

RESEARCH ARTICLE

Evaluation of the Wise Guys Male Responsibility Curriculum: Participant-Control Comparisons

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ABSTRACT

BACKGROUND: Although males are often the initiators of teen sexual activity, pregnancy prevention programs generally target females. To address this deficiency, the Wise Guys Male Responsibility Curriculum was developed to be delivered to adolescent males in weekly classroom sessions.

METHODS: Seventh grade participants ($n = 124$) in the Wise Guys program were compared to randomly selected controls ($n = 106$) at pretest (baseline), posttest, and 6-month follow-up data points. Comparisons were made on knowledge of sexual behavior and reproductive biology, knowledge of sexually transmitted disease (STD) transmission, desirable attitudes toward sex and appropriate behavior in sexual relationships; and on limited behavioral outcomes, including initiation of sexual activity, and use of condoms and contraception by sexually active adolescents.

RESULTS: Wise Guys participants demonstrated greater posttest and follow-up knowledge of sex and reproductive biology ($p < .000$), greater knowledge of STD transmission ($p < .000$), and higher rates of desirable attitudes toward sex and appropriate behavior in sexual relationships ($p \leq .013$) than controls. Favorable behavioral changes were also reported among sexually active participants at follow-up.

CONCLUSIONS: The Wise Guys curriculum effectively improves adolescent males' knowledge of sexual behavior and reproductive behavior, and their knowledge of STD transmission, and instills desirable attitudes toward sex and appropriate behavior in sexual relationships. The results also indicate that the curriculum may promote greater condom use and contraception among sexually active males.

Keywords: child and adolescent health; human sexuality; reproductive health; risk behaviors; school health instruction.

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The US teen pregnancy rate continues to be the highest in the industrialized Western world.¹ The most recent data (for 2006) show an increase in teen pregnancies in the United States, along with reported abortions and fetal losses.^{2,3} Rates of sexually transmitted diseases (STDs) among teens are also increasing.^{4,5} Yet, while it is accepted that males are often the initiators of teen sexual activity, pregnancy prevention programs generally target females.⁶ Data from the Youth Risk Behavior Survey (YRBS) conducted by the Centers for Disease Control and

Prevention (CDC) indicate that in some communities premarital sex is common among teenage males, with more than 1 in 4 having their first intercourse before the age of 13.⁷

In 1990, with a grant from the North Carolina (NC) Department of Health, Environment and Natural Resources, The Family Life Council (FLC) implemented a male responsibility program for middle-school age males in Guilford County Schools (GCS).^{8,9} The program pioneered involving seventh, eighth, and ninth grade males in teen pregnancy prevention

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programs, and has since been implemented in over 350 communities in 32 states and the District of Columbia.

An earlier evaluation of the Wise Guys program demonstrated improved knowledge among middle school males exposed to the curriculum.¹⁰ The evaluation reported here is a rigorous comparison of Wise Guys participants to a corresponding group of controls on general knowledge of sexual behavior and reproductive behavior, knowledge of STD transmission, and forming more desirable attitudes toward sex and appropriate behavior in sexual relationships. Comparisons are also made on behavioral outcomes, including initiation of sexual activity, and use of condoms and contraception by sexually active adolescents.

METHODS

Subjects

During the 4-semester period of fall 2005 through spring 2007, the Wise Guys program was delivered to more than 1100 males in Guilford County (NC) Schools (GCS). During that same period, a control group of 225 middle school males was randomly identified for comparison to 394 Wise Guys participants from the same 9 schools who met the criteria for inclusion in this study (see "Study Inclusion Criteria"). Over 90% (90.8%) of these participants attended 4 or more sessions. The analysis reported here is on the 124 male participants and 106 corresponding controls from whom evaluation questionnaires were obtained at all 3 data points, including pretest, posttest, and 6-month follow-up.

Study Inclusion Criteria

Active Parental Consent and Student Assent. Each student was required to have a signed parental permission form on file before being allowed to participate. Parents were provided with opportunities to review the program curriculum and ask questions of Wise Guys staff before giving their permission. All participants in Wise Guys were informed that their participation was voluntary, and that they could withdraw from participation at any time.

Student Selection. The method of student selection for participation in Wise Guys varied between schools. Students were selected in 1 of 3 ways: (1) a representative mix of students, (2) those classified as "at-risk," (3) peer leaders, or (4) an entire grade level. A representative mix was the most common. Wise Guys educators and school counselors decide on a site-specific basis which method will be used to select students for the program.

Controls were randomly chosen by blind drawing of students' names from a box that contained the names of all students selected for the Wise Guys program in each school. Students designated as controls were offered the opportunity to participate in the program after their pretest, posttest, and 6-month follow-up

data were collected. Participants and controls also received the state-mandated "Healthy Living" Standard Course of Study required for all students.

Instruments

Outcome Data

Variables. The Wise Guys evaluation form included general knowledge items that assessed knowledge of sexual behavior and reproductive biology, STD knowledge items that assessed knowledge of STD transmission, attitudinal items that assessed attitudes toward sex and appropriate behavior in sexual relationships, and items that elicited self-reported sexual behaviors. These items were identical on the assessment forms for all 3 data points. Responses to additional items on the questionnaires, including those that elicited information about communication patterns about sex, and reasons for not having sex, were not included in this study.

General Knowledge

Individual Items. Thirteen items on the evaluation form assessed general knowledge of sexual behavior and reproductive biology. These items varied in their response formats: 8 were true/false items and 5 were 5-point Likert-scale items, which ranged from "Strongly Disagree" to Strongly Agree."

For analysis true/false responses were labeled as "correct" or "incorrect." The Likert-scale items were coded into dichotomous "correct" or "incorrect" outcomes. If the correct response was to agree with a statement, "Strongly Agree" and "Agree" responses were coded as "correct." Similarly, if the correct response was to disagree with a statement, "Strongly Disagree" and "Disagree" were coded as "correct."

Composite Item. The composite general knowledge variable was constructed by summing the number of correct responses to the 13 individual items, then dividing the sum by 13 to obtain a percentage.

STD Knowledge

Individual Items. Eight items on the evaluation form assessed the knowledge of STD transmission. The response format of these items was to place a check next to any of the methods that could transmit STDs. For analysis, responses were labeled as "correct" or "incorrect."

Composite Item. The composite STD knowledge variable was constructed by summing the number of correct responses to the 8 individual items, then dividing the sum by 8 to obtain a percentage.

Desirable Attitudes

Individual Items. Fourteen items on the evaluation form assessed attitudes. These items varied in their response formats: 11 were 5-point Likert-scale items which ranged from "Strongly Disagree" to "Strongly Agree;" and 3 were scenarios where response options were to "Agree" or "Disagree" with the behavior

described. For analyses, the Likert-scale items were coded into dichotomous “desirable” or “undesirable” outcomes. If the desirable response was to agree with a statement, “Strongly Agree” and “Agree” responses were coded as “desirable.” Similarly, if the desirable response was to disagree with a statement, “Strongly Disagree” and “Disagree” were coded as “undesirable.” For the 3 scenario responses, to either “Agree” or “Disagree” with the behavior described, were coded as “desirable” or “undesirable.”

Composite Item. The composite desirable attitude variable was constructed by summing up the number of desirable responses to the 13 individual items, then dividing the sum by 13 to obtain a percentage.

Procedures

Delivery of the Curriculum. The Wise Guys curriculum was delivered in 8-10 weekly classroom sessions averaging 45 minutes by trained Family Life Council Health Educators. The number of sessions was determined in consultation with school principals and counselors. Generally, the same content was covered regardless of the number of sessions, but the time allotted to each subject was adjusted to fit the number of sessions. The content of the curriculum is described elsewhere,⁹ and includes the topics of self-esteem, communication, values, goal setting, puberty, anatomy, reproduction, abstinence, contraception, sexually transmitted infections, healthy relationships, and dating violence.

Evaluation

Test Administration. Pretests were administered during the first Wise Guys session and the posttests were administered during the last session. As students were not required to attend Wise Guys sessions, attendance at the last session when the posttest was administered was not mandatory.

Six-month follow-up tests were administered each semester in specially called sessions. Students who participated in the Wise Guys program during the previous semester were contacted through their school counselors and invited to participate in the follow-up session. Their participation was voluntary, and the study protocol did not allow for repeated contacts. However, snacks were provided as incentives.

As the participation in Wise Guys is voluntary, the protocol for obtaining posttest and follow-up questionnaires does not include contacting students who do not attend the last Wise Guys session (posttest) or the special sessions called to obtain follow-up evaluation questionnaires.

Data Management. The evaluation protocol was designed to ensure that the evaluation process posed no risks to the individual participant. Evaluation forms contained coded identifiers to track participants from pretest to posttests to 6-month follow-up. The key

linking the coded identifiers with student names was kept in a locked file that was not accessible to the evaluators. The completed evaluation forms were maintained in secure locations and were accessible only to the principal investigator or his designee. The computerized database contained the coded identifiers, but not students' names or other personal identifying information.

Data Analysis. The Statistical Package for the Social Sciences (SPSS)¹¹ software was used to analyze the data.

Appropriate statistical tests were used to document associations between variables and to highlight findings in the data. The following analyses were done:

1. Participant-control comparisons across data points on knowledge and attitude change.
2. Regression analyses to identify predictors of knowledge and attitude outcomes across the 3 data points.
3. Item analyses of the individual general knowledge, STD knowledge and attitude questions across data points.
4. Participant-control comparisons across data points on initiation of sexual intercourse, condom use, and contraception.

RESULTS

Demographically the subgroups of 124 respondents and 106 controls included in these analyses were similar to the larger groups from which they were drawn. Participants and controls were racially similar (42.7% and 46.2% non-White, respectively; $\chi^2 = .281$, $p = .596$), and with controls being slightly, but not significantly, older than participants ($\chi^2 = 3.704$, 2 df, $p = .157$), essentially because 9 controls in the subgroup were in grade 8, whereas all the participants were in grade 7. To control for possible confounding by these variables, age and grade were included as independent variables in all the regression analyses.

Outcomes: Knowledge and Attitudes

General Knowledge. Composite general knowledge scores increased among participants from 57.6% on pretest to 77.4% on posttest, and then decayed slightly to 73.6% at follow-up (Table 1(A)). The corresponding scores for controls decreased slightly from 63.5% on pretest to 62.3% on posttest, then increased modestly to 67.3% at follow-up. Only at pretest were the scores for controls higher than those of participants; participants had significantly higher scores than controls at both posttest and follow-up ($p \leq .007$). The pretest to posttest change in scores among participants was significantly greater than the change among controls ($p < .000$).

Table 1. Participant-Control Comparisons of Mean Scores on General Knowledge, STD Knowledge, and Desirable Attitude

Group		Average N	Score (%)	±SD	t	Sig. (2-tailed)
(A) General knowledge						
Pretest	Participants	124	57.6	13.3	2.92	.004
	Controls	106	63.5	16.6		
Posttest	Participants	124	77.4	16.0	6.76	.000
	Controls	106	62.3	17.8		
Pretest to posttest change	Participants	124	19.8	18.9	7.82	.000
	Controls	106	-1.2	21.4		
Follow-up	Participants	124	73.6	17.3	2.71	.007
	Controls	106	67.3	18.1		
(B) STD knowledge						
Pretest	Participants	124	73.2	12.4	2.11	.036
	Controls	106	76.7	12.5		
Posttest	Participants	124	88.4	16.3	7.34	.000
	Controls	106	73.4	14.8		
Pretest to posttest change	Participants	124	15.2	19.0	7.73	.000
	Controls	106	-3.3	17.3		
Follow-up	Participants	124	87.5	16.4	3.89	.000
	Controls	106	79.6	14.4		
(C) Desirable attitude						
Pretest	Participants	124	63.4	17.3	1.62	.107
	Controls	106	59.8	16.3		
Posttest	Participants	124	70.7	18.4	4.54	.000
	Controls	106	60.0	17.6		
Pretest to posttest change	Participants	124	7.3	21.0	2.66	.009
	Controls	106	0.1	19.9		
Follow-up	Participants	124	68.3	18.8	2.51	.013
	Controls	106	62.0	19.2		

STD Knowledge. Composite STD knowledge scores increased among participants from 73.2% on pretest to 88.4% on posttest, then decayed only slightly to 87.5% at follow-up (Table 1(B)). The corresponding scores for controls decreased slightly from 76.7% on pretest to 73.4% on posttest, and increased slightly to 79.6% at follow-up. Only at pretest were the scores for controls higher than those of participants; participants had significantly higher scores than controls at both posttest and follow-up ($p = .000$). The pretest to posttest change in scores among participants was significantly greater than the change among controls ($p = .000$).

Desirable Attitudes. Composite desirable attitude scores increased among participants from 63.4% on pretest to 70.7% on posttest, and decreased to 68.3% at follow-up (Table 1(C)). The corresponding scores for controls increased only slightly from 59.8% on pretest to 60.0% on posttest, and increased further to 62% at follow-up. Scores for participants were higher than those of controls at all 3 data points, but were significantly higher at posttest and follow-up ($p \leq .013$). The pretest to posttest change in scores among participants was significantly greater than the change among controls ($p = .009$).

Regression Analyses

Regression analyses confirmed that participation in Wise Guys significantly associated with higher posttest and follow-up general knowledge, STD knowledge and desirable attitude scores, independent of age, grade, race, or pretest scores. A listing of the variables in the regression equations, with their codings, and a summary of the regression results are given in Table 2.

Participation in Wise Guys was the strongest predictor of general knowledge and STD knowledge scores at both posttest and follow-up, entering the equations as the first independent variable. It was also a significant predictor of desirable attitude scores at both data points, but entered the equations after pretest attitude scores.

Age and grade were not significant predictors of any of the 3 outcome variables, at either posttest or follow-up. However, race was a significant predictor of posttest desirable attitude scores (Whites had higher scores than non-Whites), and also of follow-up general knowledge scores (Whites had higher general knowledge scores than non-Whites).

Item Analyses

Analyses of individual items supported the findings of increased posttest and follow-up scores associated with participation in Wise Guys.

Among participants there were pretest to posttest increases:

1. In all 13 general knowledge items that comprised the composite variable, compared to increases in only 6 items among controls;
2. In 6 of the 8 STD knowledge items that comprised the composite variable, compared to increases in only 2 items among controls;
3. In all 14 desirable attitude items that comprised the composite variable, compared to increases in only 5 items among controls.

Outcomes: Behaviors

Three self-reported behaviors on the evaluation instruments were initiation of sexual intercourse, use of condoms to prevent unplanned pregnancy, and frequency of contraception. However, the low number of sexually active respondents resulted in poor statistical power in the analysis of these responses, so that relatively large percentage differences were not statistically significant.

Initiation of Sexual Intercourse. An affirmative response to the question, "Have you ever had sexual intercourse (made love, gone all the way)?" was interpreted to mean that the student was sexually active. At pretest, just over 16% of the participants and more than 10% of the controls were sexually active (Table 3). However, despite a higher percentage of sexually active participants at all 3 data points, the

Table 2. Variables, Coding, and Summary Results for Pretest, Posttest, and Follow-Up General Knowledge Scores, STD Knowledge Scores, and Desirable Attitude Scores

Variable	Coding	
(A) Independent (predictor) variables in regression statements		
Age	Ordinal ($\leq 12, 13, 14+$)	
Grade	Ordinal (7, 8, 9)	
Race	Dichotomous (1 = non-White; 2 = White)	
Group	Dichotomous (1 = Wise Guys participant; 2 = control)	
Pretest scores	Continuous numeric	
(B) Dependent (outcome) variables in regression statements		
Composite general knowledge scores	Continuous numeric	
Composite general knowledge scores	Continuous numeric	
Composite desirable attitude scores	Continuous numeric	
Dependent Variables	Outcomes	Statistically Significant Predictors (Listed in Order of Entry into the Regression Equation)
(C) Summary of stepwise regression results		
Posttest	General knowledge	1. Participation in Wise Guys 2. Higher pretest general knowledge scores
	STD knowledge	1. Participation in Wise Guys 2. Higher pretest STD knowledge scores
	Desirable attitude	1. Higher pretest desirable attitude scores 2. Participation in Wise Guys 3. Race (Whites had higher desirable attitude scores than non-Whites)
Follow-up	General knowledge	1. Participation in Wise Guys 2. Race (Whites had higher general knowledge scores than non-Whites)
	STD knowledge	Participation in Wise Guys
	Desirable attitude	1. Higher pretest desirable attitude scores 2. Participation in Wise Guys

rate of increase in sexual activity over the study period was nearly identical in both the groups. Participants had a 75% increase (35/20) from pretest to follow-up, and controls an 82% increase (20/11), a rate difference that was not statistically significant ($\chi^2 = 0.19, 2 \text{ df}, p = .95$).

Use of Condoms to Prevent Unplanned Pregnancy.

For the question, “What did you or your partner use or do to stop a pregnancy the last time you had sexual intercourse?” a list of 6 response options was provided. Two of the options included condoms: “used birth control pills with condom (rubber)” and “used a condom (rubber) alone.”

Among sexually active respondents, there was no discernable trend across the 3 data points in the use of condoms among either participants or controls. The

percentages of participants who reported using condoms decreased from 50% at pretest to 38.5% at posttest, while the corresponding percentages of controls increased from 63.6 to 69.2. However, at follow-up the percentage (60%) was the same in both groups.

A higher percentage of sexually active participants than controls (60% vs 28.6%) reported converting to condom use between posttest and follow-up, but because of small numbers this difference was not statistically significant ($\chi^2 = 1.65, 1 \text{ df}, p = .25$). Also, a higher percentage of participants than controls (37.5% vs 25%) who initiated sexual activity after posttest reported using condoms at follow-up, although, again, this difference was not statistically significant ($\chi^2 = 0.453, 1 \text{ df}, p = .50$).

Frequency of Contraception. For the question, “How often have you or your partner(s) used or done something to stop a pregnancy?” a 5-point Likert-like response scale ranging from “never” to “every time” was provided.

Among sexually active respondents there was no discernible trend among either participants or controls in everytime use of contraception. At each data point, including pretest, higher percentages of participants than controls reported everytime contraception (Table 4). The 54.3% of participants who reported using contraception “every time” at follow-up was

Table 3. Respondents With 3 Data Points Who Reported “Ever” Having Had Sexual Intercourse, Guilford County (NC) Males in Study, Grades 7, 8, and 9: Fall 2005 Through Spring 2007

	Numbers and (Percentages) of Respondents Reporting “Ever” Having Sexual Intercourse		
	Pretest	Posttest	Follow-up
Participants (N = 124)	20 (16.1)	26 (21.0)	35 (28.2)
Controls (N = 106)	11 (10.4)	13 (12.3)	20 (18.9)

Table 4. Sexually Active Respondents With 3 Data Points Who Reported Using Contraception Every Time They Have Sexual Intercourse, Guilford County (NC) Males in Study, Grades 7, 8, and 9: Fall 2005 Through Spring 2007

Proportions and (Percentages) Who Reported Using Contraception "Every Time"			
	Pretest	Posttest	Follow-up
Participants	10/20 (50.0)	9/26 (34.6)	19/35 (54.3)
Controls	5/11 (45.5)	4/13 (30.8)	6/20 (30.0)

not significantly higher than the 30% of controls who reported that they also used contraception "every time" ($\chi^2 = 3.04$, 1 df, $p > .05$).

However, at follow-up, a higher percentage of participants who had initiated sexual activity after pretest reported everytime contraception than the comparable group of controls (Table 5). This difference was statistically significant ($p = .01$).

Regression Analyses of Contraception Use. To assess the relative importance of participation in the Wise Guys program for predicting everytime contraception at 6-month follow-up, regression analyses were done using age, grade, race, and participation in Wise Guys as the independent variables. The strongest and only statistically significant predictor of contraception use "every time" was participation in the Wise Guys curriculum. Age, grade, and race were also in the equation, but they were not significant predictors.

DISCUSSION

Adolescent male students who participated in Wise Guys demonstrated increased knowledge of sexual behavior and reproductive biology, increased knowledge of methods of STD transmission, and more desirable attitudes toward sex and appropriate behavior in intimate relationships than a control group composed of students who did not participate in the program. These differences between participants and controls were sustained through the 6-month follow-up period, without booster interventions, and with only small decay effects evident. Furthermore, participation in Wise Guys was a stronger predictor

Table 5. Sexually Active Respondents With 3 Data Points Who Initiated Sexual Activity After Pretest and Reported at Follow-Up Using Contraception Every Time They Have Sexual Intercourse, Guilford County (NC) Males in Study, Grades 7, 8, and 9: Fall 2005 Through Spring 2007 ($\chi^2 = 6.63$, 1 df, $p = .01$)

Proportions and (Percentages) Who Reported Using Contraception "Every Time"	
	Follow-up
Participants	9/15 (60.0)
Controls	1/9 (11.1)

of these knowledge increases and attitude changes than age, race, grade-in-school, or pretest (baseline) knowledge and attitude scores.

Participation in Wise Guys was also associated with desirable behavior changes in relation to use of condoms and contraception by sexually active participants, although the low numbers of sexually active students hampered statistical analysis. A higher percentage of sexually active participants than controls reported converting to condom use between posttest and follow-up, and a higher percentage of participants than controls who initiated sexual activity after posttest reported using condoms at follow-up.

In addition, at posttest and follow-up, higher percentages of participants who had initiated sexual activity after beginning their participation in Wise Guys reported everytime contraception than the corresponding group of controls. The association of participation in Wise Guys with these behavior changes was independent of age, race, grade in school, or pretest knowledge and attitude scores.

Participation in Wise Guys appeared to be associated more strongly with knowledge changes than attitude changes. This might have resulted because the measures of knowledge change used in this study were more precise than the measures of attitude change, or because the curriculum content was more heavily weighted toward knowledge change. However, there is some indication that other factors, such as race, also influence desirable attitudes toward sex and appropriate behavior in intimate relationships, and these deserve further study in the context of classroom-based interventions.

There was no evidence that participants initiated sexual intercourse at an increased rate following their participation in Wise Guys. The overall rate of sexually active students in this study, combining intervention and control groups, was just over 14% (88/619). There are no national data for this age group for comparison. The YRBS obtains data on sexual activity only from high school students.¹² However, the rate of students in this study who reported their first intercourse before age 13 (9.2%) is somewhat lower than the rate for teens (10.1%) estimated from the YRBS.

Limitations

Attrition is a persistent challenge for all longitudinal studies, and generally the longer the study, the greater the attrition.¹³ This reduces the statistical power of the outcome measurements, and could reduce the generalizability of study findings if the continuing participants differ from dropouts in ways pertinent to the outcomes.¹⁴ In this study, incentives were offered to students in the control group to take the pretest and posttest, and to both participant and control students to take the 6-month follow-up evaluation. Yet even with these inducements there was a modest attrition at

posttest and pronounced attrition at 6-month follow-up. As the participation in Wise Guys was voluntary, the protocol for obtaining posttest and follow-up questionnaires precluded contacting students who do not attend the last Wise Guys session (posttest) or the special sessions called to obtain follow-up evaluation questionnaires. Fortunately, there is no evidence that attrition biased the results of this study.

However, in a more general sense, solving the problem of long-term contact is relevant to the effectiveness of educational outreach programs, such as Wise Guys, in that outreach with booster interventions has been shown to be an essential characteristic of successful male programming.^{15,16} The investment of additional resources, including the person-hours needed to track participants, and to provide tangible incentives for participants to respond, will contribute to better follow-up evaluations, and enable programs to more effectively deliver booster interventions.¹⁷

IMPLICATIONS FOR SCHOOL HEALTH

Despite the evidence that parents, students, and teachers overwhelmingly favor sexuality education for adolescent males, efforts by school administrators and health educators to offer such programs have been hindered by the lack of controlled studies that assess the effectiveness of existing programs. With the results of this study documenting the effectiveness of Wise Guys, schools, and communities using the program, either as part of the middle school curriculum or as an after-school activity, have scientific support to continue; others contemplating the program have assessment data to help them reach a decision. These results also suggest that the Wise Guys program may be an effective resource for health educators to utilize in community-based pregnancy prevention and STD prevention programs, broadening the target population of those programs to include adolescent males.

Human Subjects Approval Statement

The study design and protocols for the evaluation of the Wise Guys curriculum reported in this study received expedited review and approval from the University of North Carolina at Greensboro Institutional Review Board, January 2001.

REFERENCES

1. Singh S, Darroch JE. *Teenagers' Sexual and Reproductive Health: Developed Countries, Facts in Brief*. July, 2001. The Alan Guttmacher Institute. Available at: www.guttmacher.org. Updated February 2002. Accessed January 20, 2009.
2. Ventura SJ, Abma JC, Mosher WD, Henshaw SK. Estimated pregnancy rates by outcome for the United States, 1990-2004. *Natl Vital Stat Rep.*, Vol. 56(No 15). Hyattsville, MD: National Center for Health Statistics; 2008.
3. Hamilton BE, Martin JA, Ventura SJ. Births: Preliminary Data for 2006. *Natl Vital Stat Rep*; 2007. Vol. 56, No. 7. Hyattsville, MD: National Center for Health Statistics.
4. Centers for Disease Control and Prevention. *Trends in Reportable Sexually Transmitted Diseases in the United States, 2006*. National Surveillance Data for Chlamydia, Gonorrhea, and Syphilis. Available at: www.cdc.gov/std/stats07. Updated January 9, 2009. Accessed October 30, 2009.
5. Centers for Disease Control and Prevention. *Special Focus Profiles: Adolescents and Young Adults, Sexually Transmitted Diseases Surveillance 2007*. Available at: www.cdc.gov/std/stats07. Updated January 13, 2009. Accessed October 30, 2009.
6. Sonenstein FL. *Young Men's Sexual and Reproductive Health: Toward a National Strategy (Framework and Recommendations)*. Washington, DC: The Urban Institute; 2000. Available at: www.urban.org/FreyaLSonenstein. Accessed October 30, 2009.
7. Centers for Disease Control and Prevention. *Youth Risk Behavior Surveillance—United States, 2007*. MMWR 2008;57.
8. The Family Life Council of Greensboro, Inc. www.flcgo.com. Accessed February 10, 2009.
9. Wise Guys: Male Responsibility Curriculum. Greensboro, NC: The Family Life Council of Greensboro. Available at: www.wiseguysnc.org/curriculum. Accessed February 10, 2009.
10. Philliber A. *Evaluation of the Wise Guys Curriculum*. Accord, NY: Philliber Research Associates; 1996.
11. SPSS 16.0 for Windows. Chicago, IL: SPSS Inc.; 2008.
12. Centers for Disease Control and Prevention. *Healthy Youth, YRBBS, Youth Online. 2007 Sexual Behavior*. Available at: <http://apps.nccd.cdc.gov/yrbbs>. Updated April 9, 2008. Accessed October 30, 2009.
13. Young AF, Powers JR, Bell SL. Attrition in longitudinal studies: who do you lose? *Aust N Z J Public Health*. 2006;30:4: 353-361.
14. Morrison TC, Wahlgren DR, Hovell MF, et al. Tracking and follow-up of 16,915 adolescents: minimizing attrition bias. *Control Clin Trials*. 1997;18(5):383-396.
15. Gruchow HW. *Components That Work in Male Reproductive Health and Education Programs*. Washington, DC: The Male Advocacy Network, Inc.; 2002.
16. Coleman-Wallace D, Lee JW, Montgomery S, Blix G, Want DT. Evaluation of developmentally appropriate programs for adolescent tobacco cessation. *J Sch Health*. 1999;69(8): 314-319.
17. Boys A, Marsden J, Stillwell G, Hatchings K, Griffiths P, Farrell M. Minimizing respondent attrition in longitudinal research: practical implications from a cohort study of adolescent drinking. *J Adolesc Health*. 2003;26(3):363-373.