

A Comparison of Three Pregnancy Prevention Programs

Prepared for
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Children, Adults & Families
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This report provides a comparison of 3 pregnancy prevention programs: Postponing Sexual Involvement (PSI; Howard & McCabe, 1990), Making a Difference (Jemmott, Jemmott, & Fong, 1998), and Students Today Aren't Ready for Sex (STARS; Deck & Heaps, 2004). The report first addresses the 3 programs' differences and relative strengths and weaknesses according to various evaluations conducted to examine the effectiveness of each. The report then offers recommendations regarding the future implementation of these programs. The following 3 questions are addressed:

1. How do the programs compare (evaluation design, sample, etc)?
2. What are the relative strengths and weaknesses of the programs in terms of preventing teenage pregnancies?
3. What do the results suggest in terms of modifying the existing STARS program?

Program Objectives

In general, prevention programs aimed at reducing teen pregnancies have 3 objectives: (a) to increase the age of first sex, (b) to increase the use of condoms and other contraceptives, and (c) to reduce teen pregnancy (Kirby, 2001). Although all 3 programs examined in this report aimed to prevent teen pregnancy, each was designed with slightly different goals. Making a Difference promoted abstinence as a means of preventing pregnancy and HIV/STDs and fostered personal and community pride (Jemmott et al., 1998). PSI focused on delaying first sex, reducing sexual activity among students who were already sexually active, and encouraging sexually active students to use contraception (Howard & McCabe, 1990). STARS was based on the PSI program, but its goals were to promote abstinence as a means of preventing teen pregnancy, STD/STI, and HIV infection and transmission; to increase student knowledge about sexuality, media influences, and peer norms; and to foster healthy responses to peer pressure (Deck & Heaps, 2004). Although STARS did not include information about contraception for those students who were already sexually active, students requesting information about contraception were referred to the appropriate community resource.

Program Implementation

The 3 programs also differ somewhat in terms of the number and length of the program sessions. Making a Difference comprised two 4-hour sessions (outside of class time). PSI, in contrast was conducted during class time over the course of 2 years. During Year 1 students in Grade 7 attended eight 45-minute sessions, 3 of which covered reproductive health and 5 of which covered the PSI modules. During Year 2 the same students attended the 3 reproductive health sessions again and attended other sessions on a voluntary basis. The STARS program delivered 5 sessions (based on the PSI modules) during the course of 1 school year.

Sample

The program evaluations used to compile the current report were conducted on samples representing slightly different populations of adolescents. Making a Difference was delivered to urban, low-income, African American students in Grades 6 and 7. PSI was delivered to inner-city students in Grades 6 and 7, a majority of whom were African American. STARS was delivered to Grade 6 students, a majority of whom were White, in a variety of urban and rural settings. No information on family income status was gathered for the STARS evaluation.

High percentages of the adolescents in the Making a Difference and PSI samples had already had sexual intercourse. Of the 659 respondents to the Making a Difference preintervention questionnaire, 25% reported having had sexual intercourse and 15% reported having had sexual intercourse in the previous 3 months (Jemmott et al., 1998). Similarly, 25% of the 536 student participants in the PSI program reported having had sexual intercourse (Howard & McCabe, 1990). In contrast, the majority of the students who participated in the STARS program evaluation indicated that they had not been pressured to become sexually involved. In addition, a majority of the STARS students indicated on the preintervention measure that they wanted to wait until they were older to have sex (Deck & Heaps, 2004). Although the STARS evaluation did not collect information on whether or not students were sexually active either pre- or

postintervention, it appears likely that very few of the students had ever had sexual intercourse.

Evaluation Design

The evaluations of the 3 programs differed considerably, both in terms of design and outcome measures (see Table 1). The evaluation of Making a Difference employed the most controlled design—an experimental design that randomly assigned students to either the prevention program or a health promotion control group. This type of design affords the greatest ability to attribute changes in behavior to the prevention program itself while minimizing uncontrolled factors. Program outcomes focused on behavioral measures (sexual activity and contraception use). Surveys were conducted at baseline; immediately after the program; and at 3, 6, and 12 months after the program.

The PSI evaluation matched 6 schools on racial/ethnic composition and class size to form 3 pairs of schools. The schools in each pair were then randomly assigned to the PSI program group or to a control group that received no intervention program. The outcome measures focused on 4 areas: delay of sexual activity, contraception use, perceptions of peer activity, and knowledge of reproductive health. Surveys were conducted at baseline, the end of Year 1, the beginning of Year 2, and the end of Year 2. The program followed the academic school year; the baseline survey was conducted at the beginning of Grade 7 and the final survey was conducted at the end of Grade 8. In evaluating the effects of the PSI program, students were divided according to gender to ascertain differences in outcomes for males and females.

Table 1
Program Comparison: Design and Outcomes

| Goals | Sessions | Population | Observations | Outcomes (Compared to Control Group) |
|--|---|---|---|--|
| PSI | | | | |
| <ul style="list-style-type: none"> ▪ Delay onset sexual activity ▪ Reduce sex activity ▪ Encourage contraceptive use | <p>All sessions 45 minutes in classroom setting:</p> <p>Year 1</p> <ul style="list-style-type: none"> ▪ 3 reproduc- tive health ▪ 5 PSI modules <p>Year 2</p> <ul style="list-style-type: none"> ▪ 3 reproduc- tive health (45 min) ▪ 8 voluntary group discussions | <ul style="list-style-type: none"> ▪ Inner city ▪ Grades 7–8 ▪ African American | <ul style="list-style-type: none"> ▪ Baseline ▪ End Grade 7 ▪ Beginning Grade 8 ▪ End Grade 8 | <p>Year 1</p> <p><i>Females</i></p> <ul style="list-style-type: none"> ▪ More likely to use contraception ▪ More likely to delay sex ▪ Lower expectations of sexual activity (in next 6 months) ▪ Lower perceptions of peer sexual activity ▪ Better able to refuse sex w/boyfriend ▪ Greater knowledge of reproductive health services <p><i>Males</i></p> <ul style="list-style-type: none"> ▪ Greater knowledge of contraception ▪ Better attitudes to postpone childbearing ▪ Lower perceptions of peer sexual activity <p>Year 2</p> <p><i>Females</i></p> <ul style="list-style-type: none"> ▪ More likely to use contraception <p><i>Males</i></p> <ul style="list-style-type: none"> ▪ Greater knowledge of contraception |
| Making a Difference | | | | |
| <ul style="list-style-type: none"> ▪ Abstinence to prevent HIV/STD & pregnancy ▪ Foster personal/ community pride | <p>▪ 2 4-hour sessions outside classroom</p> | <ul style="list-style-type: none"> ▪ Low income ▪ Urban ▪ Grades 6–7 ▪ African American | <ul style="list-style-type: none"> ▪ Baseline ▪ 3-month ▪ 6-month ▪ 12-month | <p>3-month</p> <ul style="list-style-type: none"> ▪ Less likely to have had sex for first time <p>12-month</p> <ul style="list-style-type: none"> ▪ Higher frequency condom use |
| STARS | | | | |
| <ul style="list-style-type: none"> ▪ Abstinence to prevent HIV/STD & pregnancy ▪ Increase student knowledge (sexuality, peer norms) ▪ Foster healthy attitudes toward peers, peer pressure, increase refusal skills | <p>▪ 5 sessions in class room setting</p> | <ul style="list-style-type: none"> ▪ Grade 6 ▪ White | <ul style="list-style-type: none"> ▪ Baseline ▪ 4-month | <p>4-month</p> <ul style="list-style-type: none"> ▪ Greater knowledge of sexual behavior ▪ Lower perceptions of peer sexual activity ▪ Increase attitudes about abstinence |

The STARS program evaluation employed a 2-stage stratified sample design. In Stage 1 the schools delivering the STARS program were selected; in Stage 2 the students were selected. Schools that had already delivered the STARS program were compared to schools that had not yet delivered the program. The outcome measures focused on student knowledge of sexual behavior and the consequences of sexual behavior, ability to respond to peer pressure to have sex, attitudes toward abstinence, and intentions to remain abstinent. Surveys were conducted at baseline and 4 months after the completion of the program.

Program Outcomes

The Making a Difference evaluation revealed that at the 3-month follow-up students who had participated in the prevention program were less likely to report having had sex for the first time than were students who had participated in the health promotion program. In addition, students who had participated in Making a Difference reported a higher frequency of condom use 12 months after program participation than did students who had participated in the health promotion program.

The PSI results indicated that the program had a slightly greater impact for females than for males. After Year 1 of the PSI program, participating females were more likely to delay sex, had lower expectations of sexual activity over the next 6 months, had lower expectations of peer sexual activity, had greater knowledge of reproductive health services, and were more likely to be able to refuse sex with a boyfriend. In addition, females who participated in the PSI program and were already sexually active were more likely to use contraception at all follow-ups than were females who did not participate in the program. Males who participated in the PSI program had greater knowledge of contraception, had better attitudes toward postponing childbearing, and were more likely to report that few boys their age were having sex than were males who did not participate in the PSI program. The results of evaluation activities conducted after Year 2 of the PSI program indicated that females who had participated in the program were more likely to use contraception, were better able to refuse sex with a boyfriend, and had a greater knowledge of reproductive health services than females

who had not participated in the program. Males who participated in the PSI program had greater knowledge of contraception than males who did not participate.

The STARS evaluation indicated that students who had participated in the program had greater knowledge of pregnancy prevention, had greater knowledge of the consequences of sexual behavior, and perceived that fewer students their age were having sex than students who had not yet participated in the program. In addition, after participating in the STARS program, students had more favorable attitudes towards abstinence, a greater understanding of how to respond to pressure to have sex, and greater intentions to remain abstinent. Unlike the evaluations of Making a Difference and PSI, the STARS evaluation did not measure whether students were sexually active either before or after the intervention.

Each of the 3 evaluations provides some evidence that the target program was effective. The programs were not, however, directly compared. Furthermore, the differences in the target populations, evaluation designs, and outcome measures preclude strong conclusions about relative effectiveness.

Effective Program Indicators and Guidelines

Past reviews of pregnancy prevention programs have suggested characteristics that indicate an effective program. Kirby (1984) suggested that influencing knowledge alone is not effective in influencing behavioral changes. Rather, in evaluating prevention programs for younger students, researchers and evaluators alike point to the programs' ability to impact skills or attitudes as the preliminary indicator of effectiveness (Card, Niego, Mallari, & Farrell, 1996). More specifically, the Program Archive on Sexuality, Health, and Adolescence (PASHA) recommends that programs delivered to younger teenagers (15 years or younger) be evaluated according to their positive impact on sex or HIV/STD-related refusal or negotiation skills, intentions, values, and attitudes—sexual protective factors identified in previous research.

Both PSI and STARS succeeded in positively impacting these factors. At the end of Year 1 of PSI, females who participated in the program exhibited gains in refusal skills

and lowered perceptions of peer sexual activity, whereas males exhibited gains in attitudes toward postponing childbearing and lowered perceptions of peer sexual activity. STARS also demonstrated advantages in terms of its impact on refusal skills, intentions, and attitudes. Specifically, students who participated in the STARS program exhibited more favorable attitudes toward abstinence, greater intentions to remain abstinent, and lower perceptions of peer sexual activity 4 months after program participation. Making a Difference was effective at increasing the age of first sex and condom use, but the program's impact on refusal skills, intentions, and attitudes is unknown.

Each of the 3 prevention programs discussed in this report appear to be effective, although as time between program implementation and evaluation increases, the effects appear to diminish. For instance, the Making a Difference evaluation indicated that students who participated in the program were less likely to have had sex for the first time 3 months after the program, but 12 months after the program the only significant effect was a higher use of contraception. Female participants in the PSI program exhibited positive outcomes at the end of Year 1, but at the end of Year 2 the only sustained effect for females was the increased likelihood of contraception use. Likewise, male participants in the PSI program exhibited better attitudes toward postponing childbearing and lower perceptions of peer sexual activity at the end of Year 1, but at the end of Year 2 the only sustained effect for male program participants was greater knowledge of contraception. For the PSI program, the effects might be due to the 3 reproductive health sessions that were delivered in both Years 1 and 2. Participation in the PSI modules was required only during Year 1; in Year 2 these sessions were voluntary. Thus fewer students might have attended the voluntary sessions, thereby weakening the program's effect on longer term outcomes such as attitudes and delaying sex.

The STARS program surveyed students 4 months after program implementation and found favorable effects. Ascertaining the longer term effects of the program is, however, impossible. One way to examine further the effectiveness of STARS would be to add longer term follow up measures.

Recommendations for Improvement

Kirby (2001) provided 10 guidelines for effective teen pregnancy prevention programs. The programs described in this report appear to meet all of the guidelines with the exception of program length (see Table 2).

Kirby recommended that programs last longer than several hours, specifying that programs that last 14 or more hours and employ a greater number of activities have greater effects. Increasing the amount of time students are exposed to the prevention modules is one way in which the programs described in this report could be improved. STARS, for instance, includes only 5 sessions. Expanding these modules might lead to stronger outcomes.

Although virtually no research on the effects of pregnancy prevention program booster sessions has been conducted, adding booster sessions to the existing modules might also help to sustain outcomes over a longer period. Research on other types of prevention programs aimed at adolescents in the areas of drug abuse (Botvin, 1998), smoking (Murray, Pirie, Luepker, 1989), and eating disorders (Grave, De Luca, Campello, 2001) has found that booster sessions can help to maintain and enhance prevention efforts over the long term. An examination of the potential effects of adding booster sessions to the existing program modules would be useful, and if they prove to be helpful in sustaining long-term effects, the findings would help to fill this gap in the prevention field.

Table 2
Guidelines for Effective Pregnancy Prevention Programs

| Guideline | PSI | Making a Difference | STARS |
|---|--|---|--|
| Specific focus on behavior | Delay first sex | Abstinence | Abstinence |
| Theoretical basis | Social Inoculation Model | Social Cognitive Theory Theory of Reasoned Action Theory of Planned Behavior | Social Inoculation Model Social Learning Theory |
| Provide clear messages | Adolescents can and should postpone sexual activity | Abstinence is only certain way to prevent pregnancy and HIV | Best for teens not to have sex |
| Provide basic information | Consequences of sexual involvement, media, and peer pressure | Consequences of sexual involvement, why teens have sex | Consequences of early sexual involvement, media influences, how to resist peer pressure |
| Address peer pressure | Identify and resist peer pressure | How peer pressure affects decisions about sex | Why peer pressure is difficult to handle and how it affects decisions about sex |
| Teach communication skills | Practice how to resist pressure to have sex | Discuss ways to respond and participate in role playing | Learn and practice assertiveness skills to resist pressure |
| Interactive activities | Games, skill practice | Games, activities | Games, skill practice |
| Reflect age, sexual experience, culture | Focus on knowledge, attitudes, and skills to reflect young age of participants | Focus on goal identification and how having sex may prevent goal achievement, personal and community pride | Focus on knowledge, attitudes, and skills to reflect young age of participants |
| Last longer than several hours (14+)^a | Min 8.25 hrs | 8 hours | 5 hours |
| Carefully select & train leaders | Adult group leaders with two days training. Teen leaders (11 th -12 th grades) with 30 hours of training over four days and monthly after school meetings. | Facilitators had prior experience working with youth. Adult facilitators received two and a half days of training. Peer facilitators received seven days of training. | Classroom facilitators received one day of training. Teen leaders (10 th -12 th grades) received 16 hours of training. |

Note. Guidelines based on Kirby (2001).

^aPSI, Making a Difference, and STARS appear to meet all 10 guidelines with the exception of program length. Kirby recommends that programs last longer than several hours, preferably 14 hours or more.

Further Considerations in Selecting Appropriate Programs

When considering which program to adopt or promote, the question is not whether the program is effective, but whether it is effective in the setting in which it will be implemented. Comparison of the 3 programs described in this report resulted further considerations, including these:

- *Is the delivery strategy appropriate?* Making a Difference was implemented and evaluated as a community-based program outside of the school setting. Both PSI and STARS were school-based programs that were delivered and evaluated within a classroom setting. Although it is possible that Making a Difference could be effective as a school-based program, program administrators should be aware that the modules may not translate easily or effectively into classroom sessions.
- *Is the program appropriate for delivery to the target population?* When judging the appropriateness of the program, program administrators should select programs that have been shown to be effective with similar groups of students. For instance, both Making a Difference and PSI had been shown to be effective with relatively homogenous groups of adolescents in terms of race, family income status, and city of residence. In addition, these programs were shown to be effective with adolescent samples of which a relatively high percentage were sexually active prior to program participation. These programs would likely translate well when implemented with similar populations (i.e., urban, low-income students at high risk for early onset of sexually activity), whereas they may not be as effective with other populations (i.e., rural, middle or upper class, culturally heterogeneous students at low risk for early onset of sexually activity).

Thought should also be given to the costs and practical implementation requirements, but information on these issues was not available for this review.

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