

Choosing the Best

Abstinence-Centered Curriculum

Longitudinal Study

1995-1996

Evaluation by:
John T. Vessey, Ph.D.
Mental Health Services & Evaluation Program
Northwestern University Medical School

Based on schools administered by:

PROJECT REALITY
P.O. Box 97/Golf, IL 60029

Choosing the Best is a school-based program intended to improve the attitudes of teenagers regarding their sexuality.

- Specifically, this program teaches the health benefits of abstaining from sexual activity until marriage.
- The goals of this program are to reduce teenage pregnancy and to reduce the health risks, both physical and psychological, that accompany early sexual activity.

INTRODUCTION

Previous evaluations of this curriculum have demonstrated a **link between sexual attitudes and sexual behavior**¹ – virgins consistently scored higher than non-virgins on a scale of attitudes toward abstinence.

Furthermore, it has been demonstrated that **several other behaviors are associated with sexual behavior**.² Chief among these are smoking and drinking alcohol. Students who have smoked or who have been drunk were far more likely to have had sexual intercourse than their non-smoking or non-drunk peers. It has also been shown, in previous evaluations, that both those who have smoked and those who have been drunk score lower on the attitudes toward abstinence scale.

The focus of the previous evaluations was on demonstrating that exposure to the *Choosing the Best* curriculum results in a positive change in attitudes toward abstinence, and that this change occurs for the high-risk teens as well as for the low-risk teens.

For example, it was shown that non-virgins had a larger positive change in attitudes than virgins, and that smokers and those who had been drunk had greater positive changes than non-smokers and those who had not been drunk.³

Given these positive findings, a longitudinal evaluation was undertaken to **examine attitude and behavior changes over one year** following exposure to *Choosing the Best*.

The goal of this evaluation is to describe what changes take place over the course of a year following participation in this abstinence-based curriculum.

METHODS

From the 1994-95 school year, there were 7,100 *students* that had completed the Pre-test prior to taking part in the *Choosing the Best* curriculum. This Pre-test had many demographic variables that were used to establish a unique code for each student that would allow their Pre-test to be matched with a Follow-up evaluation taken one year later. These codes were produced in such a way that the student's anonymity remained intact.

Because there were so many different schools that students could be attending the following year, due to movement from middle to high school, it was not cost-effective to send evaluators to each one. Therefore, it was decided that efforts should be concentrated on administering the Follow-up evaluation at several schools that were known to have many students who would have had the curriculum the *previous* year.

The Follow-up evaluation was administered to 3,675 *students*. This represented the pool of students that could potentially be matched to the prior year's Pre-tests.

The next step in the process involved matching the Follow-up evaluations to the Pre-tests from the year before. Initial computer matching yielded about 1,700 *matches (about 45 percent)*.

The codes were comprised of variations of the student's first, middle and last name, as well as their race, gender and date of birth. It was assumed that these would remain constant over the course of a year; however, it was evident that several codes were identical between the Pre-test and the Follow-up except for a deviation in the middle initial, or the day of birth, etc. It was decided that small deviations in the I.D. codes would be allowed in matching. But since the computer could only handle exact matches, this process was done by hand. This second round of matching yielded an additional 800 *matches*.

In the end, 2,541⁴ out of 3,675 Follow-up evaluations were matched (about 70 percent).

This evaluation focuses on the Pre-test and Follow-up information provided by those 2,541 students. These students range in age from 13 to 16, and were evenly split between males and females. The racial breakdown of the sample was 80 percent white, 6 percent black, 8 percent Hispanic, and 6 percent other.

RESULTS

Sexual Behavior

One of the most important questions that this evaluation was to answer was **whether there was any evidence that the *Choosing the Best* curriculum had an effect on sexual behavior.**

With this in mind, a question regarding *recent* sexual intercourse was added to the Pre-test in the previous year to supplement the question about *ever* having sexual intercourse. There were 78 *teens* who indicated on the Pre-test that they had had sexual intercourse in the previous three weeks. Of those students, only 36 (46 percent) indicated one year later that they had had sex in the previous three weeks.

In other words, 54 percent were no longer recently sexually active one year following the program.⁵ Although this represents a fairly small number within the sample, it does suggest that **sexually active teens can change their behavior.**

Another outcome to look at is how many students indicate that they had *ever* had sexual intercourse on Follow-up evaluation, compared to the number indicating that they *ever* had sex on the Pre-test.

Due to maturational and other effects, it would be expected that the number of students who have ever had sexual intercourse would increase over the course of a year. Without a comparison group, it is difficult to interpret the size of this increase. To shed some light on this, and to provide an estimate of the expected magnitude of the increase, a statistical solution was attempted.

From the previous evaluations, it was clear that smoking and drinking were strongly associated with sexual behavior.⁶ Thus, a model was built that predicted the percent of students who had indicated on the Pre-test that they had had sexual intercourse. A logistic regression was performed that included age, race, smoking, and drinking as independent variables. This model yielded for each student the probability that they had had sexual intercourse. **The average of all those probabilities accurately predicted the percent of students who, in fact had indicated being sexually active.**

The next step was to use this same model to predict the percent of students who indicated that they had had sexual intercourse at the time of the Follow-up evaluation. Given the increase in smoking and drinking, and the fact that the students were all one year older, the model predicted that 21.6 percent of the students would have had sexual intercourse at the time of the Follow-up. The actual 19.3 percent of students who had had sexual intercourse at Follow-up was less than the predicted 21.6 percent.

This would indicate that the number of newly sexually active students who had participated in the *Choosing the Best* program is smaller than would be predicted, given the increase in age, smoking, and drinking. This is another indication that the program may have had the desired effect of altering the sexual behavior of students. Although the 2.3 percent difference may seem small, it represents a 21 percent decrease in the expected number of newly sexually active students over the course of a year (an 8.4 percent increase instead of a predicted 10.7 percent increase).

Risk Behavior

One of the surprising findings from the Follow-up evaluation was the large increase in the number of students who indicated they had smoked or been drunk. While some increase is to be expected, the numbers in some age groups nearly doubled. Figure 1 is a graph of the percent of students (by age) who indicated on the Pre-test that they had smoked and then on the Follow-up one year later. As can be seen, there are sizable increases for each age group.

Figure 1

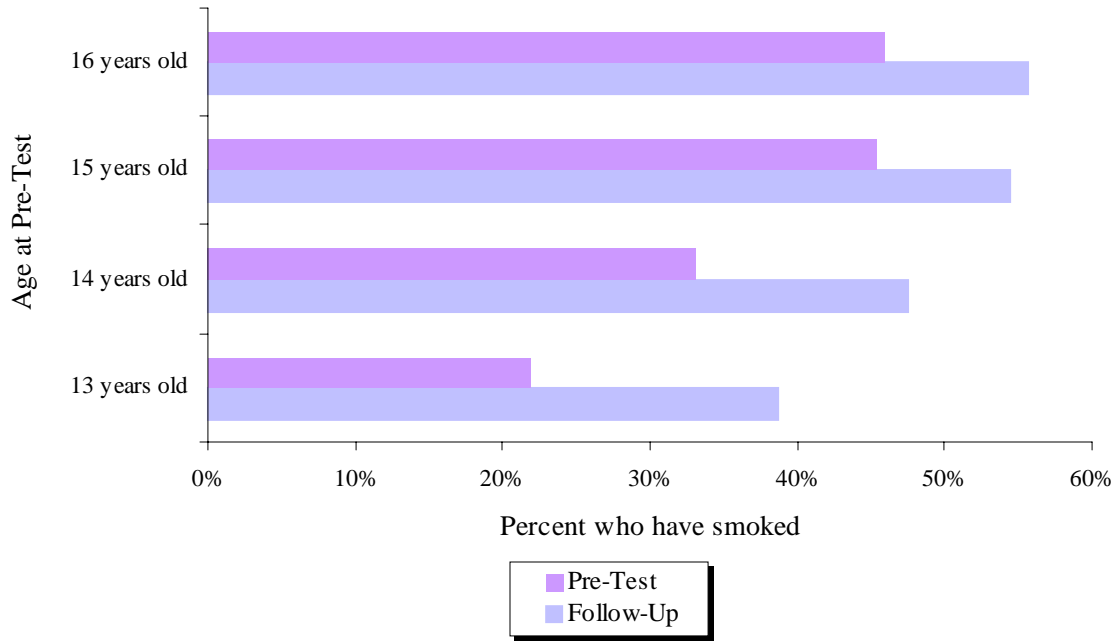
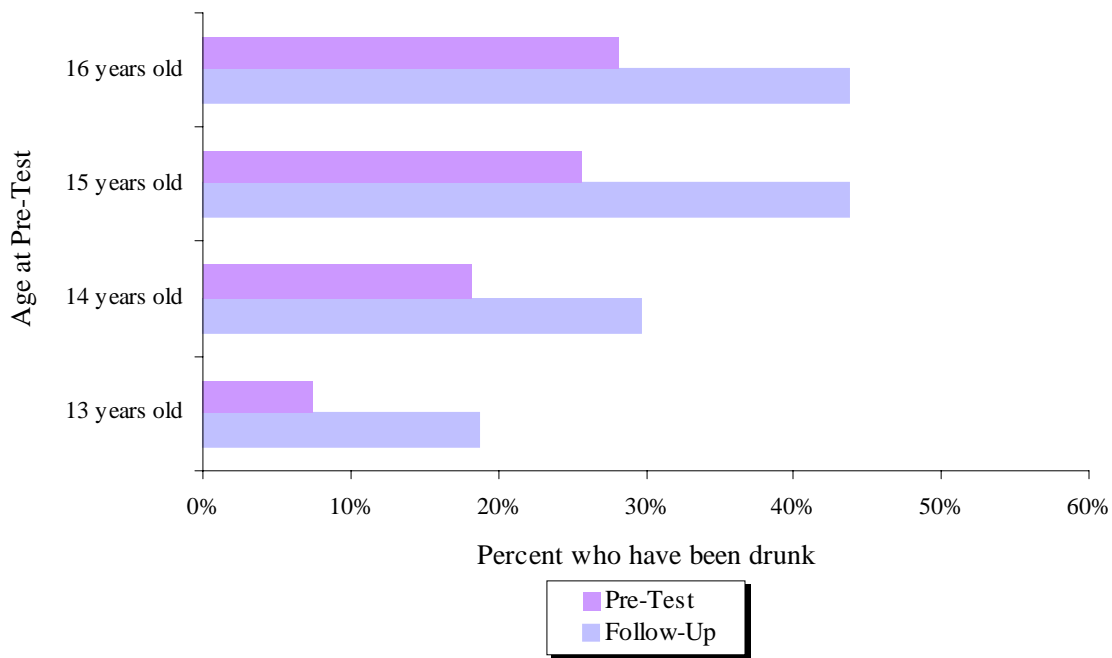


Figure 2

Figure 2 is the same type of graph for the percent of students who had ever been drunk. For 13 and 14-year-olds, the percentage doubles over the course of a single year.

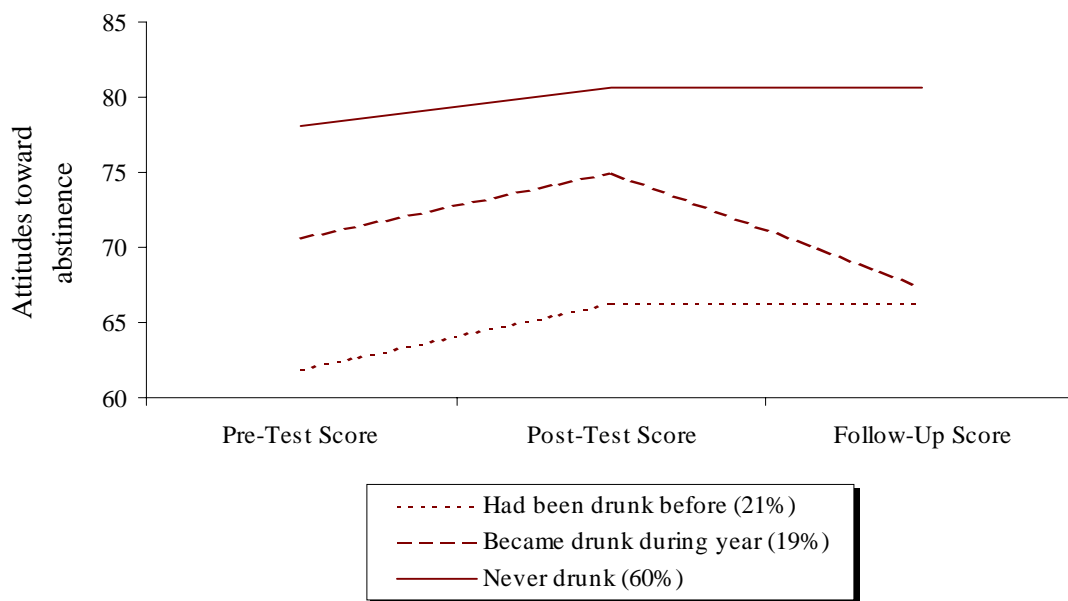


Because drinking was the variable most highly associated with sexual behavior, we wanted to examine how drinking affected a student's attitudes toward abstinence. Students were divided into three groups.

- The first group included the students who had indicated on both the Pre-test and the Follow-up that they had never been drunk.
- The second group included the students who had indicated on the Pre-test that they had been drunk.
- Finally, the third group included those students who had indicated on the Follow-up evaluation that they had been drunk, but not on the Pre-test. Thus, the third group consisted of those students who had been drunk for the first time sometime between the Pre-test and the Follow-up evaluation.

Figure 3

Figure 3 is a graph of the scores on the attitudes toward abstinence scale for each of the three groups.⁷ Scores are plotted for the Pre-test, Post-test and Follow-up.



Note: Those students whose behavior in terms of drinking remained the same also remained constant in their attitudes toward abstinence compared to their Post-Test scores. Those who became drunk for the first time during the year showed a definite decline in their attitudes toward abstinence.

There are several interesting findings from Figure 3. The first is that **all three groups had roughly the same response to the curriculum** as indicated by the Pre-test to Post-test changes. The second interesting finding is that the **students who are going to become drunk in the next year have attitude scores that are right in between the other two groups**. So even before that drinking behavior, they are a different group than the students who have not been drunk and will remain that way.

The third, and probably the most interesting, finding is that both those who were never drunk and those that had already been drunk at Pre-test maintain their new attitude toward abstinence over the course of the year following the *Choosing the Best* curriculum.

But the students who became drunk for the first time revert to attitudes that are even lower than where they had started at the Pre-test.

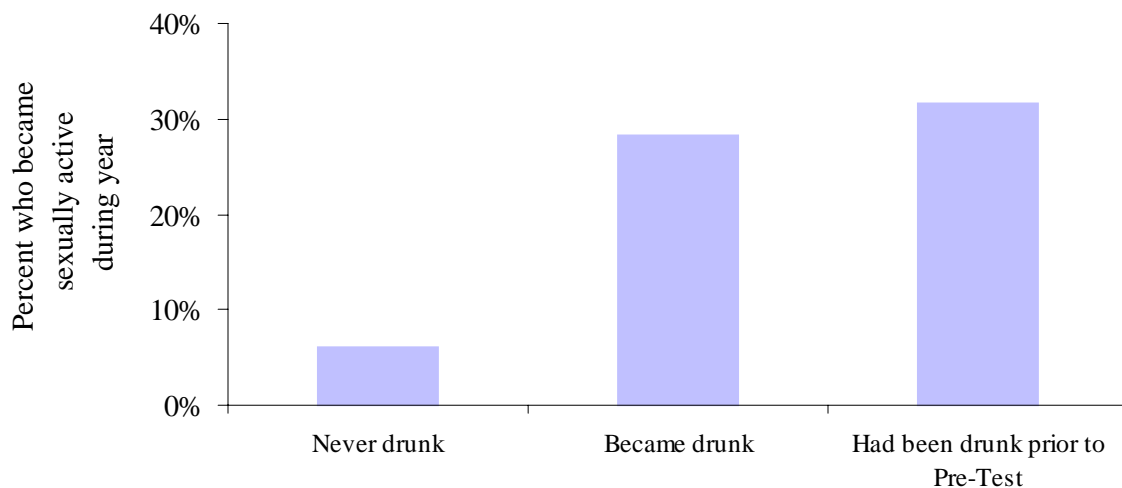
Clearly, this act of becoming drunk for the first time is somehow intertwined with their attitudes about abstinence. And because both their attitudes about abstinence and their drinking behavior are both highly associated with their sexual behavior, this is an area that requires further research.

Drinking and Sexual Involvement

As further evidence of the association between drinking and sexual behavior, we look at the students who became sexually active for the first time in the year between the Pre-test and the Follow-up evaluation.

Figure 4 is a bar graph that pictures the percentage of students who indicated on the Follow-up evaluation, but not on the Pre-test, that they had had sexual intercourse. The first group are the students who had never been drunk (as indicated on both the Pre-test and the Follow-up), the second group were the students who became drunk for the first time in the intervening year, and the third group were the students who indicated at the time of the Pre-test that they had been drunk.

Figure 4



As can be seen, the three groups differ greatly in the percentage who have had sexual intercourse. In fact, 75 percent of the students who indicated that they had sex for the first time during the previous year had been drunk at some time in their lives, and 38 percent had been drunk for the first time during that same previous year.

DISCUSSION

There were several results from this longitudinal evaluation indicating that the *Choosing the Best* curriculum did have its desired impact.

- **First, most of the teens who had been recently sexually active (within the past three weeks) before the programs were no longer recently sexually active one year after the program.**
- **Second, the number of students who had indicated that they had ever had sexual intercourse a year after the program was smaller than would have been predicted by the Pre-test data.**
- **Finally, it was shown that changes in attitudes toward abstinence that occurred between the Pre-test and Post-test persisted to the Follow-up, for both the students who indicated at the Pre-test that they had been drunk in their lifetimes and for students who indicated at the Pre-test and the Follow-up that they had never been drunk.**

While this evaluation has attempted to answer some questions, several others have been raised that require further research for an answer.

For example, it was shown that students who became drunk for the first time in the year following the program have dramatic reductions in their attitudes-toward-abstinence scores. They also become far more likely to have sexual intercourse for the first time.

What is unclear is the causative links among these three variables. Is becoming drunk causing a change in attitudes which, in turn, makes them more likely to engage in sex? Or perhaps having sexual intercourse forces them to change their attitudes to correspond to their new behavior. Unfortunately, all we have at this point are strong associations among drinking, sexual attitudes, and sexual behavior.

We are also limited by the type of questions that were asked on the evaluations. Because we wanted to limit the time it would take to finish the evaluations, we tried to keep the number of questions at a minimum. We also wanted to minimize the chances of parents or teachers objecting to the content of questions. Therefore, the risk-taking questions all asked if the student had ever engaged in the activity (i.e., smoking, being drunk, and having sex). Future evaluations should try to focus more attention on these behaviors, since they are so highly associated with each other.

For example, it would be important to find out whether the student drinks alcohol at all, how much, and how often, instead of just whether he or she had ever been drunk.

- The same holds for the sexual behavior variables.
- It would be important to try to add variables concerning the frequency of intercourse and the number of partners.

- It would also be important to get estimates of the number of students treated for an STD.
- Perhaps if several schools in a county had the same curriculum, then official county health data could be used to supplement the data provided directly by the students.

It was troubling to see the incredible increases in smoking and drinking behavior that took place over the course of just one year. Given the associations that have been demonstrated among smoking, drinking, and sexual behavior, it is clear that the **success of the abstinence-based sex education programs depends on those being coordinated with other efforts to discourage smoking and drinking.** The greatest increases in smoking and drinking occurred among the youngest students. So there is evidence that **these coordinated efforts need to start very early on in school if they are to be successful.**

Finally, future evaluations of this type should focus on getting a comparison group of students to put into a better context the changes that occur over time. Now that it has been demonstrated that it is possible to follow students over the course of a year, and to match their data while preserving their anonymity, it would be worth investing the extra effort and finances it would take to have a comparison group as part of the study.

CHOOSING THE BEST
Sample Evaluation Questions
 1995-96

	PRE-TEST	ONE-YR FOLLOW UP
58. Once a teenager has had sex, there is really no reason to stop having sex and wait until marriage.		
Disagree	54.4%	67.6%
Agree	26.2%	13.3%
43. If I had a child while unmarried, I would be better off than I am now.		
Disagree	64.7%	82.7%
Agree	23.3%	3.6%
40. My parents approve of people my age having sex.		
Disagree	61.9%	74.8%
Agree	23.0%	5.8%
34. The best way for me to keep from getting AIDS or some other sexually transmitted disease is to wait until I am married before having sex.		
Disagree	17.8%	10.5%
Agree	72.2%	82.0%
30. Problems that happen to other students when they have sex would not happen to me if I had sex.		
Disagree	52.6%	74.0%
Agree	22.5%	6.5%
27. Sexual urges can be controlled:		
Always	32.5%	51.7%
Never	7.2%	4.8%

¹ Analysis of Pre-/Post-Test attitudinal evaluations, 1993 through 1996, of the *Choosing the Best* program administered by Project Reality throughout Illinois. (See Abstinence Evaluation Report '94-'95, attached.)

² Ibid.

³ Ibid.

⁴ The size of the study is sufficient to produce a statistical error rate of just +/- 1 percent.

⁵ This statistic confirms a previously determined correlation between behavior and attitude. Moreover, this trend is strongly replicated in responses by the full population surveyed, as demonstrated by responses to question #58. (See sample question sheet, page 11.)

⁶ loc. cit.

⁷ Scale built on a group of indicator questions, with higher numbers representing a progressively more positive attitude toward abstinence until marriage.