the use of drugs actually wouldn't be that bad. Because it's not like there's the strongest police force patrolling my neighborhood, which is a huge part of it, like a part that I have to admit. ...there's such a low risk for me to be put in a position where I'm...criminalized. So I don't have to worry walking down the street if I have weed with me or something.

When asked, “Are different groups of people treated differently if they have or are using drugs? If so, how?” the same African American young woman explained the neighborhood, class and race differences:

If you seem like a person from a rich up town neighborhood or a rich family using them [drugs], you would immediately think that they got them from somebody else. And then you will look to someone from a poor community who has them [drugs], which is a stereotype that I really hate. So I think that most of the times if someone from a rich family gets caught with drugs, they're not gonna get nothing more than a warning. And if someone from a poor community or like an African race or the Hispanic race gets caught, they are going to jail.

The white young woman's pre response to the same question was,

Well at my middle school there was a situation where a guy [mixed race black and white] bought weed for his friend, a girl [white]. And then she was like high in school with that weed. And she didn't even get into as much trouble as the kid who bought it. Like everyone in the school was pointing out, he's biracial, so he's black. He had a two-week out of school suspension for buying her the weed off campus and she had nothing.

Her post response to the question was,

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Yeah, for sure. Low income groups, like African American communities, people of color in general, are so much quicker to be criminalized and prosecuted for having drugs, like especially marijuana... I know that there's a really disproportionate incarceration rate for men of color caught with something like marijuana.

Issues expressed about the unequal treatment of people using or selling substances because of race, gender, class and neighborhood reflected class lessons from Safety First about inequality in drug policy implementation indicating that Safety First made a difference on the mindset of the students.

Study Limitations with Recommendations

Sustainability

Although there have been no longitudinal studies of a high school substance use harm reduction curriculum, research of drug prevention programs over time showed that positive effects last throughout high school but taper off after⁴⁶. Most schools on require one semester of health. This pilot study showed that in 14 classes students learned advocacy skills to promote creative harm reduction oriented policies. Drug policy organizations could start advocacy groups on high school campuses so students can sustain the messages.

The Teaching Effect

The school students attended had the most effect on knowledge and behavior change. Student evaluation varied depending on their teacher. How the curriculum was taught was the most critical variable. Teachers need training and coaching about how to implement Safety First. Technical assistance must be available from the purveyor to ensure fidelity.

Transportability

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Results from public schools in two urban coastal cities were significant. This study was able to test student response across literacy, class and achievement levels. The study population, that exceeds 100⁴⁷, were an integrated, multicultural cohort of 14 and 15 year olds in urban areas, but as discrete groups- Asian (296), Latinx (141), male (381) and female (311) youth. Thus, in order to expand the transportability of the results it is integral to see how Safety First works in suburban, rural or small town white locales; or African American youth in smaller towns or large cities⁴⁸. Youth in “last chance” schools or elite private schools should also be targeted. Future research should serve youth outside the purview of this study.

The Safety First: Real Drug Education for Teens curriculum had significant effect on teens from six public high schools. Outcomes inform future research. Studies with similar and different populations of youth would test the generalizability of initial results. Knowledge increase about how to detect and respond to an opioid overdose is particularly relevant because of national prevalence⁴⁹. Student interviews about unequal treatment of people using or selling drugs based on race, class, gender and neighborhood illustrated the importance of understanding the intersection between drug policy, race and class.

Conclusion

The results of the Safety First study demonstrated hopeful outcomes for harm reduction with teens. Student quotes reflected prevalent responses to the curriculum: “I liked that it wasn’t very judgmental and understood that the chance of kids trying drugs is likely. I also liked the harm reduction strategies,” “I liked how the curriculum went in depth about the side effects of drugs and taught us how to research and find correct information about a drug. It was well organized and I got so much out of it,” and “It did not look down on people who used! Stated facts and was looking out for our well beings; no biased opinions.” This data illustrated that

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youth appreciated and learned about harm reduction. There is a dearth of studies about harm reduction in the classroom^{50 51 52}. These pilot findings were seed for future research to support harm reduction education for youth.

Declarations

Ethics approval and consent to participate

Institutional Review Board through the Graduate Center City University of New York approval was granted before the study was conducted with human subjects. The reference number is 2017-0746. The date of initial registration was June 29th, 2017, and continued approval has been granted through August 8th, 2022.

Consent for publication

All data collection tools were anonymous. No identifying information was collected. Parental Consent and Adolescent Assent forms were signed by students and parents allowing their adolescent children to participate in the study. Teachers also signed consent forms.

Availability of data and materials

Data is included in the Tables and Appendices below.

Competing interests

This author declares no competing interests.

Funding

The Drug Police Alliance awarded funding for this study through the Research Foundation of the City University of New York.

Authors' contributions

This author developed the data collection tools, analyzed the data and wrote up the findings.

Acknowledgements

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Not Applicable

Authors' information

Dr. Nina Rose Fischer is an Assistant Professor at City University of New York John Jay College of Criminal Justice in Interdisciplinary Studies where she develops courses about social justice and institutionalized oppression. She is the codirector of the prestigious Vera Fellows Program for social justice. She also taught undergraduates at Hunter in Sociology, and graduates at Hunter School of Social Work in Multicultural Social Work and Human Behavior in the Social Environment. She has 25 years experience in harm reduction and youth justice as an organizer, therapist, administrator, policy analyst and researcher. She is currently Principal Investigator on three original research projects 1) youth and police relations; 2) substance use harm reduction; and 3) arrest diversion. She published an article: Interdependent fates: Youth and police—Can they make peace? *Peace and Conflict: Journal of Peace Psychology*: <https://doi.org/10.1037/pac0000466> and a book called [The Case for Youth Police Initiative: Interdependent Fates and the Power of Peace](#), an ethnographic exploration of young people and police relations; as well as recommendations for how law enforcement can benefit from social welfare infrastructure. She is working on creative avenues to disseminate her findings including a docuseries about young people and police in hostile environments envisioning what safety really means. Critical race, class and gender analyses are central to her work as an activist scholar.

Tables and Appendices

Table 1 Demographics

No Prior Drug Education Frequencies (F) and Percentages (%)

<u>City</u>	Frequency	Percent	Total
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New York	77	95.1	83
San Francisco	589	89%	618

Totals (*N* = 701)

Total	701
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Tables 1a

Age Frequencies (F) and Percentages (%) New York City

<u>Age</u>	Frequency	Percent
14	33	40.2
15	48	58.5
16	1	.1
18	1	.1

Totals (*n* = 83)

Total	83
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Age Frequencies (F) and Percentages (%) San Francisco

<u>Age</u>	Frequency	Percent	Cumulative Percent
13	6	1.0	1.0
14	425	68.8	69.7
15	171	27.7	97.4
16	6	1.0	98.4
17	8	1.3	99.7
18	1	.2	99.8
19	1	.2	100.0

Totals (*n* = 618)

Total	618
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Tables 1b

Gender Frequencies (F) and Percentages (%) New York City

<u>Gender</u>	Frequency	Percent
Male	34	42
Female	44	54.3
Non-Binary	5	3.7

Totals (*n* = 83)

Total	83
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Gender Frequencies (F) and Percentages (%) San Francisco

<u>Gender</u>	Frequency	Percent	Cumulative Percent
Male	347	56.5	56.5
Female	267	43.5	100.0
Trans/Other	0	0	0

Totals (*n* = 614)

Missing	System 4
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Total 618

Tables 1c

Race/Ethnicity Frequencies (F) and Percentages (%) New York City

Race/Ethnicity	Frequency	Percent
1-Black	7	9
2-Latinx	16	19
3-Asian	16	19
4-White	36	43
5-Other (includes mixed race Black/Asian, White/Latinx. South Asian & Middle Eastern)	8	10
Totals (n = 83)		
Total	83	

Race/Ethnicity Frequencies (F) and Percentages (%) San Francisco

Race/Ethnicity	Frequency	Percent	Cumulative Percent
1-Black	52	8.7	8.7
2-Latinx	125	20.9	29.5
3-Native	2	.3	29.9
4-Asian	280	46.7	76.6
5-Middle Eastern	12	2.0	78.6
6-White	51	8.5	87.1
7-Other/Mixed (black/Asian, white/Asian, black/white, black/Latin)	77	12.9	100.0
Totals (n = 599)			
Missing	System	19	
Total	618		

Table 1d

Sexuality Frequencies Sexuality San Francisco (F) and Percentages (%)

Sexuality	Frequency	Percent	Cumulative Percent
1-Straight	523	84.6	84.6
2-Gay	1	.2	84.8
3-Bisexualy	38	6.1	90.9
4-Undecided	52	8.4	99.4
5-Lesbian	4	.6	100
Totals (n = 618)			
Total	618		

Tables 1e

Where Youth Live (F) and Percentages (%) New York City

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Locale	Frequency	Percent
Brooklyn	31	37.8
Manhattan	25	30.5
Bronx	12	14.6
Queens	13	15.9
<u>Totals (n = 81)</u>		
Missing	System 2	
Total	83	

Where Youth Live (F) and Percentages (%) San Francisco

Locale	Frequency	Percent
Visitacion Valley	152	25
Excelsior	143	23
Richmond, Fillmore, & Laurel Hts.	141	23
Central Richmond & Outer Sunset	96	15
Mission	86	14
<u>Totals (n = 618)</u>		
Total	618	

Tables 1f

Police Contact and Suspension Frequencies (F) and Percentages (%) New York City

	Frequency	Percent
Arrests or Stops	9	11
Suspension	4	4.9
<u>Totals (n = 18)</u>		
Total	83	

Police Contact and Suspension Frequencies (F) and Percentages (%) San Francisco

	Frequency	Percent
Arrests or Stops	37	6
Suspension	13	2
<u>Totals (n = 50)</u>		
Total	618	

Tables 1f

Grade Frequencies (F) and Percentages (%) New York

Grade	Frequency	Percent
1-A's	55	66
2-B's	28	34

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Totals (*n* = 83)

Total 618

Grade Frequencies (F) and Percentages (%) San Francisco

Grade	Frequency	Percent
1-A's	313	50.6
2-B's	167	27.0
3-C's	96	15.5
4-D's	22	3.6
5-F's	20	3.2

Totals (*n* = 618)

Total 618

Tables 1g

Future Plans Frequencies (F) and Percentages (%) New York

Future Plans	Frequency	Percent
1-College	83	100
2-Graduate School	83	100

Totals (*n* = 83)

Total 618

Future Plans Frequencies (F) and Percentages (%) San Francisco

Future Plans	Frequency	Percent
1-College	381	61.8
2-Graduate School	137	22.2
3-Just finish high school	79	12.8
4-May not finish high school	13	2.1
5-Vocational school	7	1.1

Totals (*n* = 617)

Missing System 1

Total 618

Table 1h

Religion Frequencies (F) and Percentages (%) San Francisco

Religion	Frequency	Percent	Cumulative Percent
1-Muslim	14	2.5	2.5
2-Christian	204	36.0	38.4
3-Buddhist	47	8.3	46.7
4-Jewish	13	2.3	49.0
5-Other/Agnostic/Atheist	289	51.0	100.0

I Don't Know

Totals (*n* = 567)

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Missing System 52
Total 618

Table 2 a-t Substance Use Frequencies and Percentages Pre and Post

Table 2a

*Pre to Post Safety First How often are you with Youth Smoking Cigarettes San Francisco
Frequencies (F) and Percentages (%)*

How Often?	Pre F	Pre %	Post F	Post %
1-Daily	29	4.7	29	4.7
2-Weekly	27	4.4	28	4.5
3-Monthly	38	6.2	37	6.0
4-Never	518	84.6	524	84.8
Totals (n = 612)				
Missing	System 6			
Total	618			

Table 2b

*Pre to Post Safety First How often are you with Youth that Vape Tobacco San
Francisco Frequencies (F) and Percentages (%)*

How Often?	Pre F	Pre %	Post F	Post %
1-Daily	70	11.4	67	10.8
2-Weekly	64	10.5	68	11.0
3-Monthly	47	7.7	45	7.3
4-Never	421	70.4	439	70.9
Totals (n = 612)				
Missing	System 6			
Total	618			

Table 2c

*Pre to Post Safety First How often do you Vape Tobacco Frequencies (F) and Percentages (%)
San Francisco*

How Often?	Pre F	Pre %	Post F	Post %
1-Daily	11	1.8	9	1.5
2-Weekly	8	1.3	11	1.8
3-Monthly	12	2.0	7	1.1
4-Never	581	94.9	589	95.6
Totals (n = 612)				
Missing	System 6			
Total	618			

Table 2d

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

Pre to Post Safety First How often do you Smoke Tobacco Frequencies (F) and Percentages (%) San Francisco

How Often?	Pre F	Pre %	Post F	Post %
1-Daily	6	1	10	1.6
2-Weekly	0	0	0	0
3-Monthly	0	0	0	0
4-Never	612	99	627	98.4
Totals (n = 612)				
Missing	System 6			
Total	618			

Table 2e

Pre to Post Safety First How often are you with Youth Drinking Alcohol San Francisco Frequencies(F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	30	4.9	35	5.7
2-Probably use	47	7.7	57	9.2
3-Probably not use	68	11.1	79	12.8
4-Definitely not use	468	76.3	446	72.3
Totals (n = 613)				
Missing	System 5			
Total	618			

Table 2f

Pre to Post Safety First How often are you Drinking Alcohol San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	13	2.1	2	.3
2-Probably use	28	4.5	7	1.1
3-Probably not use	15	2.4	61	9.7
4-Definitely not use	560	90.9	558	88.9
Totals (n = 617)				
Missing	System 1			
Total	618			

Table 2g

Pre to Post Safety First How often are you with Youth using Marijuana San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	88	14.4	115	18.7
2-Probably use	54	8.9	62	10.1
3-Probably not use	61	10.0	48	7.8
4-Definitely not use	406	66.7	391	63.5

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

Totals (*n* = 616)

Missing	System 2
Total	618

Table 2h

Pre to Post Safety First How often are you using Marijuana San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	10	1.6	19	3.0
2-Probably use	24	3.9	20	3.2
3-Probably not use	29	4.7	35	5.5
4-Definitely not use	550	89.7	558	88.3

Totals (*n* = 616)

Missing	System 2
Total	618

Table 2i

Pre to Post Safety First Marijuana Use with Best Friend San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	39	6.4	44	7.1
2-Probably use	75	12.4	92	14.9
3-Probably not use	112	18.5	127	20.6
4-Definitely not use	379	62.6	354	57.4

Totals (*n* = 605)

Missing	System 13
Total	618

Table 2j

Pre to Post Safety First Marijuana Use with Date San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	32	5.3	36	5.9
2-Probably use	63	10.4	72	11.7
3-Probably not use	118	19.5	137	22.3
4-Definitely not use	391	64.7	370	60.2

Totals (*n* = 604)

Missing	System 14
Total	618

Table 2k

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

Pre to Post Safety First Marijuana Use with Family San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	37	6.1	44	7.2
2-Probably use	61	10.1	60	9.8
3-Probably not use	110	18.2	136	22.1
4-Definitely not use	395	65.5	374	60.9
Totals (n = 603)				
Missing	System 15			
Total	618			

Table 2l

Pre to Post Safety First Marijuana Use at a Party San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	37	6.2	41	6.7
2-Probably use	71	11.8	85	13.8
3-Probably not use	99	16.5	124	20.2
4-Definitely not use	394	65.6	365	59.3
Totals (n = 601)				
Missing	System 17			
Total	618			

Table 2m

Pre to Post Safety First Alcohol Use with Best Friend San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	34	5.6	36	5.9
2-Probably use	80	13.2	82	13.4
3-Probably not use	115	19.0	135	22.0
4-Definitely not use	375	62.1	361	58.8
Totals (n = 604)				
Missing	System 14			
Total	618			

Table 2n

Pre to Post Safety First Alcohol Use with Date San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	20	3.3	30	4.9
2-Probably use	77	12.8	87	14.2
3-Probably not use	129	21.5	139	22.7
4-Definitely not use	375	62.4	356	58.2

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

Totals (*n* = 601)

Missing	System 17
Total	618

Table 2o

Pre to Post Safety First Alcohol Use with Family San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1- Definitely use	32	5.3	36	5.9
2- Probably use	97	16.2	107	17.5
3- Probably not use	134	22.4	129	21.1
4- Definitely not use	336	56.1	340	55.6

Totals (*n* = 599)

Missing	System 19
Total	618

Table 2p

Pre to Post Safety First Alcohol Use at a Party San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	35	5.8	42	6.9
2-Probably use	91	15.2	90	14.7
3-Probably not use	102	17.0	123	20.1
4-Definitely not use	372	62.0	358	58.4

Totals (*n* = 600)

Missing	System 18
Total	618

Table 2q

Pre to Post Safety First Prescription Drug Use with Best Friend San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	15	2.4	13	2.1
2-Probably use	15	2.4	26	4.2
3-Probably not use	89	14.4	95	15.4
4-Definitely not use	499	80.7	483	78.3

Totals (*n* = 605)

Missing	System 13
Total	618

Table 2r

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

Pre to Post Safety First Prescription Drug Use with Date San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	10	1.6	9	1.5
2-Probably use	10	1.6	17	2.8
3-Probably not use	91	14.7	103	16.8
4-Definitely not use	507	82	485	79.0
Totals (n = 618)				
Total	618			

Table 2s

Pre to Post Safety First Prescription Drug Use with Family San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	13	2.1	15	2.5
2-Probably use	34	5.5	50	8.2
3-Probably not use	96	15.5	102	16.7
4-Definitely not use	475	76.9	445	72.7
Totals (n = 612)				
Missing	System 6			
Total	618			

Table 2t

Pre to Post Safety First Prescription Drug Use at a Party San Francisco Frequencies (F) and Percentages (%)

How Often?	Pre F	Pre %	Post F	Post %
1-Definitely use	12	1.9	11	1.8
2-Probably use	14	2.3	13	2.1
3-Probably not use	83	13.4	91	14.8
4-Definitely not use	509	82.4	498	81.2
Totals (n = 612)				
Missing	System 6			
Total	618			

Table 2

Results of t-test "Have you chosen to volunteer to help out or stand up for a cause?" pre to post Safety First

					95% CI for Mean Difference	
<u>Pre</u>		<u>Post</u>				
M	SD	M	SD	t	df	

Advocacy

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

1.99 .079 1.83 .37 9.13* 478

* p = .001

Students chose "1" for yes and "2" for no then wrote in the type of advocacy or volunteering they did. Students were significantly more involved with volunteering and standing up for a cause after Safety First.

Table 2a

Results of t-test "How to detect an opioid overdose?" Pre to post Safety First

	Pre			Post			t	df	95% CI for Mean Difference
	M	SD	n	M	SD	n			
Opioid Overdose	3.98	.192		2.91	1.26		19.73*	563	

* p = .001

Students wrote in answers on the survey. The answer was coded as "1" CUPS- cold, and clammy, unresponsiveness, puking, and sweating; "2" Two or Three of CUPS; and "3" One of CUPS; and "4" I don't know or incorrect. Students knew significantly more about how to detect an opioid overdose after Safety First.

Table 2b

Results of t-test "What is harm reduction?" pre to post Safety First

	Pre		Post		t	df	95% CI for Mean Difference
	M	SD	M	SD			
Harm Reduction Definition	2.59	.079	2.03	.57	15.96*	556	

* p = .001

Students wrote in answers on the survey. The answer was coded as "1" if it was reducing harm related to substance use and health, "2" if it just said reducing harm and "3" if it said I don't know or was incorrect. Students knew significantly more about harm reduction after Safety First.

Table 2c

Results of t-test "What is abstinence?" pre to post Safety First

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

	Pre		Post		t	df	95% CI for Mean Difference
	M	SD	M	SD			
Abstinence Definition	2.28	.557	1.99	.844	16.03*	551	

* p = .001

Students wrote in answers on the survey. The answer was coded as “1” abstaining from substance use; “2” refraining from something, and “3” I don't know or incorrect. Students knew significantly more about abstinence after Safety First.

Table 2d

Results of t-test “What is the drug policy at your school?” pre to post Safety First

	Pre		Post		t	df	95% CI for Mean Difference
	M	SD	M	SD			
Drug Policy	1.99	.85	1.77	.77	4.32*	553	

* p = .001

Students wrote in answers on the survey. The answer was coded as “1” zero tolerance, progressive suspension, parent guardian contacted, referred to Behavioral Intervention Service (BIS); “2” no drugs or a form of zero tolerance; and “3” I don't know or incorrect. Students knew significantly more about their school drug policy after Safety First.

Table 2e

Results of t-test “How would you advocate for a drug policy?” pre to post Safety First

	Pre		Post		t	df	95% CI for Mean Difference
	M	SD	M	SD			
How to Advocate For a drug policy	2.73	.46	2.23	.82	11.97	538	

* p = .001

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

Students wrote in answers on the survey. The answer was coded as “1” harm reduction related advocacy activities; “2” one advocacy activity not related to Harm Reduction, or only no drugs or a form of zero tolerance; and “3” I don't know or incorrect. Students knew significantly more about their school drug policy after Safety First.

Appendix A

Safety First: Real Drug Education for Teens Pre-Class Youth Survey

Class Location/Date:

Please tell us about yourself:

How old are you? _____

What is your gender? Male Female

Other _____

What neighborhood do you live in? _____

What is your race/ethnicity? Check all that apply.

Black / African American

White

Hispanic / Latino Asian

Native American

Other _____

1) During the past three months have you... (Please circle either YES or NO)

2) Participated in any other programs focused on substance use (using substances, such as alcohol or drugs)?

YES NO

Please describe:

3) Gotten into a fight with other youth at school or around the neighborhood? YES NO

Please describe:

4) Been arrested or stopped by the police? YES NO

If YES, for what?

5) Been suspended? YES NO If YES, for what?

6) Chosen to volunteer to help out or stand up for a cause? YES

Questions about drugs and drug policy:

7) Describe how to identify an overdose on opioids (A class of drugs that relieve pain, examples include heroin, fentanyl, oxycodone, and morphine).

8) What is the drug policy (rules and regulations regarding drugs or drug use) at your school?

9) How would you advocate for a drug policy? At your school? And in your community?

1) The definition of “drug” includes sugar and caffeine.
2) Reviewing one online source about a substance is enough to know its effects.
3) You should call 911 if someone is overdosing.
4) Using alcohol can cause dependence and addiction.
5) Marijuana is safe because it is all natural.

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

- | |
|---|
| 6) People do not become dependent upon marijuana. |
| 7) If someone drinks too much alcohol, vomits and passes out, you should let them sleep it off. |
| 8) You can die from drinking too much alcohol at one time. |
| 9) Alcohol helps you deal with uncomfortable feelings. |
| 10) Marijuana edibles take effect immediately. |
| 11) Zero tolerance drug policies make schools safer. |
| 12) Oxycontin is less addictive than heroin. |
| 13) A single injection of heroin can cause an overdose. |
| 14) It is better not to drink water while using MDMA (“molly”). |
| 15) If you overdose on a drug you will die. |
| 16) Crack and cocaine have different active ingredients. |
| 17) It is safe to use someone else’s prescription drug if you both have the same symptoms. |
| 18) It is safe to take Adderall and other prescription stimulants to stay awake and study. |
| 19) Where someone uses a drug, or, setting, contributes to how safe their use is. |
| 20) Crack is more dangerous than cocaine. |

21) What grades do you get in school? (Mark one)

- Mostly A’s Mostly B’s Mostly C’s Mostly D’s Mostly F’s

22) What is the highest level of school you plan to finish? (Mark one)

- I may not finish high school I plan to finish high school I plan to go to vocational or trade school after high school graduation I plan to go to college I plan to go to graduate school or professional school (law, medicine)

23) How often are you with youth who are smoking cigarettes? (Mark one)

- Daily Weekly Monthly Never

24) On the days you smoke cigarettes, how many do you usually smoke? (Mark one)

- Less than 1 cigarette a day 1 or 2 cigarettes a day 3 to 7 cigarettes a day About 1/2 pack of cigarettes a day A pack or more of cigarettes a day I don’t smoke cigarettes

25) About what percent (%) of students in your grade do you think smoked cigarettes one or more times in the last month? Your best guess is fine. _____ %

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

26) How often are you with youth who are drinking alcohol? (Mark one)

Daily Weekly Monthly Never

27) About what percent (%) of students in your grade do you think drank alcohol one or more times in the last month? By alcohol we mean beer, wine or hard liquor. Your best guess is fine. _____ %

28) On how many days did you have any alcohol in the last month? (Mark one)

None 1 or 2 days in the last month 3 to 5 days in the last month 6 to 19 days in the last month 20 or more days in the last month

29) Who usually offers you alcohol? (Mark one)

My friends Kids I don't know well My brother or sister Adults I know well Adults I don't know well No one offers me alcohol

30) About what percent (%) of the students in your grade do you think used marijuana one or more times in the last month? Your best guess is fine. _____ %

31) On how many days did you use any marijuana in the last month? (Mark one)

None 1 or 2 days in the last month 3 to 5 days in the last month 6 to 19 days in the last month 20 or more days in the last month

32) How often are you with youth who are smoking marijuana? (Mark one)

Daily Weekly Monthly Never

33) On the days you use marijuana, about how many times do you use it? (Mark one)

Once a day Twice a day 3 or more times a day I don't use marijuana

34) Suppose you are offered marijuana. What would you do in this situation? (Mark one box for each item)

Suppose: a. Your best friend is using marijuana

I would definitely use marijuana I would probably use marijuana I would probably not use marijuana I would definitely not use marijuana

Suppose: b. Your date is using marijuana

I would definitely use marijuana I would probably use marijuana I would probably not use marijuana I would definitely not use marijuana

Suppose: c. A family member offers you marijuana

I would definitely use marijuana I would probably use marijuana I would probably not use marijuana I would definitely not use marijuana

Suppose: d. You're at a party where everyone is using it.

I would definitely use marijuana I would probably use marijuana I would probably not use marijuana I would definitely not use marijuana

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

35) Suppose you are offered alcohol. What would you do in this situation? (Mark one box for each item)

Suppose: a. Your best friend is using alcohol

I would definitely use alcohol I would probably use alcohol I would probably not use alcohol I would definitely not use alcohol

Suppose: b. Your date is using alcohol

I would definitely use alcohol I would probably use alcohol I would probably not use alcohol I would definitely not use alcohol

Suppose: c. A family member offers you alcohol

I would definitely use alcohol I would probably use alcohol I would probably not use alcohol I would definitely not use alcohol

Suppose: d. At a party where everyone is using it.

I would definitely use alcohol I would probably use alcohol I would probably not use alcohol I would definitely not use alcohol

36) Suppose you are offered a prescription drug (e.g., Adderall, OxyContin, Vicodin, Valium, cough syrup) and you do not have a prescription:

Suppose: a. Your best friend is using the prescription drug

I would definitely use the prescription drug I would probably use the prescription drug I would probably not use the prescription drug I would definitely not use the prescription drug

Suppose: b. Your date is using the prescription drug

I would definitely use the prescription drug I would probably use the prescription drug I would probably not use the prescription drug I would definitely not use the prescription drug

Suppose: c. A family member offers you the prescription drug

I would definitely use the prescription drug I would probably use the prescription drug I would probably not use the prescription drug I would definitely not use the prescription drug

Suppose: d. At a party where everyone is using it.

I would definitely use the prescription drug I would probably use the prescription drug I would probably not use the prescription drug I would definitely not use the prescription drug

POST SURVEY

40) What did you think of the *Safety First: Real Drug Education for Teens curriculum*?

(Mark one box)

I would highly recommend it to other students I would recommend it with some changes
I would not recommend it at all

If you marked “I would recommend it with some changes,” please describe what you would change:

If you marked, “I would not recommend it at all,” please explain why:

41) What did you like best about the curriculum?

42) What did you like least about it?

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

43) What, if anything, would you change about the curriculum?

44) Name 3 harm reduction strategies that you will use for yourself, family or peers.

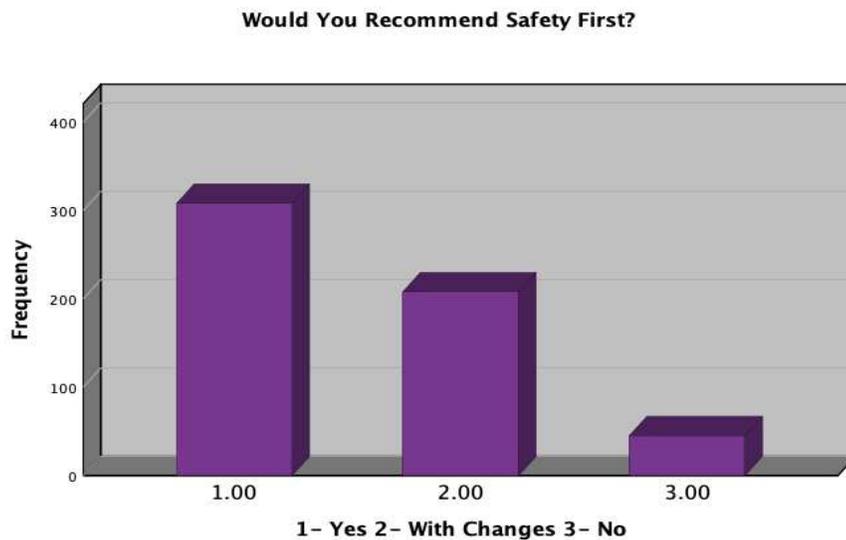
Appendix B

Student Evaluation of Safety First

Students were asked the following questions to evaluate Safety First. Charts illustrate the responses.

Would You Recommend Safety First?

Students were asked on the post survey whether they would recommend Safety First. “1” was code for “I would highly recommend it,” “2” for “I would recommend with some changes” and “3” for “I would not recommend it at all.” Fifty-five percent (n= 308) of students from five San Francisco Unified School District high schools reported that they would recommend Safety First. Thirty-seven percent (n =208) of the students stated they would recommend Safety First with some changes. Eight percent (n= 45) relayed they would not recommend Safety First. Thus 92% of the students believed Safety First was a useful experience.



By School, Race, Religion, Grades, Future Plans and Gender

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

A one-way ANOVA showed no effect from school, race, religion, grades or future plans on whether or not a student would recommend Safety First. An Independent t-test showed no significant relationship between recommending Safety First and gender.

What did you Like Best about Safety First?

What students liked best about Safety First was coded as “1” Learning about harm reduction strategies, including what to do in an overdose, a non judgmental approach to teaching drug education, and I liked “everything;” “2” learning about different substances; “3” the interactive/engaging activities including Kahoot, the Koolaid exercise and liking how the teacher taught the class overall; “4” Videos; and “5” Nothing or I Don’t Know. Student quotes best describe each code “1” through “5”:

1. *I actually learned a lot and didn't feel like I was just being told that drugs were awful, and trying them makes you an awful person, but I learned how to be safe and smart.*

High schoolers are more prepared for anything involving drug usage and overdose.

It was not one of those "DARE" abstinence only curriculums where they try to convince you that weed is a gateway to heroine and you will die if you try molly. I actually felt like I learned something that wasn't fear based. You seem to have tried really hard to make this curriculum great and it shows.

2. *I like learning about the different effects different drugs can do to your brain and body*

It was interesting to learn about the different drugs and what they do. Also the teacher explained it very well.

3. *I liked the different activities that we did that demonstrated different scenarios and substances etc.*

I liked the part where we drank the Koolaid for a party experiment

4. *The salty kool-aid. Also, the ASAP science videos. I absolutely love that youtube channel*

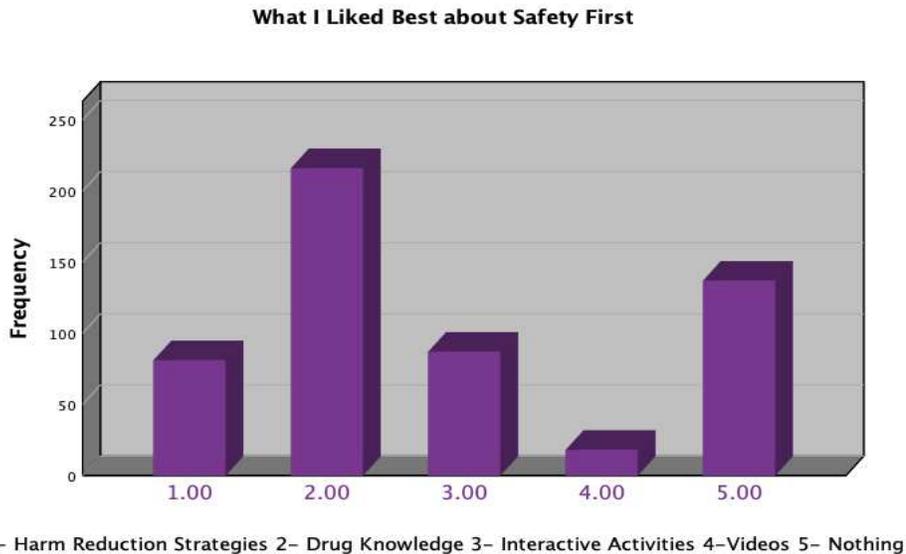
I liked the videos, they were informative

5. *Nothing*

Idk [I don't know]

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

“Learning about specific substances” (f= 216, 40%) was what the majority of students liked about Safety First. Students wrote “Nothing” or Didn’t Know second (f= 137, 25%); the interactive and engaging activities third (f= 87, 16%); learning harm reduction strategies fourth (f= 81, 15%) and videos were the least mentioned (f= 18, 3.3).



By School, Race, Religion, Grades, Future Plans and Gender

A one-way ANOVA showed no effect from school, race, religion, grades or future plans on what a student liked best about Safety First. An Independent t-test showed no significant relationship between what a student liked best about Safety First and gender.

What would you change about Safety First?

What students would change about Safety First was coded as “1” Less slides, packets and lectures. Make more engaging with hands on activities more fun and interactive. “2” More Information about different drugs, benefits, effects, historical context, more personal stories, treatment, and reasons for addiction to different substances; “3” Nothing; and “4” I don’t know. Student quotes best described each code “1” through “4”:

1. *Less words, add more interesting things, and fun things on the slides.*

More fun activities, field trips to hospitals, where drugs are processed, etc.

I would add more activities to make it more engaging.

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

2. *I'd make sure that more information is provided on the specific types of drugs.*

Include a larger variety of drugs.

I would add more information on the individual drugs instead of just the general category

3. *Nothing.*

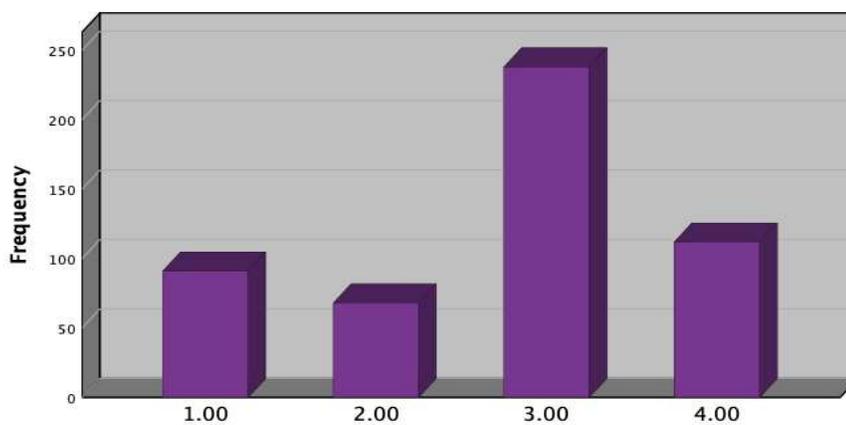
I wouldn't change anything.

I think the program is fine how it is already.

4. *IDK [I don't know]*

“Nothing” (f= 238, 47%) was what the majority of students wanted to change about Safety First. Students wrote “I don't know” second (f= 112, 22%); “Less slides, packets and lectures and more interactive and engaging activities” third (f= 91, 18%); and fourth “More Information...” (f= 68, 13%). Thus less than half of the students would not change anything about Safety First. Thirty one percent would reduce the slides and packets and make the classes more interactive; and include more information about different drugs, benefits, effects, historical context, personal stories, treatment, and reasons for addiction to different substances. The quotes above give examples from students.

What I Would Change about Safety First



1- Less slides and Packets Make More Interactive 2-More Information about Different Drugs 3- Nothing 4- I Don't Know

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

By School, Race, Religion, Grades, Future Plans and Gender

A one-way ANOVA showed no effect from school, race, religion, grades or future plans on what changes a student would make to Safety First. An Independent t-test showed no significant relationship between changes to Safety First and gender.

Name Three Harm Reduction Strategies

The harm reduction strategies were coded as “1” Realize and plan for set/setting and limits around goal setting; “2” Contents, dose, dosage including reduction of use; “3” Abstinence and alternatives to drugs; “4” Harm Reduction response to drug related emergencies like the recovery position; “5” I Don’t Know; and 6 “Advocacy.” Student quotes best described each code “1” through “6”:

1. *When you smoke weed do it after school or over the weekends not in school.*

Be in a safe place with people you trust

Do it [drugs at] an appropriate time of the day and situation

2. *Edibles juts eat it 1 and no more because you can overdose*

Small doses

Drinking water with beer and molly

3. *dont smoke dont smoke dont smoke*

Drink water instead of alcohol

Exercise

4. *Call 911 in event of overdose*

know how to respond to an emergency

Naloxone CPR

5. *Idk [I don’t know]*

6. *spread posters*

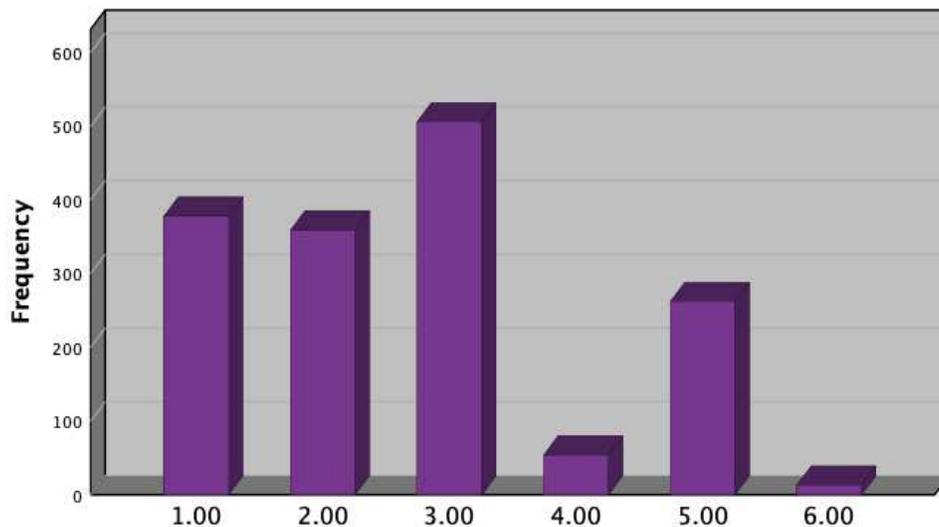
spread facts

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

I can advocate for the dismissal of Reagan era war-on-drugs policies that are making the world unsafer, and making drugs more dangerous and making it more dangerous for people addicted to get safe drugs.

“Abstinence and alternatives to drugs” (f= 506, 32.2%) was what the majority of students chose as a harm reduction strategy. “Realize and plan for set/setting and limits around goal setting” was second (f= 378, 24%); “Contents, dose, dosage including reduction of use” was third (f= 359, 23%); fourth was “I don’t know” (f= 262, 17%). Fifth was harm reduction response to drug related emergencies, like the recovery position (f= 54, 3.4%); and lastly, advocacy (f= 13, .8%).

Name Three Harm Reduction Strategies



1-Set/Setting, Limits and Goal Setting 2-Dose and Dosage 3- Abstinence and Alternatives to Drugs 4-Harm Reduction Resonse to Drug Related Emergencies i.e. Overdose 5-I Don't Know 6- Advocacy

By School

A one-way ANOVA showed that attending Washington high school had a significant effect on change in knowledge of harm reduction in comparison to Wallenberg [F(4, 517) = 3.38, p= .010]. Washington shifted more towards “1” Realize and plan for set/setting and limits around goal setting; “2” Contents, dose, dosage including reduction of use; and Wallenberg towards “3” Abstinence and alternatives to drugs and “4” Harm Reduction response to drug related emergencies like the recovery position.

By Race, Religion, Grades, Future Plans and Gender

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

A one-way ANOVA showed no effect from between race, religion, grades, future plans on knowledge of harm reduction. An Independent t-test showed no significant relationship between harm reduction knowledge and gender.

Summary Student Evaluation of Safety First

Overall students from five public high schools in San Francisco would recommend Safety First Real Drug Education for Youth. Fifty-five percent (n= 308) would recommend the curriculum and 37% (n =208) would recommend Safety First with some changes. Eight percent (n= 45) relayed they would not recommend Safety First. Thus 92% of the students believed Safety First was a useful experience. When asked what student liked best about Safety First they relayed “Learning about specific substances” (f= 216, 40%), “Nothing” or Didn’t Know (f= 137, 25%); the interactive and engaging activities (f= 87, 16%); learning harm reduction strategies (f= 81, 15%) and videos (f= 18, 3.3).

What Would You Change about Safety First?

When asked what the students would change about Safety First youth relayed, “Nothing” (f= 238, 47%); “I don’t know” (f= 112, 22%); “Less slides, packets and lectures and more interactive and engaging activities” (f= 91, 18%); and “More Information about different drugs, benefits, effects, historical context more personal stories, treatment and reasons for addiction” (f= 68, 13%). Thus just less than half of the students (47%) would not change anything about Safety First. Thirty one percent would reduce the slides and packets and make the classes more interactive; and include more information about different drugs, benefits, effects, historical context, personal stories, treatment, and reasons for addiction to different substances. The quotes above give examples from students.

Name Three Harm Reduction Strategies

“Abstinence and alternatives to drugs” (f= 506, 32.2%) was the most prevalent harm reduction strategy recorded. “Realize and plan for set/setting and limits around goal setting” was second (f= 378, 24%); “Contents, dose, dosage including reduction of use” was third (f= 359, 23%); fourth was “I don’t know” (f= 262, 17%). Fifth was harm reduction response to drug related emergencies, like the recovery position (f= 54, 3.4%); and lastly, advocacy (f= 13, .8%).

By School, Race, Religion, Grades, Future Plans and Gender

SCHOOL-BASED HARM REDUCTION WITH ADOLESCENTS

There was no relationship between school, race, gender, religion, grades, future plans and whether or not a student would recommend Safety First, what they liked best, or what they would change. An ANOVA did show a significant relationship between Washington and Wallenberg in relationship to name 3 harm reduction strategies. More Washington students moved towards “Set and Setting” and “Dose and Dosage” while more Wallenberg student moved towards “Abstinence and Alternatives to Drugs.”

The student recommendations provide critical information for how to improve Safety First to make it more effective for the target population

Appendix C

Likert Scale Pre and Post Results

An independent t-test was conducted to ascertain if there was a significant difference between students' scores on the Likert Scale items 1-20 between the pre-test and the post-test for the four classes tested. The test was scored from one through five, with one meaning that the students strongly agreed with the statement and five meaning that students strongly disagreed with the statement. The paired t-test showed that 17 out of the 20 items were significant. Two of the three items that did not show significance still showed the mean response going in the desired direction. Change in the dependent variable, the students harm reduction knowledge and behavior, is most likely due to Safety First.

1) The definition of “drug” includes sugar and caffeine. More students agreed with this statement after Safety First ($M= 2.1$, $SD= 1.15$) than before ($M= 3.16$, $SD= 1.20$), $t(558) = 14.44$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

2) Reviewing one online source about a substance is enough to know its effects. More students disagreed with this statement after Safety First ($M= 3.74$, $SD= 1.07$) than before ($M= 3.60$, $SD= 1.07$), $t(560) = -2.040$, $p = .042$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

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3) You should call 911 if someone is overdosing. More students strongly agreed with this statement after Safety First (M= 1.45, SD= .69) than before (M= 1.64, SD= .87), $t(552) = 3.90$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

4) Using alcohol can cause dependence and addiction. More students strongly agreed with this statement after Safety First (M= 1.75, SD= .79) than before (M= 1.97, SD= .90), $t(555) = 4.11$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

5) Marijuana is safe because it is all natural. More students disagreed with this statement after Safety First (M= 3.86, SD= 1.12) than before (M= 3.58, SD= 1.07), $t(550) = -4.21$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

6) People do not become dependent upon marijuana did not show a significant change from pre to post that can be attributed to Safety First. However the mean showed that on average the students disagreed more with this statement after Safety First (M= 3.56, SD= 1.11) than before (M= 3.45, SD= .98), $t(544) = -1.70$, $p = .090$).

7) If someone drinks too much alcohol, vomits and passes out, you should let them sleep it off. More students disagreed with this statement after Safety First (M= 4.03, SD= 1.12) than before (M= 3.47, SD= 1.20), $t(553) = -8.53$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

8) You can die from drinking too much alcohol at one time. More students strongly agreed with this statement after Safety First (M= 1.79, SD= 1.29) than before (M= 2.15, SD= 1.05), $t(556) = 5.05$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

9) Alcohol helps you deal with uncomfortable feelings. More students agreed with this statement after Safety First (M= 2.91, SD= 1.123) than before (M= 3.05, SD= 1.126), $t(558) = -2.08$, $p = .037$). This shows that more content about the effects of alcohol is necessary in the Safety First unit.

10) Marijuana edibles take effect immediately. More students disagreed with this statement after Safety First (M= 3.42, SD= 1.23) than before (M= 3.22, SD= .89), $t(552) = -3.08$, $p = .002$).

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Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

11) Zero tolerance drug policies make schools safer. More students disagreed with this statement after Safety First (M= 3.42, SD= 1.22) than before (M= 2.76, SD= 1.19), $t(543) = -8.84$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

12) Oxycontin is less addictive than heroin. More students disagreed with this statement after Safety First (M= 3.27, SD= .80) than before (M= 3.10, SD= .62), $t(554) = -3.80$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

13) A single injection of heroin can cause an overdose. More students agreed with this statement after Safety First (M= 2.71, SD= 1.02) than before (M= 2.84, SD= .81), $t(550) = 2.47$, $p = .014$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

14) It is better not to drink water while using MDMA (“molly”) did not show a significant change from pre to post that can be attributed to Safety First. The mean showed that on average the students agreed more with this statement after Safety First (M= 2.94, SD= .77) than before (M= 3.00, SD= .59), $t(488) = 1.54$, $p = .123$). The correct answer was strongly disagree. It is possible that the curriculum needs to more effectively address harm reduction related to MDMA.

15) If you overdose on a drug you will die did not show a significant change from pre to post that can be attributed to Safety First. However, more students did disagree with this statement after Safety First (M= 2.90, SD= 1.23) than before (M= 2.78, SD= 1.10), $t(543) = 1.70$, $p = .089$).

16) Crack and cocaine have different active ingredients. More students disagreed with this statement after Safety First (M= 3.47, SD= 1.23) than before (M= 2.88, SD= .77), $t(548) = -9.65$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

17) It is safe to use someone else's prescription drug if you both have the same symptoms. More students disagreed with this statement after Safety First (M= 4.18, SD= .97) than before (M= 3.82, SD= .99), $t(551) = -6.12$, $p = .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

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18) It is safe to take Adderall and other prescription stimulants to stay awake and study.

More students disagreed with this statement after Safety First ($M= 3.84$, $SD= .99$) than before ($M= 3.48$, $SD= .95$), $t(557) = -6.29$, $p= .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

19) Where someone uses a drug, or, setting, contributes to how safe their use is. More students agreed with this statement after Safety First ($M= 2.54$, $SD= 1.20$) than before ($M= 3.17$, $SD= .88$), $t(553) = 9.75$, $p= .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

20) Crack is more dangerous than cocaine. More students disagreed with this statement after Safety First ($M= 3.45$, $SD= 1.01$) than before ($M= 3.03$, $SD= .74$), $t(559) = -7.50$, $p= .001$). Desired change in the students' harm reduction knowledge and behavior is most likely due to Safety First.

Gender and Likert Scale Items

The t-tests demonstrated that students from all genders showed an average desired change from pre to post for most of the Likert scale items. I conducted an independent sample t-test to ascertain if gender had an impact on students' scores on the Likert Scale items. There was a significant difference between males and females **on two** of the 20 Likert Scale items.

- Both males and females moved towards disagreeing that “**Marijuana is safe because it is all natural**” after Safety First. Males had a larger increase from ($\mu = 3.43$) to ($\mu = 3.88$), $t(602) = -3.67$, $p = .001$ and therefore on more strongly disagreed than females.
- Both males and females moved to strongly agreeing that “**You can die from drinking too much alcohol at one time**” after Safety First. Females had a larger increase than from ($\mu = 2.36$) to ($\mu = 1.80$), $t(601) = -4.14$, $p = .001$ and therefore more strongly agreed than males.

Schools and Likert Scale Items

The t-tests showed that overall students from every school showed an average desired change from pre to post for most of the Likert scale items. ANOVA tests answered if the school the students attended had a significant effect on their responses. The following items showed significant effect based on school placement.

- **The definition of “drug” includes sugar and caffeine:** A one-way ANOVA yielded that attending Washington high school had a significant effect on the desired student

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response [$F(4, 553) = 12.95, p = .001$]. Washington students were more likely to move towards agreeing with the statement than students from all the other schools.

- **Marijuana is safe because it is all natural:** A one-way AVOVA yielded that attending Wallenberg high school had a significant effect on the desired student response [$F(4, 545) = 2.73, p = .028$] in comparison to Mission. Students from Wallenberg were less likely to move towards agreeing with the statement than students from Mission.
- **Marijuana edibles take effect immediately:** A one-way AVOVA yielded that attending Mission in comparison to Burton and Wallenberg, and attending Washington and Balboa in comparison to Burton had a significant effect on the desired student response [$F(4, 547) = 6.95, p = .001$]. Students from Mission in comparison to Burton and Wallenberg, and Washington and Balboa students in comparison to Burton students were more likely to move towards disagreeing with the statement.
- **Zero tolerance drug policies make schools safer:** A one-way AVOVA yielded that attending Mission high school had a significant effect on the desired student response [$F(4, 538) = 8.53, p = .001$]. Mission students were more likely to shift towards disagreeing with the statement than the students from all the other schools.
- **Crack and cocaine have different active ingredients:** A one-way AVOVA yielded that attending Washington high school had a significant effect on the desired student response [$F(4, 543) = 3.24, p = .012$] in comparison to Burton. Students from Washington were more likely to shift towards disagreeing with the statement than students from Burton.
- **It is safe to use someone else's prescription drug if you both have the same symptoms:** A one-way AVOVA yielded that attending Washington had a significant effect on the desired student response [$F(4, 546) = 5.33, p = .001$]. Students from Washington were more likely to shift towards disagreeing with the statement than students from Mission, Balboa and Burton.
- **Where someone uses a drug, or, setting, contributes to how safe their use is:** A one-way AVOVA yielded that attending Wallenberg high school had a significant effect on the desired student response [$F(4, 546) = 5.33, p = .001$]. Students from Wallenberg were more likely to move towards agreeing with the statement than students from Burton and Balboa.

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- **Crack is more dangerous than cocaine:** A one-way AVOVA yielded that attending Wallenberg and Washington high schools had a significant effect on the desired student response [$F(4, 546) = 5.33, p = .001$]. Washington and Wallenberg were more likely to move towards disagreeing with the statement than students from Burton.

Race and Likert Scale Items

The t-tests showed that students from all races showed an average desired change from pre to post for most of the Likert scale items. ANOVA tests answered if the race/ethnicity of the students had a significant effect on their responses. The following items showed significant effect based on race/ethnicity.

- **Marijuana is safe because it is all natural:** A one-way AVOVA yielded that Asian students were more likely to move towards disagreeing with the statement, which was the desired student response, [$F(6, 528) = 5.83, p = .001$] in comparison to Latinx and Black students.
- **People do not become dependent upon marijuana:** A one-way AVOVA yielded that white students were more likely to move towards disagreeing with the statement, which was the desired student response, [$F(6, 522) = 2.53, p = .020$] in comparison to black students.
- **Where someone uses a drug, or, setting, contributes to how safe their use is:** A one-way AVOVA yielded that white students were more likely to move towards agreeing with the statement, which was the desired student response, [$F(6, 522) = 2.53, p = .020$] in comparison to Latinx students.

Religion and Likert Scale Items

The t-tests showed that students from all religions showed an average desired change from pre to post for most of the Likert scale items. ANOVA tests answered if the religion of the students had a significant effect on their responses. The following items showed significant effect based on religion.

- **People do not become dependent upon marijuana:** A one-way AVOVA yielded that Muslim students were more likely to move towards disagreeing with the statement, which was the desired student response, [$F(4, 493) = 2.71, p = .029$] in comparison to Jewish students.

Summary

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Results of Likert Scale Pre and Post

I found that seventeen out of the 20 Likert Scale were significant from pre to post Safety First ($p < 0.001$). Two out of the three items that had no statistical significance, “**People do not become dependent upon marijuana,**” and “**If you overdose on a drug you will die,**” still showed a shift towards disagree, the desired answer, through Cross Tabulation. The item “**It is better not to drink water while using MDMA (“molly”)**” did not show a significant change from pre to post that can be attributed to Safety First. The mean showed that on average the students agreed more with this statement after Safety First. The correct answer was strongly disagree. More students agreed with this statement after Safety First: “**Alcohol helps you deal with uncomfortable feelings.**” This shows that more content about the effects of alcohol is necessary in the Safety First unit. This outcome provides valuable feedback to the Safety First developers: It is possible that the curriculum needs to more effectively address harm reduction related to MDMA and alcohol.

An Independent Sample T-Test showed “Gender” mattered on two items. Males had a larger increase from pre to post on the item “**Marijuana is safe because it is all natural,**” than females. More males strongly disagreed with the statement. More females moved to strongly agreeing that “**You can die from drinking too much alcohol at one time**” after Safety First than males.

An ANOVA test showed that race mattered on three items and religion had an effect on one. The one showing the most effect by race was “**Marijuana is safe because it is all natural.**” Asian students were more likely to move towards disagreeing with the statement, which was the desired student response, in comparison to Latinx and Black students. Muslim students were more likely to move towards disagreeing with the statement “**People do not become dependent upon marijuana,**” which was the desired student response, in comparison to Jewish students.

ANOVA tests showed that school mattered most in relationship to the student responses on the Likert Scale items from pre to post. Student response varied on eight items based on school placement. These are some of the highlights. Washington students were more likely to move

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towards agreeing with the statement **“The definition of “drug” includes sugar and caffeine”** than students from all the other schools. Mission students were more likely to shift towards disagreeing with the statement **“Zero tolerance drug policies make schools safer”** than the students from all the other schools. Washington students were more likely to shift towards disagreeing with the statement **“It is safe to use someone else’s prescription drug if you both have the same symptoms”** than students from Mission, Balboa and Burton.

The outcomes from the Likert Scale items showed that overall students learned a significant amount of harm reduction knowledge from the Safety First curriculum.

Appendix D

Pre and Post Substance Use Behaviors

The curriculum taught the students about harm reduction strategies. On the pre/post survey there were questions about substance use behaviors: 1) to understand the prevalence of substance use amongst the population; 2) to see if learning about harm reduction influenced students’ substance use behaviors/decision making from pre to post Safety First; and 3) to investigate whether students learned harm reduction skills.

Tobacco use

The answers to “How often are you with youth who are smoking cigarettes?” “How often are you with youth who vape tobacco?” “If you smoke cigarettes, how many do you usually smoke?” and “How often do you vape tobacco?” were coded as “1” Daily, “2” Weekly, “3” Monthly, and “4” Never. A paired t-tests showed that all smoking and vaping tobacco behavior questions showed no significance across any of the items from pre to post. The average was about Monthly or Never for each item (3.70) pre and post. “About what percent (%) of students in your grade do you think smoked cigarettes or vaped tobacco one or more times in the last month?” also showed no significant change from pre to post. The average stayed the same for cigarettes (21%) and vaping tobacco (35%).

Alcohol

The answers to “How often are you with youth who are drinking alcohol?” “About what percent (%) of students in your grade do you think drank alcohol one or more times in the last month?”

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and “If you drink alcohol, how many days did you have any alcohol in the last month?” were coded as “1” Daily, “2” Weekly, “3” Monthly, and “4” Never. A paired t-tests showed that all alcohol questions showed no significance across any of the items from pre to post. The average was Monthly or Never for each item (3.70) pre and post. Youth believed on average 25% of their peers were drinking alcohol from pre to post Safety First.

Marijuana Use

The answers to “About what percent (%) of the students in your grade do you think used marijuana one or more times in the last month?” “On how many days did you use any marijuana in the last month?” “How often are you with youth who are using marijuana?” were coded as “1” Daily, “2” Weekly, “3” Monthly, and “4” Never. A paired t-test showed there was no significance from pre to post on any of the items about cigarettes, vaping or alcohol use. Marijuana use was a different story.

- Students perceptions of “**About what percentage of students in your grade used marijuana in the last month?**” changed significantly after Safety First (M= 31.25, SD= 29.01) in comparison to before (M= 42.45, SD= 69.96), $t(551) = 3.46$, $p = .001$). Students believed that fewer peers used marijuana on average (31%) after Safety First than before the harm reduction unit (43%). The t-test showed that this shift can be attributed to Safety First.
- “**How often are you with youth who are using marijuana?**” changed after Safety First (M= 3.15, SD= 1.11) in comparison to before (M= 3.29, SD= 1.20), $t(586) = 1.96$ $p = .049$). Students reported spending more time with students that used marijuana on average from monthly or never (3.29) closer to monthly (3.15). The t-test showed that this shift can be attributed to Safety First.
- “On how many days did you use any marijuana in the last month?” showed no significant change from pre to post. The average was monthly or never (3.80) pre to post.

Summary

Tobacco use showed no significant change form pre to post. On average, youth reported being with youth that used tobacco or that they used tobacco themselves monthly or never (3.70) before and after Safety First. Youth believed 21% of their peers were smoking tobacco one or

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more times in the past month. Youth believed 35% of their peers were vaping tobacco one or more times in the past month. On average, youth reported being with youth that used alcohol, or using alcohol themselves monthly or never (3.70) before and after Safety First. Youth believed 25% of their peers were drinking alcohol one or more times in the past month.

Tobacco and alcohol showed no significant change from pre to post. Marijuana was a different story. Students believed that fewer peers used marijuana on average (31%) after Safety First than before the harm reduction unit (43%). Students reported spending more time with students that used marijuana on average from monthly or never (3.29) closer to monthly (3.15). Youth reported marijuana use was monthly or never (3.80) pre to post.

Would you use marijuana in the following scenarios?

Students were asked, “Suppose you are offered marijuana. What would you do in this situation?” The answers are coded as “1” I would definitely use marijuana “2” I would probably use marijuana “3” I would probably not use marijuana and “4” I would definitely not use marijuana. A paired t-test showed no significant change from pre to post in the students marijuana use except when using with a date.

- **Your best friend is using marijuana.** The average stayed around 3.32, I would probably not use to definitely not use marijuana, from pre to post.
- **Your date is using marijuana.** After Safety First, there was a significant change from pre to post in youth reporting they would definitely not use marijuana ($M= 3.98$, $SD= 1.33$) from probably not use marijuana ($M= 3.43$, $SD= .873$) if their date was using, $t(581) = -8.22$, $p = .001$). Average youth response moved from “I would probably not use” (3.43) to almost completely “I would definitely not use marijuana (3.98).
- **A family member offers you marijuana.** The average stayed around 3.39 I would probably not use to definitely not use marijuana, from pre to post.
- **You’re at a party where everyone is using marijuana.** The average stayed around 3.37 I would probably not use to definitely not use marijuana, from pre to post.

Would you use alcohol in the following scenarios?

Students were asked, “Suppose you are offered alcohol. What would you do in this situation?”

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The answers were coded as “1” I would definitely use alcohol “2” I would probably use alcohol “3” I would probably not use alcohol and “4” I would definitely not use alcohol. A paired t-test showed **NO** significant change from pre to post in the students alcohol use in the following scenarios.

- **Your best friend is using alcohol.** The average stayed around 3.37, I would probably not use alcohol, from pre to post.
- **Your date is using alcohol.** The average stayed around 3.43, I would probably not use alcohol, from pre to post.
- **A family member offers you alcohol.** The average stayed around 3.30, I would probably not use alcohol, from pre to post.
- **You’re at a party where everyone is using alcohol.** The average stayed around 3.35, I would probably not use alcohol, from pre to post.

Would you use prescription drugs in the following scenarios?

Students were asked, “Suppose you are offered prescription drugs (e.g., Adderall, OxyContin, Vicodin, Valium, cough syrup). What would you do in this situation?” The answers were coded as “1” I would definitely use prescription drugs “2” I would probably use prescription drugs “3” I would probably not use prescription drugs and “4” I would definitely not use prescription drugs. A paired t-test showed **NO** significant change from pre to post in the students alcohol use in the following scenarios.

- **Your best friend is using prescription drugs.** The average stayed around 3.72, I would probably not use prescription drugs to I would definitely not use prescription drugs, from pre to post.
- **Your date is using prescription drugs.** The average stayed around 3.75, I would probably not use prescription drugs to I would definitely not use prescription drugs, from pre to post.
- **A family member offers you prescription drugs.** The average stayed around 3.63, I would probably not use prescription drugs to I would definitely not use prescription drugs, from pre to post.

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- **You're at a party where everyone is using prescription drugs.** The average stayed around 3.75, I would probably not use prescription drugs to I would definitely not use prescription drugs, from pre to post.

Student reported marijuana and prescription drug use in possible scenarios showed significant change from pre to post. Marijuana use showed a change from “I would probably not use” close to “I would probably not use.” Prescription drug use showed a more remarkable change from “I probably would use,” to “I would probably not use.” Alcohol showed no change from pre to post, staying at “I would probably not use.”

What would you do to make substance use safer?

Students were asked, “**What would you do to make substance use safer?**” Students wrote in their answers. I recoded them to reflect what was taught in Safety First: “1” Realize and plan for set/setting and limits around goal setting related to substance use, and/or Contents, Dose, Dosage including reduction of use, “2” just reduce harm; “3” just say no to drugs; and “4” I don't know or incorrect.

- After Safety First, on average, students reported a specific harm reduction strategy learned in the course more often ($M= 1.60$, $SD= .79$) than before ($M= 2.25$, $SD= .80$), $t(537) = 13.01$, $p = .001$). Average youth response moved from “2” just reduce harm (2.25) to “1” Realize and plan for set/setting and limits around goal setting related to substance use, or Contents, Dose, Dosage including reduction of use (1.60).

Students made a remarkable change from pre to post in their ability to describe specific harm reduction strategies in response to “**What would you do to make substance use safer?**”

Average youth response moved from “2” just reduce harm (2.25) to “1” Realize and plan for set/setting and limits around goal setting related to substance use, or Contents, Dose, Dosage including reduction of use (1.60).

Summary

Pre and Post Substance Use Behaviors

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Tobacco use showed no significant change from pre to post. On average, youth reported being with youth that used tobacco or that they used tobacco themselves monthly or never (3.70) before and after Safety First. Youth believed 21% of their peers were smoking tobacco one or more times in the past month. Youth believed 35% of their peers were vaping tobacco one or more times in the past month. On average, youth reported being with youth that used alcohol, or using alcohol themselves monthly or never (3.70) before and after Safety First. Youth believed 25% of their peers were drinking alcohol one or more times in the past month.

Tobacco and alcohol showed no significant change from pre to post. Marijuana was a different story. Students believed that fewer peers used marijuana on average (31%) after Safety First than before the harm reduction unit (43%). Students reported spending more time with students that used marijuana on average from monthly or never (3.29) closer to monthly (3.15). Youth reported marijuana use was monthly or never (3.80) pre to post.

Marijuana use showed a significant change from “I would probably not use” to almost completely “I would definitely not use if “...your date is using marijuana” after Safety First. Prescription drug use and alcohol use showed no significant change from pre to post, staying an average between “I would probably not use to “I would definitely not use.”

Students made a remarkable change from pre to post in their ability to describe specific harm reduction strategies in response to **“What would you do to make substance use safer?”** Average youth response moved from “2” just reduce harm (2.25) to “1” Realize and plan for set/setting and limits around goal setting related to substance use, or Contents, Dose, Dosage including reduction of use (1.60).

An ANOVA was administered to see if any of the demographic factors had an effect on the substance use behavior outcomes from pre to post Safety First. Race and gender had the only effects. A one-way ANOVA yielded that Asian students were more likely to move towards “I would definitely not take/smoke weed with family” than black students [$F(6, 556) = 3.50, p = .002$]. An independent sample t-test evidenced that young men were more likely than young women to use prescription drugs with friends ($\mu = -.92$) to ($\mu = -1.31$), $t(111) = 2.35, p = .020$.

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The above results evidence that the curriculum taught the students about harm reduction strategies. Prevalence of substance use amongst the population became more clear; harm reduction seemed to influence students' substance use behaviors/decision making from pre to post Safety First, especially in relationship to marijuana and prescription drugs; and students clearly demonstrated an increase in knowledge of harm reduction strategies.

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