

An Evaluation of a Three-Year Abstinence Education Program in Southeast Alabama

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Abstract

This paper summarizes an evaluation of a three-year school-based abstinence education program that was taught in 21 public schools to eighth- and 10th grade students in Southeastern Alabama between 2003 and 2005. The abstinence education curricula utilized with the students were *Choosing the Best* and *Navigator* programs. A 76-item testing instrument, the Abstinence in Motion (AIM) Assessment Survey, was developed to evaluate changes in participants' attitudes prior to and after the intervention. The research design utilized for this study was a pretest-posttest control group design with three schools serving as the control group. Results indicated that age, gender, family structure and socioeconomic status had a significant effect on changes in attitudes towards abstinence. Implications for school counselors are discussed.

Introduction

For the past several years in the United States, there has been a trend towards teaching sexual abstinence to adolescents as a means of controlling teen pregnancy and the spread of sexually transmitted diseases. A recent survey of high school teachers (Darroch, Landry, and Singh, 2000) indicated that respondents identified abstinence from sex as the most important message to be delivered in sex education programs. According to the same survey, seven out of ten teachers believed that students who

receive abstinence education are less likely to have sexual intercourse before marriage.

These beliefs appear to be shared by the Bush administration as well. The federal government is very supportive of abstinence only education and in the 2007 proposed budget added an additional \$22 million over 2006 in spending on these programs to total \$204 million. These funds are being used in Community-Based Abstinence Education and on abstinence only grants to states, which have grown 465% in funding since 2001. ("New Abstinence-Only Guidelines, Funding Increases Denounced" 2006)

In addition to the funds being spent on abstinence education, a great deal of school time and resources are being used to present this message to students. According to Darroch, Landry, and Singh (2000), 93% of respondents reported that all students between the 7th and 12th grades receive some form of sex education and that the message of abstinence was gaining popularity. In fact, between 1988 and 1999, abstinence only education increased from being used in only 2% of school programs to being used in 23% of school programs and has since grown even more. A much higher percentage of programs include the message of abstinence as a choice, but also present other choices, such as the use of contraception.

Policy-makers, counselors, and teachers are not the only ones who believe abstinence

13 Abstinence Education

only education is beneficial. Many researchers have attempted to prove that abstinence only educational programs can successfully change attitudes towards sex and, ultimately, lead to a decrease in sexual activity. According to Denny, Young, Rausch, and Spear (2002), their evaluation of the *Sex Can Wait* abstinence education program indicated that older elementary school children performed better on a post-test on measures of knowledge about sex, self-efficacy and positive outlook. Although there were no significant differences found at the middle school level, high school students who participated in the program indicated more positive attitudes, behavioral intentions, and a lower percentage of non-virgins on a post-test measure.

Other researchers (Wilson, Goodson, Pruitt, Buhi, Davis-Gunnels, 2005) reviewed 21 different programs that promote abstinence including curricula such as *Choosing the Best, Worth the Wait*, and *Love for Life*, among others. After examining factors such as the length of the programs, their target audiences, presentation materials, and outcome measures, these researchers concluded that 12 of these programs received an above average rating and showed a positive effect on adolescents' attitudes and sexual behavior. This conclusion is also similar to that of Toups and Holmes (2002) who stated that their studies consistently indicated that abstinence-based sex education programs were effective in changing teenagers' attitudes regarding their involvement in sexual behavior.

Despite many researchers' positive appraisal of abstinence only education, there is still a debate with regard to its effectiveness. In 2001, the U.S. Surgeon General stated that

more research was definitely needed in order to determine whether or not these types of programs are effective. One reason that more research on this topic is needed is the lack of competent evaluation of abstinence only educational programs (Smith, Steen, Spaulding-Givens, Schwendinger, 2003). Given the many flaws present in typical program evaluations, Smith et al. report that it is difficult to determine program effectiveness. In order to truly assess the effectiveness of these efforts, more attention should be paid to evaluation design.

Even the popular media is questioning the idea of whether or not abstinence only programs are effective. *Newsweek* magazine published a cover story entitled "Choosing Virginity" (Ali, Scelfo, Downy, Juarez, 2002) that described the experiences of several teens who had participated in an abstinence only education program. Despite its popularity, many researchers believe that other options should be presented when covering sex education in schools. According to a survey of American School Board subscribers, three out of four respondents believed that abstinence only education is unrealistic for today's teens who may already be having sex. Instead, they proposed that schools offer a comprehensive sex education program that covers abstinence as well as other choices. ("Give Students The Knowledge To Make Wise Choices About Sex" 2006)

Given the mixed results on the effectiveness of abstinence only education, it appears that more research needs to be done to determine its effectiveness. The current study was designed to measure the effectiveness of a three-year abstinence based intervention program with 8th and 10th grade participants

in a five county demographic area in Southeast Alabama. Specifically, the evaluation measures the six performance areas of the Special Projects of Regional and National Significance (SPRANS) grant to include (a) the percentage of students who successfully complete the program, (b) attitudes towards abstinence; (c) refusal skills; (d) social, psychological, and health gains from abstinence; (e) commitment toward remaining abstinent until marriage; and (f) avoidance of risk behaviors such as drug and alcohol consumption.

In an effort to further analyze the abstinence only education program in Southeast Alabama, the following three research questions were developed:

1. Does the abstinence until marriage education intervention result in attitudinal changes?
2. Does the abstinence until marriage education intervention increase student knowledge of at-risk behaviors?
3. Does the abstinence until marriage education intervention result in a commitment to remain abstinent until marriage?

Method

Participants

Participants for the Abstinence in Motion (AIM) evaluation study were 8th and 10th grade students from public and private schools in five counties in Southeast Alabama. Twenty-one schools participated in the three-year study, 2003-2005.

Curriculum

The abstinence curriculum intervention utilized with 8th and 10th grade students for

year one of the project was the *Choosing the Best* program. The six session curriculum presented the following topics: (a) Deciding on Your Future, (b) Figuring Out Friendships and Relationships, (c) Avoiding Unhealthy Relationships, (d) Identifying the Risks of Teenage Pregnancy and STD's, (e) Choosing the Best WAY – why students should be abstinent until marriage, and (f) Learning How to Say NO – learning how to stand up for decisions and withstand peer pressure. For years two and three of the AIM project, the *Navigator* curriculum was added for 10th grade students. This curriculum included the following topics: (a) Future Goals and Dreams, (b) Seeing Media Clearly, (c) Sexual Decision Making, (d) Avoiding the Obstacles of Sexual Transmitted Diseases, (e) Resisting Pressure: Alcohol, Tobacco and Other Drugs, (f) Survival Skills, (g) Developing Relationships on My Journey, and (h) Preparing for a Future: Marriage and Family. Both curricula were taught by trained AIM teachers. These programs included videos, hands-on exercises, teaching components, student manuals homework, interviews with parents, and character development. Real life teen vignettes and student manuals were utilized in this abstinence based curriculum.

Testing Instrument

A 76-item testing instrument, AIM Assessment Survey, was developed by a counselor educator to evaluate 8th and 10th grade participants. The first ten items on the testing instrument requested demographic information. Test items 11 through 73 are a Likert scale design with five response choices ranging from (1) strongly disagree to (5) strongly agree. These items consisted of questions relating to the SPRANS perform-

15 Abstinence Education

ance measures and objectives taught to students from the both curriculum. Test items 74 through 76 were yes or no response questions related to a commitment to abstain from sex until marriage, avoidance of drug and alcohol use, and sexual intercourse.

A computer-based readability analysis was conducted to determine the grade level of the language used in the AIM Assessment Survey. A Flesch-Kincaid Grade Level indicated that the survey was written at approximately a 6th grade level (F-K = 6.4). The Flesch Ease of Reading result was 71.3. The AIM Assessment Survey, with a reading level of 6.4, is appropriate for the wide range of reading abilities of 8th and 10th grade participants.

Design

The research design was a pretest-posttest control group design. Twenty-one schools participated in the AIM program. Students from eighteen schools were taught the *Choosing the Best* and *Navigator* curriculums by trained AIM instructors. This group served as the experimental group for the evaluation study. Students from three schools did not participate in the curriculum and this group served as the control group. Due to practical constraints, random assignment to groups was not possible. This was a limitation of the current study. The AIM Assessment Survey was used as a pretest and posttest to evaluate the program.

A factor analysis was conducted on items 11 through 73 from the AIM Assessment Survey to form subscales. After using a varimax rotation, three factors emerged from the instrument. A reliability analysis was

conducted on the three factors and the coefficient alphas were, respectively, .83, .77, and .87. An analysis of the factor loadings suggested that Factor One is related to social values, Factor Two is related to self-esteem and other psychological dimensions, and Factor Three is related to attitudes towards peers, parents, and the future.

A one-way analysis of variance (ANOVA), a multivariate analysis of variance (MANOVA), and t-tests were used to identify any significant differences between experimental and control groups. Frequencies were calculated to report additional grant performance measurement data.

Results

Evaluation of Performance Measures

The first performance measure was the proportion of program participants who successfully completed or remained enrolled in the abstinence education program. For this project, 5037 8th and 10th grade students participated in the AIM sessions over a three-year period. All of the students (100%) successfully completed this educational program.

The second performance measure was the proportion of adolescents who understood that abstinence from sexual activity is the only way to avoid out of wedlock pregnancies and sexually transmitted disease. To assess the program's effectiveness in this area, a frequency distribution was taken from participants who responded to a single item on a questionnaire given at the conclusion of the sessions. Out of all subjects who participated in the AIM program, responses over the three-year period ranged from 75%

- 78% as either “Strongly Agree” or “Agree” to a statement claiming that abstinence is the only certain way to avoid sexually transmitted diseases.

The third performance measure was the proportion of adolescents who indicated an understanding of the social, psychological, and health gains to be realized by abstaining from sexual activity. To assess AIM’s effectiveness in this area, each of the three factors described above was individually analyzed. The first factor identified was related to the social values of the participants. After re-coding responses to negatively phrased questions, a frequency distribution was created to examine the proportion of participants who indicate an understanding of the social, psychological, and health benefits of abstinence. After completing the program, between 62% and 68% of participants responded positively to questions related to social benefits, 70 -77% responded positively to recognizing psychological benefits, and 73-79% responded positively to the health benefits.

The fourth performance measure was the proportion of participants who reported that they have the refusal skills necessary to resist sexual pressure, urges, and advances. To assess the program’s effectiveness in this area, a frequency distribution was taken from participants who responded to a single item on the questionnaire. Out of all subjects who participated in the AIM program, 84 - 87% of participants responded positively to a question that they possess the skills necessary to refuse sexual pressures and advances.

The fifth performance measure was the proportion of adolescents who committed to

abstain from sexual activity until marriage. Our analysis indicated that between 76 and 78% of respondents answered positively to this question after participating in this program.

The sixth and final performance measure was the proportion of participants who intended to avoid situations and risk behaviors such as drug and alcohol consumption which make them vulnerable to sexual advances. After participating in the AIM program, 84 - 90% of respondents indicated that they can avoid these types of situations.

These performance measures support the research questions previously stated. Research Question 1 investigated whether the abstinence until marriage education intervention resulted in attitudinal change. As discussed above, the second performance measure positively responds to this question. Research Question 2 investigated whether the abstinence until marriage education intervention resulted in increased student knowledge of at-risk behaviors. Performance measures three and six provide evidence that student knowledge was increased. Finally, Research Question 3 investigated whether the intervention resulted in a commitment to abstinence until marriage. As the fifth performance measure indicated, between 76 and 78% of participants reported such a commitment.

Additional Analyses

Analysis of Variance

Each year, an ANOVA was conducted to determine the level of significance of any change that took place between the pre-test and the post-test on the three factors

17 Abstinence Education

described above. Each time there were no significant changes between the pre- and post-tests for either the control or the experimental group on the three major factors.

A second ANOVA was conducted each year to examine the possible impact of certain demographic variables. The variables in particular that were analyzed were (a) race, (b) family structure, and (c) religiosity. Students self-identified their race as part of the AIM Project Assessment Survey by selecting the most appropriate from the following: White, African-American/Black, Hispanic, Asian/Oriental or Pacific Islander, and Other (Mixed, Native American, or Other Ethnic Background). Family structure was ascertained by the student's answer to the question, "Who are you living with now?". Choices included both parents, mother only, father only, etc. Finally religiosity was measured by the student's response to "How important is religion in your life?". Valid responses were reported on a Likert-type scale ranging from (1) not important at all to (5) very important.

Each year, a multivariate analysis of variance (MANOVA) was conducted to determine the possible effects of race, family structure, and religiosity as well as group membership (experimental or control) on each of the six Performance Measures outlined in the grant. The results indicate that there were no significant differences between how the program affected different races and levels of religiosity. Each year, family structure was shown to significantly affect Performance Measure Five which is defined as the

proportion of adolescents who stated they could abstain from sex until marriage ($F = 8.775, p < .05$).

A second MANOVA was conducted to examine the three factors identified in our factor analysis and any differences between pre-test and post-test scores with regard to race, family structure, and religiosity. All of these analyses indicated that these variables did not significantly affect the overall outcome of the program as measured by changes in the pre- and post-test responses on these factors.

Overall Mean Comparisons.

Narrowing the scope, t-tests were used to examine individual items on the questionnaire and to compare the mean answers of students before and after the AIM intervention. The same comparison was completed on the control group who did not receive any abstinence training.

Over the three-year period, between 14 and 28 items were significantly different the pre- and post-test for the experimental group, whereas only four to six items had significantly changed for the control group (Table 1).

Several additional t-tests were conducted to compare the mean responses of experimental and control groups on pre- and post-tests. Several significant differences were found. First, for 8th graders, 2 of the 3 factors were

significantly different between administration of the pre- and post-tests for the experimental group. Specifically, Factor One (social values) and Factor Three (attitudes) significantly changed after attending the AIM training program. None of the 3 factors differed in the control group. For 10th graders, none of the factors differed between pre- and post-test administrations. These data suggest that this program is more effective for 8th graders than for 10th graders.

Additional t-tests examined the differences between boys and girls on their pre- and post- test responses. No significant differences were found for any factor for boys. However, all three factors were significantly different for girls. Breaking it down further to analyze the data by grade, two of the three factors were significantly changed for 8th grade girls (Factors Two and Three) but only one of the three factors was significantly changed for 10th grade girls (Factor One). Overall, it appears that this program is much more effective with girls than with boys. Also, younger girls seem to be much more affected by it than older girls.

Discussion

This three-year study suggested several potentially important results. First, it appears that this program is more effective for 8th graders than for 10th graders based on the change from pre-training and post-training responses. From a practical application, it appears that the introduction of AIM training is more effective at an earlier age.

Second, it appeared that the counties that experienced the most dramatic changes from the AIM program were two of the poorest counties included in this study. This was determined by the percentage of children living below the poverty level according to the SPRANS data.

Third, this program appeared to have the most effect with girl participants, with 8th grade girls experiencing more changes than 10th grade girls. Statistically, younger girls experienced more significant changes in social values and attitudes than older girls. Overall, there were no statistically significant changes among boys.

The fourth and final result implied that AIM participants who live in traditional family structures that include both a mother and father experienced more significant changes from this program than did participants from other family structures. Therefore, traditional family support seems to play a notable role in abstinence education.

Several non-significant findings should be mentioned. First, there were no significant changes between pre- and post-tests when religious influences were considered. One possible explanation for this is that there was considerable range restriction for this variable. Specifically, 65% of students indicated that religion was important or very important to them.

A second non-significant finding was there was not a significant difference in program effectiveness based on race. This is a positive evaluation for this program because it was designed to be unbiased with relation to ethnicity or national origin.

19 Abstinence Education

A third non-significant finding is that the student's future orientation did not significantly influence the effectiveness of the AIM program as evaluated by changes in pre-test and post-test responses. This is interesting because one of the major points of the two curricula is that abstinence has a positive effect on obtaining future goals.

A final non-significant finding of interest relates to two variables. These variables are report card grades and extracurricular activities in school and community. Neither had an influence on attitudes, values, and psychological effects of attitudes.

Implications for Counselors

The AIM program was funded by federal grants obtained by a regional hospital in Southeast Alabama. The funding enabled five counties to implement the AIM program in their schools. School counselors in the regional schools served as local coordinators for the AIM program to be provided to their students. School counselors worked with AIM teachers to obtain parent permission for students to participate in the program, selection of a time to implement the AIM program at their home schools, and to assist with survey evaluation of the AIM programs effectiveness. This program is an example of a partnership between schools and a regional health care agency whose purpose was to implement an abstinence education program in Southeast Alabama schools.

Both community and school counselors who are interested in abstinence education programs should utilize all available resources such as local health care agencies,

community-based abstinence education programs, community abstinence advocacy councils and the Alabama Cooperative Extension System. Other resources can be found at the Alabama Department of Public Health website (Retrieved July 6, 2006, from <http://www.adph.org>). Specific information on the AIM Project can be found at <http://www.aimproject.com>.

Overall, this evaluation indicates that the AIM Project has shown success as evaluated by the SPRANS Grant Performance Measures. As supported by our findings that 8th graders experienced more change in values, attitudes, and psychological factors than did 10th graders, school and community counselors planning to implement abstinence programs for teenage pregnancy prevention should consider implementing programs at an early adolescent developmental age. Additionally, the approach to abstinence education should emphasize increasing the effectiveness of changing boys' attitudes. The evaluators of the AIM Project recommend further research that compares these findings with similar programs in other regions. ♦

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21 Abstinence Education

Table 1 Means, Standard Deviations, and T-Test Results: AIM Project Participants (2005)

Item Number	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t	p
Question 11	2.76	1.337	2.35	1.260	7.573	.000
Question 12	2.67	1.251	2.30	1.193	7.337	.000
Question 13	2.23	1.258	2.01	1.134	4.379	.000
Question 14	2.50	1.301	2.26	1.196	4.614	.045
Question 15	3.77	1.174	3.90	1.121	-2.686	.007
Question 16	3.71	1.155	3.93	1.107	-4.585	.000
Question 17	3.54	1.351	3.82	1.229	-5.204	.000
Question 19	3.51	3.31	1.281	3.60	1.217	.000
Question 22	1.72	.953	1.64	.918	2.133	.033
Question 23	1.82	1.026	1.68	.903	3.361	.001
Question 25	3.20	1.29	3.34	1.260	-2.613	.009
Question 26	3.01	1.312	2.85	1.262	2.929	.003
Question 27	2.24	1.139	2.35	1.106	-2.309	.021
Question 28	3.16	1.210	3.28	1.233	-2.307	.021
Question 29	3.57	1.168	3.75	1.138	-3.671	.000
Question 31	4.47	.858	4.39	.925	2.201	.028
Question 33	1.56	.868	1.65	.957	-2.145	.032
Question 35	3.48	1.313	3.62	1.246	-2.588	.010
Question 39	2.18	1.118	2.05	1.050	2.985	.003
Question 40	4.08	1.187	4.21	1.065	-2.685	.007
Question 41	3.31	1.383	3.59	1.281	-4.910	.000
Question 46	2.77	1.161	2.50	1.098	5.586	.000