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Assessing the Long-Term Effects of the Safe Dates Program and a Booster in Preventing and Reducing Adolescent Dating Violence Victimization and Perpetration

Vangie A. Foshee, PhD, Karl E. Bauman, PhD, Susan T. Ennett, PhD, G. Fletcher Linder, PhD, Thad Benefield, MS, Chirayath Suchindran, PhD

Adolescent dating violence is a public health problem.^{1–12} The Safe Dates Project is a randomized controlled trial for testing the effects of a school-based intervention on the prevention and reduction of dating violence among adolescents. Findings reported earlier suggested that 1 month after intervention, Safe Dates prevented and reduced dating violence and positively changed cognitive mediating variables that were based on program content.¹³ One year after the intervention, cognitive risk factor effects were maintained, but behavioral effects disappeared.¹⁴ These findings are consistent with those from prevention trials aimed at other adolescent problem behaviors that measured long-term effects: behavioral effects faded whereas effects on cognitive risk factors persisted.^{15–18}

Three years after Safe Dates was implemented, a booster was implemented with a random half of the original treatment group adolescents. Boosters are intended to reinforce the content of original programs so as to maintain or regain initial program effects. They are typically a briefer version of the original program but with the same theoretical base and are administered at least 1 year after the original intervention. Boosters that have been used with school-based programs for preventing other adolescent problem behaviors have included newsletters followed by telephone contact with the adolescent,¹⁹ magazines handed out to the adolescents in school,²⁰ and a reduced number of classroom sessions.^{21,22} Our booster was a newsletter mailed to the adolescents and a personal contact from a health educator by telephone.

The purposes of this article are to (1) examine the 4-year postintervention effects of Safe Dates on dating violence perpetration and victimization and (2) determine whether the booster improved the effectiveness of Safe Dates. Findings from evaluations of other

Objectives. This study determined 4-year postintervention effects of Safe Dates on dating violence, booster effects, and moderators of the program effects.

Methods. We gathered baseline data in 10 schools that were randomly allocated to a treatment condition. We collected follow-up data 1 month after the program and then yearly thereafter for 4 years. Between the 2- and 3-year follow-ups, a randomly selected half of treatment adolescents received a booster.

Results. Compared with controls, adolescents receiving Safe Dates reported significantly less physical, serious physical, and sexual dating violence perpetration and victimization 4 years after the program. The booster did not improve the effectiveness of Safe Dates.

Conclusions. Safe Dates shows promise for preventing dating violence but the booster should not be used. (*Am J Public Health.* 2004;94:619–624)

adolescent problem behavior interventions support the potential for long-term program effects²³ and booster effects^{20,22,24} even after original program effects have faded. This is the first study to test the long-term effects of an adolescent dating violence prevention program and to test whether a booster prevents adolescent dating violence.

We examined the effects of Safe Dates and the booster on psychological, physical, serious physical, and sexual dating violence victimization and perpetration. Because the effects of programs for preventing other adolescent problem behaviors have been found to vary by gender,²⁵ race,¹⁹ and pre-program involvement in the problem behavior,^{15,20,21,26} we also determined if the effects of Safe Dates and the booster were moderated by these variables.

METHODS

Design

Adolescents were eligible for this study if they were enrolled in the 8th grade in the fall of 1994 in 1 of the 10 public schools in a rural North Carolina county. Baseline data were collected in October 1994 (wave 1) from 85.1% (n=957) of eligible adolescents.

The 10 schools were then matched by school size. One member of each matched pair was randomly assigned to receive either Safe Dates or to serve as a control. Adolescents in the 5 treatment schools were exposed to Safe Dates from November 1994 through March 1995.

Safe Dates included a theater production performed by students, a curriculum comprising 10 45-minute sessions taught by health and physical education teachers, and a poster contest based on curriculum content. Process data suggested high program fidelity in treatment schools.^{13,14} For details on program development, content, and theoretical base, see the 1996 report by Foshee et al.²⁷

Follow-up data were collected from treatment and control adolescents at 1 month (wave 2) and 1 year (wave 3) after Safe Dates was completed. After wave 3, parents of adolescents who provided baseline data collection were recontacted to solicit permission for continued adolescent participation, and 65% (n=620) of the parents consented to have their child do so. Adolescents who had parental consent for continued participation completed questionnaires 2 years after Safe Dates (wave 4), and then the original treatment group adolescents were randomly allocated to

booster and nonbooster conditions. Hence, the study design changed from 2 groups (treatment and control) to 3 groups (treatment only, treatment plus booster, control). Adolescents completed questionnaires again 3 years (wave 5) and 4 years (wave 6) after Safe Dates was completed.

The booster was an 11-page newsletter mailed to the adolescents' homes and a personal contact by a health educator by telephone approximately 4 weeks after the mailing. The newsletter included information and worksheets based on content from the Safe Dates school curriculum. Examples of information presented include red flags that a relationship is abusive, effective communication strategies, and tips for safe dating. Five worksheets were included. As 1 example, in a large paper heart, adolescents wrote down how they want to be treated by dating partners (e.g., respected, listened to, treated equally), and in a circle with a line through it, they wrote how they did not want to be treated (e.g., lied to, threatened, ignored, humiliated). In another example, adolescents considered the short- and long-term consequences of various abusive behaviors for the victims and perpetrators.

Approximately 4 weeks after the mailing, a health educator made a personal contact with the adolescent by telephone. At that contact, the health educator answered the adolescent's questions related to the newsletter, provided additional information when needed, and determined if the adolescent read each informational component and completed the worksheets. The adolescent was mailed \$10 after the health educator determined that the newsletter activities were completed. Approximately 82% of the adolescents assigned to receive the booster read the newsletter and completed the worksheets.

The analyses for this article are limited to the adolescents who completed baseline (wave 1) and both wave 4 and wave 6 questionnaires (n=460). Wave 4 data are required to assess whether booster effects differ by prior involvement in dating violence, and wave 6 data are required to assess booster and 4-year follow-up effects of Safe Dates. Of the 460 adolescents, 201 were in the control group, 124 were in the group that received only Safe Dates, and 135 were in the group that received Safe Dates and

TABLE 1—Baseline Characteristics of the Baseline Sample and the Study Sample: North Carolina, 1994

	Baseline Sample (n = 957)		Study Sample (n = 460)	
	Percentage or Mean	Standard Deviation	Percentage or Mean	Standard Deviation
Female, %	51.20		58.50*	
White, %	72.80		75.60	
Mean perpetration scores				
Psychological	2.15	4.19	1.67	4.11
Physical	0.79	3.94	0.69	3.46
Serious physical	0.19	1.34	0.14	1.15
Sexual	0.06	0.50	0.05	0.38
Mean victimization scores				
Psychological	3.75	6.72	3.30	6.65
Physical	1.40	4.36	1.22	3.87
Serious physical	0.25	1.25	0.21	1.01
Sexual	0.16	0.66	0.17	0.72

Note. Satterthwaite's approximation for the degrees of freedom for the appropriate *t* test was used.

**P* < .01

the booster. The only statistically significant difference between the study sample (n=460) and the 957 8th graders who completed baseline questionnaires was gender; there were significantly more females in the study sample (58.5%) than in the baseline sample (51.2%) (*P*=.01) (Table 1).

Measures

The 8 behavioral outcomes measured, 4 pairs of parallel perpetration and victimization outcomes, were anchored to the previous year. The frequency of perpetrating each of 14 psychologically abusive acts (e.g., "damaged something that belonged to them," "insulted them in front of others") was summed to form a composite score for psychological abuse perpetration. A parallel procedure was used to create a composite score for psychological abuse victimization. The frequency of perpetrating each of 18 physically and sexually violent acts (e.g., "slapped them," "kicked them," "hit them with my fist") was summed to form a composite score for physical violence perpetration. Serious physical violence perpetration was defined by the sum of responses to a subset of 6 serious acts (i.e., choked, burned, hit with a fist, hit with something hard besides a fist, beat up, and assaulted with a knife or gun). Sexual violence was defined by the sum of a subset of 2 acts

(i.e., forced them to have sex, and forced them to do something sexual that they did not want to do). Parallel questions were used to measure physical, serious physical, and sexual violence victimization. Adolescents were asked to report acts perpetrated or received that were not in self-defense.

Attrition Analyses

The outcome in our attrition analysis was whether adolescents who completed a baseline questionnaire also completed wave 4 and wave 6 questionnaires. Our attrition analysis indicated that there were no significant interactions between treatment condition and baseline characteristics when predicting dropout status and that the amount of attrition did not differ for treatment and control groups. Gender and serious physical violence victimization were associated at *P* < .05 with dropout status in both treatment and control groups; males were more likely than females to drop out of the study (odds ratio [OR]=1.69; 95% confidence interval [CI]=1.13, 2.53), and the odds of dropping out decreased with increased serious physical violence victimization (OR=0.51 per unit; 95% CI=0.30, 0.89).

Analysis Strategy

Linear regression models were used to assess Safe Dates' effects and booster effects,

and effect modifiers. Each of the 8 wave 6 outcome variables was regressed on treatment condition (0=control and 1=Safe Dates but no booster), booster condition (0=Safe Dates and 1=Safe Dates + booster), and 4 covariates: gender (0=male, 1=female), race (0=White and 1=non-White), the wave 1 (baseline) value of the outcome variable, and the wave 4 value of the outcome variable. The interactions of the treatment and booster variables with the 4 covariates were included. The interactions with gender and race assessed whether program effects were moderated by gender and race, respectively. The interaction between the wave 1 value of the outcome variable and treatment condition assessed whether the effects of Safe Dates were moderated by prior (i.e., in the previous year) involvement in dating violence. The interaction between the wave 4 value of the outcome variable and booster condition assessed whether the effects of the booster were moderated by prior (i.e., in the year before the booster) involvement in dating violence. Models were reduced using a backward elimination procedure.

When statistically significant interactions remained in the reduced models, we calculated the predicted mean of the outcome for each intervention condition based on the parameters of the reduced models, and then calculated the difference in those predicted means at each level of the moderator variable. For these analyses, prior involvement in dating violence was reduced to 3 strata: no prior involvement, the mean level of involvement (average prior involvement), and the mean level of involvement plus 1 SD (high prior involvement). Statistical tests were computed to determine whether there were statistically significant differences in predicted means between the intervention conditions for each level of the moderator.

RESULTS

We first present results concerning the long-term effects of Safe Dates, followed by results concerning the effects of the booster. For each, we present the effects on perpetration followed by the effects on victimization. Because neither race nor gender moderated either Safe Dates or booster effects on any of

TABLE 2—Reduced Models When Predicting Perpetration of Dating Violence

	Psychological		Physical		Serious Physical		Sexual	
	β	SD	β	SD	β	SD	β	SD
Intercept	2.33**	0.55	0.08	0.53	-0.01	0.17	-0.01	0.05
Treatment (Safe Dates vs control)	-1.07	0.72	-1.11*	0.49	-0.42**	0.16	-0.10*	0.05
Booster (Safe Dates + booster vs Safe Dates)	0.40	0.61	0.70	0.46	0.21	0.14	0.05	0.05
Gender	-0.25	0.42	-0.35	0.35	-0.18	0.11	-0.08*	0.04
Race	-0.18	0.49	-0.22	0.41	-0.07	0.13	-0.02	0.04
Wave 1 outcome	0.04	0.07	0.14**	0.05	-0.02	0.05	-0.00	0.05
Wave 4 outcome	0.13*	0.06	0.02	0.03	-0.01	0.03	-0.05	0.03
Wave 1 outcome by treatment	0.31*	0.14						
Wave 1 outcome by booster	-0.16	0.16						
Wave 4 outcome by treatment	-0.14	0.10						
Wave 4 outcome by booster	0.34**	0.12						

Note. The wave 4 outcome-by-treatment and the wave 1 outcome-by-booster interactions are included in the models as required because of the dummy coding of the treatment and booster variables, but they are conceptually meaningless. Analyses controlled for the correlation between individuals in the same school by using SAS PROC MIXED with school specified as a random effect.

* $P < .05$

** $P < .01$

the 8 outcomes, these interactions are not further considered in this article.

Safe Dates' Effects on Perpetration

As shown in Table 2, adolescents who received only Safe Dates reported perpetrating significantly less physical ($\beta = -1.11$, $P = .02$), serious physical ($\beta = -.42$, $P = .01$), and sexual ($\beta = -.10$, $P = .04$) dating violence perpetration at the 4-year follow-up than those in the control group. Safe Dates' effects on psychological abuse perpetration are moderated by prior (wave 1) involvement in dating violence ($\beta = .31$, $P = .02$). As noted in Table 3, in all 3 strata of prior psychological abuse perpetration, the Safe Dates group reported less psychological abuse perpetration than the control group at follow-up. However, none of those differences were statistically significant. The likely reason for the significant interaction is that the difference in the Safe Dates and control group predicted means is progressively less as prior psychological abuse perpetration status increases.

Safe Dates Effects on Victimization

As shown in Table 4, Safe Dates had a significant main effect on sexual victimization ($\beta = -.23$, $P = .01$) in the expected direction but no effect on psychological abuse victim-

ization ($\beta = -.35$, $P = .68$), and the effects of Safe Dates on physical and serious physical victimization were moderated by prior (wave 1) involvement with the behavior ($\beta = .34$, $P = .02$; $\beta = .59$, $P = .003$, respectively). As noted in Table 3, in all 3 strata of prior physical abuse victimization, the Safe Dates group reported less physical abuse victimization at follow-up than the control group. These differences were statistically significant when prior physical victimization was average ($P = .01$) and high ($P = .002$) and close to significant when there was no prior physical victimization ($P = .07$). The pattern was similar for serious victimization: in all 3 strata of prior serious physical victimization, adolescents exposed only to Safe Dates reported significantly less victimization from serious dating violence than adolescents in the control group did.

Booster Effects on Perpetration

As shown in Table 2, the booster did not improve the effectiveness of Safe Dates in preventing physical ($\beta = .70$, $P = .12$), serious physical ($\beta = .21$, $P = .14$), or sexual ($\beta = .05$, $P = .26$) dating violence perpetration, and prior (wave 4) involvement in psychological abuse perpetration moderated the effect of the booster on psychological abuse perpetration ($\beta = .34$,

TABLE 3—Differences in the Predicted Means on the Follow-Up Outcomes Between Specified Intervention Groups and Significance Levels, Stratifying by Prior Involvement in Dating Violence

Follow-Up Outcome	Prior Involvement ^a		
	None	Average	High
Psychological abuse perpetration			
Safe Dates mean minus control mean	-1.07	-0.86	-0.33
Safe Dates + booster mean minus Safe Dates mean	0.40	0.88	2.02*
Physical abuse victimization			
Safe Dates mean minus control mean	-1.12	-1.53**	-2.74**
Safe Dates + booster mean minus Safe Dates mean	0.42	0.69	1.49
Serious physical victimization			
Safe Dates mean minus control mean	-0.45*	-0.50**	-0.66*
Safe Dates + booster mean minus Safe Dates mean	0.08	0.22	0.82*
Sexual violence victimization			
Safe Dates + booster mean minus Safe Dates mean	0.05	0.14	0.52***

Note: Predicted means for each treatment condition were calculated based on the reduced models in Tables 2 and 4. The differences in predicted means in the treatment conditions are presented in this table.

^aPrior involvement refers to involvement in the same types of dating violence as the follow-up outcome.

* $P < 0.05$

** $P < 0.01$

*** $P < 0.001$

and booster variables were dummy coded, we were able to determine the differences in the predicted means between the control and the booster group from the estimates in Table 2. We determined if those differences were statistically significant using linear contrasts with SAS (SAS Institute Inc, Cary, NC). There were no significant differences between the booster and the control group in follow-up physical ($P=.38$), serious physical ($P=.16$), or sexual dating violence perpetration ($P=.28$). There were also no significant differences between those 2 groups in follow-up psychological abuse perpetration in any of the strata of prior (wave 4) psychological abuse perpetration. Thus, there were no situations in which the booster group reported significantly more perpetration at follow-up than controls.

Booster Effects on Victimization

We first compared the booster to the Safe Dates-only group. As shown in Table 4, there were no effects of the booster on psychological abuse victimization ($\beta=.68, P=.46$), and the effects of the booster on physical ($\beta=.21, P=.05$), serious physical ($\beta=.47, P=.002$), and sexual victimization ($\beta=.50, P<.0001$) were all moderated by prior (wave 4) victimization. As noted in Table 3, in all 3 strata of prior physical abuse victimization, adolescents exposed to the booster reported more physical victimization at follow-up than those exposed only to Safe Dates; however, none of these differences were statistically significant. A similar pattern emerged when considering serious physical and sexual victimization in that in all 3 strata of prior victimization, adolescents exposed to the booster reported more serious physical and sexual victimization at follow-up than adolescents who received only Safe Dates. Those differences were statistically significant only when prior involvement in dating violence was high.

Next we compared the booster to the control group. There were no significant differences between the booster and the control group in follow-up psychological abuse victimization ($P=.70$). Within the strata of prior (wave 4) physical, serious physical, and sexual violence victimization, the only significant differences in the booster and control groups were in serious victimization when there was no prior serious victimization ($P=.05$) and

TABLE 4—Reduced Models When Predicting Victimization of Dating Violence

	Psychological		Physical		Serious Physical		Sexual	
	β	SD	β	SD	β	SD	β	SD
Intercept	3.67***	0.80	0.47	0.64	0.01	0.21	-0.16	0.09
Treatment (Safe Dates vs control)	-0.35	0.86	-1.12	0.62	-0.45*	0.20	-0.23**	0.08
Booster (Safe Dates + booster vs Safe Dates)	0.68	0.91	0.42	0.59	0.08	0.19	0.05	0.08
Gender	-0.46	0.69	-0.48	0.42	-0.11	0.14	0.02	0.06
Race	-1.30	0.80	-0.74	0.49	-0.29	0.16	-0.11	0.07
Wave 1 outcome	0.15**	0.06	0.04	0.08	-0.04	0.08	0.10*	0.04
Wave 4 outcome	0.30***	0.05	0.43***	0.06	0.37***	0.06	0.28***	0.06
Wave 1 outcome by treatment			0.34*	0.14	0.59**	0.20		
Wave 1 outcome by booster			-0.10	0.16	-0.24	0.24		
Wave 4 outcome by treatment			-0.44***	0.08	-0.42***	0.08	-0.28***	0.08
Wave 4 outcome by booster			0.21*	0.11	0.47**	0.15	0.50***	0.11

Note: The wave 4 outcome-by-treatment and the wave 1 outcome-by-booster interactions are included in the models as required because of the dummy coding of the treatment and booster variables, but they are conceptually meaningless. Analyses controlled for the correlation between individuals in the same school by using SAS PROC MIXED with school specified as a random effect.

* $P < .05$

** $P < .01$

*** $P < .001$

$P=.003$). As can be seen in Table 3, those adolescents high in prior psychological abuse perpetration who were exposed to the booster reported significantly more psychological

abuse perpetration at follow-up than those exposed only to Safe Dates ($P=.03$).

Next we compared the booster to the control group. Because of the way the treatment

sexual victimization when there was no prior sexual victimization ($P=.03$). In both cases, those exposed to the booster reported significantly less victimization than controls. Thus, there were no comparisons in which the booster group reported significantly more victimization at follow-up than controls, and in 2 comparisons, the booster group reported significantly less victimization at follow-up than controls.

DISCUSSION

In this 4-year follow-up of Safe Dates, we found significant treatment and control group differences in the expected direction in physical, serious physical, and sexual dating violence perpetration and victimization. Although prior victimization moderated program effects on physical and serious physical victimization, there were statistically significant program effects on those 2 victimization variables at almost all strata of prior victimization. The program was equally effective for males and females and for Whites and non-Whites. Compared with controls, adolescents exposed to Safe Dates reported from 56% to 92% less dating violence victimization and perpetration at follow-up.

It is unlikely that these favorable effects are due to differential attrition, because we found no evidence of greater attrition of high-risk adolescents from our Safe Dates group than from the control group, and the amount of attrition was the same in both groups.²⁸ Because of the long period since program exposure, it is also unlikely that these changes were the result of more socially desirable reporting of the outcomes by the treatment than the control group. A likely explanation for the favorable changes is that Safe Dates caused the changes observed. Long-term effects may have been realized because Safe Dates was offered at the beginning of the adolescents' dating careers (8th grade) and included information and skills that could be incorporated into individual dating practices that continued through the high school years. For example, adolescents were asked to actively consider how they wanted to be treated by their dating partners, they analyzed the negative consequences of being a perpetrator and a victim of dating abuse, they learned ef-

fective ways of communicating with their partners and for dealing with anger toward a partner, and they learned how having unfair gender-based expectations of partners could lead to abuse. Specific to the prevention of sexual dating violence, they analyzed verbal and nonverbal cues that a partner is not ready to have sex, were encouraged to be clear with partners about sexual boundaries, and discussed dating tips for protecting themselves from sexual dating violence and for respecting their partners.

The booster did not improve the effectiveness of Safe Dates. In fact, adolescents exposed to Safe Dates and the booster reported significantly more psychological abuse perpetration and serious physical and sexual victimization at follow-up than those exposed only to Safe Dates, but only when prior involvement in those forms of dating violence was high. It is possible that the booster prompted adolescents who were already being victimized to leave abusive relationships. Studies report that partner violence escalates when victims try to leave the abusive relationship.^{29–31} Boosters, because of their low intensity, may be inappropriate for the secondary prevention of dating violence. Leaving an abusive dating partner can be complicated and dangerous, and adolescents doing so may need support from their family, friends, and community agencies. A booster may motivate a victim to leave the relationship but may need to be paired with additional support to do that safely and successfully.

Boosters have received substantial prominence. For example, both the National Cancer Institute and the Center for Substance Abuse Prevention list boosters as essential and effective elements of adolescent substance use prevention programs.^{32,33} However, only 3 studies on adolescent substance use prevention rigorously evaluated the impact of a booster with an experimental design that allowed assessment of booster effects independent of original treatment effects,^{20,22,24} and there have been no prior studies testing the effectiveness of a booster in preventing dating violence or other forms of youth violence. Our findings suggest that boosters could have negative effects. However, there were no situations in which the booster group reported significantly more

victimization or perpetration at follow-up than the control group.

Attrition is the primary potential limitation of this study. However, as mentioned earlier, our analyses suggest that differential attrition did not threaten the internal validity of the study. It is also unlikely that attrition affected external validity given the similarity of the study sample to the baseline sample, which because of the high response rate should approximate the characteristics of 8th graders in the county. The study sample did have significantly more females than the baseline sample, but given that program effects did not vary by gender, this finding should not reduce the generalizability or external validity of the findings. These findings can be generalized with a fair amount of confidence to other rural counties with similar demographic characteristics. Relative to the United States as a whole, when the study was conducted, the county had an overrepresentation of minority residents, lower-income households, and more individuals with limited education.

Another potential limitation is reliance on self-reports of dating violence. Previous analyses of these data, however, suggest that our measures of dating abuse have high construct validity: they correlate as expected with theoretically based constructs³⁴; also as expected, the prevalence of psychological abuse was larger than the prevalence of physical abuse, which was larger than the prevalence of serious physical and sexual abuse; and the prevalences of the various forms of dating abuse were comparable to those found in other adolescent dating abuse studies.^{2,6} Also, consistent with almost all other studies of adolescent dating violence, gender was not associated with physical dating violence victimization^{1,5,9} or perpetration^{3,6,35} but was associated with sexual dating violence victimization, with females reporting more sexual dating violence victimization than boys.⁹

Safe Dates is being used in many geographically diverse areas, including inner-city urban areas, rural areas, and countries besides the United States. However, the only published evaluations of the Safe Dates program have been in this rural US sample.^{13,14} Future studies are needed to determine the effectiveness of Safe Dates for adolescents living in other locales. Also, from anecdotal reports we know

that the program is not always used in its entirety (the play, curriculum, and poster contest), yet the design of our evaluation did not allow assessment of the effectiveness of individual components. Future evaluations need to incorporate designs that allow assessment of individual components and fewer curriculum sessions.

In conclusion, this is the first experimental study to test the long-term effects of an adolescent dating violence prevention program and to test the efficacy of a booster for preventing adolescent dating violence. Safe Dates reduced dating violence as many as 4 years after the program. The booster did not improve the effectiveness of Safe Dates. Neither gender nor race moderated program effects, but prior behavior moderated some effects. These findings suggest that implementation of the Safe Dates program to reduce dating violence is indicated but that the booster should not be used. ■

About the Authors

Vangie A. Foshee, Karl E. Bauman, and Susan T. Ennett are with the Department of Health Behavior and Health Education and Thad Benefield and Chirayath Suchindran are with the Department of Biostatistics, School of Public Health, University of North Carolina at Chapel Hill. G. Fletcher Linder is with the Department of Sociology and Anthropology, James Madison University, Harrisonburg, Va.

Requests for reprints should be sent to Vangie Foshee, PhD, Associate Professor, Department of Health Behavior and Health Education, 317 Rosenau Hall, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7440 (e-mail: foshee@email.unc.edu).

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Contributors

V. Foshee conceived of the study, supervised all aspects of its implementation, and prepared drafts of the manuscript. K. Bauman assisted with all aspects of designing and conducting the study. S. Ennett contributed to the analysis strategy, presentation of results, and interpretation of the findings. F. Linder managed all aspects of the study. T. Benefield completed all the analyses for the article with direct supervision by C. Suchindran and V. Foshee. C. Suchindran designed the analysis strategy. All authors contributed by conceptualizing ideas, interpreting findings, and reviewing drafts of the article.

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Human Participant Protection

This study was reviewed and approved by the University of North Carolina, School of Public Health, institutional review board for the protection of human sub-

jects. Active parental consent and adolescent assent were obtained from all study adolescents.

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