Evaluation of the Start Strong Initiative: Preventing Teen Dating Violence and Promoting Healthy Relationships Among Middle School Students

Shari Miller, Ph.D.*, Jason Williams, Ph.D., Stacey Cutbush, M.A., Deborah Gibbs, M.P.H., Monique Clinton-Sherrod, Ph.D., and Sarah Jones, M.P.H.

RTI International, Research Triangle Park, North Carolina

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ABSTRACT

Purpose: This study reports on an independent evaluation of Start Strong: Building Healthy Teen Relationships, a multicomponent initiative targeting 11- to 14-year-olds. “Start Strong” was designed to focus on the developmental needs of middle school students and to enhance skills and attitudes consistent with promotion of healthy relationships and reduction of teen dating violence (TDV).

Methods: The quasi-experimental evaluation design included data collection from four Start Strong schools and four comparison schools. Student surveys were collected at four waves of data at the beginning and the end of grades 7 and 8. Multilevel models used repeated observations nested within students who were, in turn, nested within schools to determine whether participation in Start Strong enhanced healthy skills and relationships and decreased TDV-related attitudes and behaviors.

Results: Short-term effects from waves 1 to 2 were statistically significant for increased parent–child communication and boy/girlfriend relationship satisfaction and support and decreased gender stereotypes and attitudes supporting TDV. Findings for acceptance of TDV and gender stereotypes persisted longitudinally.

Conclusions: Results are promising and illustrate that a multicomponent, community-based initiative reduced risk factors predictive of TDV. Start Strong is innovative in its focus on early adolescence, which is a critical period in the transition to dating. The results inform future intervention efforts and underscore the need for further study of middle school students.

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school-based program—“Shifting Boundaries”—included a curriculum and a building-based intervention consisting of increased faculty security in school hot spots and temporary school-based restraining orders [6]. Students in the building-only condition and the combined conditions (both curriculum and building intervention) reported reduced sexual violence victimization by peers or dating partners. Students in the building-only condition reported decreased sexual violence perpetration by peers. Families for Safe Dates consists of booklets with TDV-related activities for parents and teens between the ages of 13 and 15 years. The curriculum led to reductions in physical TDV perpetration and victimization [7]. Another program, “Coaching Boys into Men,” used high school athletic coaches to reduce TDV among their athletes. At 1-year follow-up, athletes receiving the intervention reported less TDV perpetration [8].

This small but growing body of literature reveals a number of gaps. First, with one exception (Shifting Boundaries), interventions were developed and tested with high school students. Yet, the limited empirical base on middle school students reveals TDV rates that are comparable to rates of high school students [9]. Young adolescence is a critical period when early dating affiliations first unfold [10]. Prevention in middle school can disrupt TDV before young teens begin to date or before when behaviors become more severe [11]. Second, interventions to prevent TDV predominate the literature, and little is known about efforts to promote healthy relationships. Third, less is known about the effectiveness of TDV preventive interventions in low socioeconomic urban communities [12]. A final gap is the dearth of multicomponent initiatives, which have shown positive effects for other risk behaviors (e.g., Seattle Social Development Project; Hawkins et al. [13]). Such initiatives have the advantage of targeting multiple contexts and strategies that may be necessary to affect change.

The present study addresses several of these gaps. It reports on an independent evaluation of Start Strong: Building Healthy Teen Relationships initiative (Start Strong; http://startstrong.futureswithoutviolence.org/), a multicomponent initiative targeting 11- to 14-year-olds. Start Strong was designed to focus on the developmental needs of middle school students and to enhance skills and attitudes consistent with promotion of healthy relationships and reduction of TDV. Program elements included (1) implementing school-based TDV prevention curricula; (2) engaging key influencers (parents/caregivers, teachers, other mentors) to help young teens understand healthy relationships; (3) using social marketing strategies; and (4) working on policy and environmental change. One illustration of key influencers was engaging high school students as “ambassadors” who talked about the program’s merits with their younger peers. For social marketing, the sites relied on Facebook to communicate messages about healthy relationships and TDV. Policy changes included efforts to add TDV to existing sexual harassment or bullying policies. Start Strong included several components to address the multiple levels of risk impacting TDV. This approach is consistent with public health initiatives targeting other health-comprising behaviors, such as youth violence (Multisite Violence Prevention Project [14,15]). Sites were permitted to choose either the Safe Dates [16] or the Fourth R [5] curricula [17]. These two curricula were the only available evidence-based programs targeting TDV when Start Strong began. Elements other than the curricula varied, such as parent engagement, social marketing strategies, and policy change efforts. Such elements were defined by sites in accordance with Start Strong’s community-driven focus.

This study focuses on those schools implementing the Safe Dates curriculum with seventh graders to investigate the effects of the initiative. The objectives of this study were to evaluate if Start Strong enhanced healthy skills and relationships (communication and response to anger skills, parent—child communication, quality of boy/girlfriend relationship) and decreased TDV-related attitudes and behaviors (acceptance of TDV, negative gender stereotypes, perceived negative consequences of TDV, TDV victimization, and perpetration).

Methods

Study design

The quasi-experimental evaluation design matched comparison schools to intervention schools on the following criteria: metropolitan area characteristics, school size, percent students on free/reduced lunch, and race/ethnicity. Within the pool of feasible comparison sites, we matched on these variables as closely as possible. Given variability in program components, site-selection criteria were defined to maximize consistency for the evaluation. Criteria included implementation of the same evidence-based curriculum to seventh graders, a minimum of 100 students per grade (for statistical power), and feasibility of participation in the evaluation. Three sites that implemented Safe Dates met these criteria, collectively representing mid sized and large urban areas, racial/ethnic diversity, and regional diversity (one site with two schools; two sites with one school). Across the eight schools (four Start Strong and four comparison) the proportion of students on free/reduced school lunch ranged from 43% to 95%. Student data were collected from middle school students at four time points (waves 1–4): fall and spring of grade 7 and fall and spring of grade 8. Although all the intervention schools implemented Safe Dates, the evaluation assesses the comprehensive initiative because policy, parent engagement, and social marketing components were implemented as well.

Procedures

Students were given a letter from research staff for their parent(s), which explained the study and included a consent form to be returned by the student to school. Students received a $5 gift card incentive for returning the forms regardless of permission status. Teachers who collected 80% of students’ signed parent permission forms, regardless of permission status, received a $40 gift card incentive. Eligibility criteria included being able to complete the questionnaire in English or Spanish, and not being in a self-contained classroom. Surveys were administered in groups during regular school hours using a paper-and-pencil questionnaire. At the beginning of data collection, project staff read an assent script and obtained passive student assent. Procedures were approved by RTI International’s Institutional Review Board.

Participants

A total of 2,626 students were eligible to participate. The overall participation rate was 58% (48%–71% across schools). The sample included 1,517 students (50% male; 23% white; 28% African-American; 32% Latino; and 17% other/multiple races/ethnicities). Approximately 96% of the sample was aged 12 or 13 years at the baseline assessment. As with all longitudinal studies, there was some attrition over time. Across the time points,
overall attrition was approximately 15% (waves 1 to 2, 4.7%; waves 2 to 3, 7.9%; waves 3 to 4, 3.3%). Most attrition was due to students withdrawing from the school (rather than not taking the survey) and was somewhat less common for Start Strong students (odds ratio [OR], .70; 95% confidence interval [CI], .53–.93).\(^1\) Attrition did not vary by gender (OR, .88; 95% CI, .67–1.16). Compared to white students, attrition was more likely in African-Americans (OR, 2.01; 95% CI, 1.33–3.04) and those with other multiple or unreported race/ethnicity (OR, 2.20; 95% CI, 1.40–3.46).

Measures

Students completed measures on TDV behaviors and other constructs shown to be related to these behaviors. Unless noted otherwise, measures were from the original Safe Dates evaluation [4].

TDV perpetration and victimization. We assessed six TDV outcomes (parallel perpetration and victimization scales for three types of TDV: psychological, physical, and electronic). Items were rated on a four-point scale: never, one to three times, four to nine times, and 10 or more times. Reliabilities were evaluated with Cronbach alpha from baseline data.

The psychological and physical TDV scales began with “How many times in the last 6 months have you done these things to a boy/girlfriend?” (perpetration) or “How many times in the last 6 months has a boy/girlfriend done these things to you?” (victimization). Psychological TDV scales included five items each (e.g., “insulted them in front of others” [perpetration]; “insulted you in front of others” [victimization]). Cronbach alphas for psychological TDV scales were \(\alpha = .80\) (perpetration) and \(\alpha = .86\) (victimization). Physical TDV scales were also assessed with five items each (e.g., “pushed, grabbed, shoved, or kicked them” [perpetration]; “pushed, grabbed, shoved, or kicked you” [victimization]). Cronbach alphas for physical TDV scales were \(\alpha = .90\) (perpetration) and \(\alpha = .89\) (victimization).

The electronic TDV items were adapted from existing surveys (Tween Dating Relationships Survey [18]; Youth Internet Safety Survey [19]). Eight items asked “How many times in the last 6 months have you done these things to a boy/girlfriend using a cell phone, e-mail, IM, text messaging, Web chat, a blog, or a networking site like MySpace or Facebook?” (perpetration) and “How many times in the last 6 months has a boy/girlfriend done these things to you using a cell phone, e-mail, IM, text messaging, Web chat, a blog, or a networking site like MySpace or Facebook?” (victimization). Electronic TDV scales were assessed with eight items each (e.g., “showed private or embarrassing pictures/video of them to others” [perpetration]; “showed private or embarrassing pictures/video of you to others” [victimization]). Cronbach alphas for electronic TDV scales were \(\alpha = .86\) (perpetration) and \(\alpha = .85\) (victimization).

Gender stereotypes. Students rated their agreement on 11 statements related to traditional gender norms (e.g., “it is alright for a girl to ask a boy out on a date”; four-point scale ranging from “strongly agree” to “strongly disagree”; \(\alpha = .65\)).

Acceptance of dating violence. Students rated their acceptance of dating violence for 10 items (e.g., “a girl who makes her boyfriend jealous on purpose deserves to be hit”; four-point scale ranging from strongly agree to strongly disagree; \(\alpha = .80\)).

Perceived negative consequences. Students rated their agreement with eight statements about what might happen if they perpetrated violence toward a boy/girlfriend (e.g., “if I hit a boyfriend/girlfriend, she/he would break up with me”; four-point scale ranging from strongly agree to strongly disagree; \(\alpha = .67\)).

Responses to anger. This 12-item scale asked students “In the last 6 months, when you were mad at someone, how often did you do or feel the following things” (e.g., “I screamed at the person I was mad at”; four-point scale ranging from “very often” to “never”; \(\alpha = .69\)).

Communication skills. Students were asked how often they used seven positive communication skills in the last 6 months (e.g., “ask the person how he or she felt”; four-point scale ranging from very often to never; \(\alpha = .85\)).

Parent–child communication about relationships. This 14-item measure was adapted from the Parent–Adolescent Communication Scale that assessed the frequency of communication about sex [20]. Students rated how often in the past 6 months they talked with their parents about relationships (e.g., “what it’s like when you first start liking a boy or girl in a different way than a regular friend”; four-point scale ranging from very often to never; \(\alpha = .90\)).

Boy/girlfriend relationship quality. Relationship quality was measured using four scales from the Network Relationships Inventory [21]. Students rated the quality of their relationship on four 3-item subscales (five-point response options ranging from “none” to “most”): satisfaction (“satisfied with your relationship with this person”; \(\alpha = .91\)), support (e.g., “turned to this person for support with personal problems”; \(\alpha = .86\)), dominance (e.g., “get you to do things his/her way”; \(\alpha = .70\)), and criticism (e.g., “point out your faults or put you down”; \(\alpha = .81\)).

Analysis

Two types of multilevel models were used to evaluate Start Strong effects. Both models used repeated observations nested within students who were in turn nested within schools. First, longitudinal growth models (LGMs) estimated group differences in linear changes over time. The first set of LGM examined short-term effects from waves 1 to 2. Long-term effects were estimated with an LGM that included data from waves 1 to 4. Linear slopes were included in all models. Quadratic slopes were evaluated for the wave 1 to 4 models. However, this added slope component yielded no gain in inference (i.e., conclusions about group differences did not change), and in most cases, this added complexity resulted in computational problems because of overextraction of the data. All models controlled for gender and race/ethnicity at the individual level. Exploratory models found no evidence of differential attrition or response to outcomes. Thus, missing data were assumed to be missing at random [22] and were accommodated by the maximum likelihood estimator in the models [23].

\(^1\) Students enrolled in the study were not followed if they changed to nonparticipating schools.
The growth models yielded four parameters relevant to evaluation of main effects. Data were coded such that model estimates were directly interpretable. The intercept indicated the baseline status of the comparison group; the intervention group estimate captured wave 1 differences between the Start Strong and the comparison groups. The time parameter estimated the change from wave 1 to follow-up (either wave 2 or wave 4) in the comparison group. The group by time interaction estimated the difference in change over time between the intervention and comparison groups. This last parameter, the interaction of group and time, was the primary estimate of intervention effects.

The second multilevel model relaxed the LGM assumption of linear change and instead examined group differences across the aggregated follow-up assessments, controlling for baseline. All models were estimated with SAS PROC GLIMMIX (SAS Institute, Cary, NC) with a normal response distribution for all variables. For LGM, four random effects or variance components were included—random intercepts and time effects at the individual level (i.e., each student could have different slopes and baseline values), and random intercepts and time effects at the school level—to reflect the nonindependence of observations nested within schools. Only school-level random intercepts were included in the aggregate follow-up model.

Results

Short-term results

Table 1 summarizes the model estimates and simple slopes for each of the outcome variables. Short-term effects were statistically significant for parent–child communication and boy/girlfriend relationship satisfaction and support. Parent–child communication decreased significantly in the comparison group, whereas the Start Strong group showed no such decline at wave 2 (interaction $\beta = .10$ [se = .04], $p < .05$). Start Strong students also reported a statistically significant increase in relationship satisfaction and support from waves 1 to 2, whereas comparison students’ reports did not significantly change over time (group-by-time interaction $\beta = .18$ [se = .09], $p < .05$; and $\beta = .19$ [standard error = .09], $p < .05$, respectively). Effects for the dominance and criticism scales were not statistically significant.

Students in the Start Strong schools also reported decreased acceptance of TDV from waves 1 to 2. In contrast, change over time for students in comparison schools was not statistically significant (interaction $\beta = −.15$ [se = .05], $p < .01$). Similarly, negative gender stereotypes decreased to a significantly greater extent among Start Strong students ($\beta = −.08$ [se = .02], $p < .01$) than comparison students.

Rates of change between comparison and intervention conditions were not significantly different for the TDV perpetration and victimization measures. In addition, the rates of change for the overall sample were small and nonsignificant. Groups were not significantly different at baseline on TDV except for electronic victimization, which was significantly lower in Start Strong students (group main effect $\beta = −.06$ [se=.02], $p < .05$).

Long-term results

Table 2 displays model estimates for wave 1–4 effects for linear LGMs. These models showed fewer statistically significant differences by group. Program effects persisted for acceptance of TDV. Start Strong students decreased in acceptance at a greater rate than comparison students ($\beta = −.03$ [se = .01], $p < .01$). Although other constructs showed statistically significant change, their rates of change did not differ significantly between intervention and comparison conditions. As shown by the simple slopes in Table 2, gender stereotypes decreased in both groups; and relationship satisfaction and support both increased over time in program and control students.

Estimates from the aggregated follow-up model are provided in Table 3. Baseline values of all outcomes were highly predictive of their respective aggregated postintervention scores. Two outcomes showed group differences across the full study time frame when the requirement of linear change over time was relaxed. Overall levels of gender stereotypes were significantly lower in the program group ($\beta = −.08$ [se = .03], $p < .05$). The overall postintervention mean stereotype score was .92 for comparison students and .83 for Start Strong participants. Acceptance was also lower in the intervention group.

### Table 1

Wave 1 to wave 2 program effects

<table>
<thead>
<tr>
<th>Model estimates, Est (SE)</th>
<th>Simple slopes, Est (SE)</th>
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<tbody>
<tr>
<td></td>
<td>Group</td>
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<td></td>
<td>Comparison</td>
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<tr>
<td>Intercept</td>
<td>Time</td>
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<tr>
<td>TDV psychological perpetration</td>
<td>0.03 (.04)</td>
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<tr>
<td>TDV physical perpetration</td>
<td>0.07 (.04)</td>
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<tr>
<td>TDV electronic perpetration</td>
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<td>−0.07 (.04)</td>
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<tr>
<td>TDV electronic victimization</td>
<td>0.05 (.03)</td>
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<tr>
<td>Gender stereotypes</td>
<td>0.04 (.01)</td>
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<tr>
<td>Acceptance of dating violence</td>
<td>0.05 (.06)</td>
</tr>
<tr>
<td>Negative consequences</td>
<td>2.34 (.06)</td>
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<tr>
<td>Response to anger</td>
<td>0.06 (.05)</td>
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<tr>
<td>Communication skills</td>
<td>2.03 (.07)</td>
</tr>
<tr>
<td>Parent–child communication</td>
<td>2.24 (.06)</td>
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<tr>
<td>Relationship satisfaction</td>
<td>2.06 (.13)</td>
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<tr>
<td>Relationship support</td>
<td>1.91 (.12)</td>
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<tr>
<td>Relationship criticism</td>
<td>0.05 (.05)</td>
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<tr>
<td>Relationship dominance</td>
<td>0.11 (.06)</td>
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</tbody>
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Est (SE) = Estimate (standard error); TDV = teen dating violence.

*p < .05; **p < .01; ***p < .001.
Wave 1 to wave 4 program effects

Table 2

<table>
<thead>
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<tr>
<td></td>
<td>Intercept</td>
<td>Time</td>
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<td>TDV psychological perpetration</td>
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<td>TDV physical perpetration</td>
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<td>TDV electronic perpetration</td>
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<tr>
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<td>TDV physical victimization</td>
<td>-.05 (.04)</td>
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<td>TDV electronic victimization</td>
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<td>Relationship dominance</td>
<td>.13 (.07)</td>
<td>.00 (.01)</td>
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Est (SE) = Estimate (standard error); TDV = teen dating violence.

Discussion

Results are promising and illustrate that a multicomponent, community-based initiative reduced risk factors predictive of TDV. In the short term, effects were statistically significant for two of the relationship domains. Teen–child communication decreased among comparison students from the beginning to the end of grade 7 (waves 1 to 2). In contrast, parent–child communication remained stable for Start Strong students. Parent–child communication may decrease in early adolescence as young teens individuate and assert their independence. Yet, parents remain an important relationship for youth enter adolescence and are faced with new developmental challenges [24]. Indeed, positive parent–child ties are linked with lower levels of TDV [8,25]. The fact that parent–child communication remained stable for Start Strong, yet decreased for comparisons, suggests the initiative may have disrupted the developmentally normative decrease that occurs in early adolescence [24]. Parent–child communication is a potentially malleable domain that can be added to TDV preventive interventions.

Short-term findings were also statistically significant for support and satisfaction in boy/girlfriend relationships. Other studies have found that caring relationships are linked with lower TDV perpetration and victimization [26]; reduced drug and alcohol use; and emotional problems [27]. Supportive ties in dating relationships serve as a model for partner selection and healthy relationships later in development [28]. These findings emphasize the need for preventive interventions to focus not only on decreasing TDV but also on promoting healthy relationships.

Long-term findings for acceptance of TDV and gender stereotypes persisted longitudinally. These results are particularly encouraging as these factors mediated associations between Safe Dates participation and decreased TDV perpetration and victimization [4]. We speculate that continued and strengthened emphasis on reducing TDV acceptance and gender stereotypes in early adolescence may ultimately decrease TDV over time.

Findings were not significant for TDV perpetration and victimization. It may be that TDV rates for more serious violence are lower in early adolescence. Also possible is that measures used here, which were developed for high school students, may not capture behaviors relevant in early adolescence. Studies reveal that early adolescents engage in “poking and pushing” courtship behaviors to convey dating interest, such as playfully hitting, grabbing, and pushing [29,30]. This poking and pushing may translate to positive responses, thus obscuring possible differences in more aggressive behaviors. The meaning and nature of dating violence among early adolescents may differ. Compared to later adolescence, initial dating affiliations are brief and casual as young teens become comfortable interacting with a potentially boyfriends or girlfriends [31]. Additional work is needed with younger teens to understand TDV and healthy relationship concepts and experiences that are salient during early adolescence. This understanding can inform the development and testing of new measures and potential modification of existing measures.
to ensure that instruments are developmentally relevant for young teens.

This study contains limitations. As with other evaluations of multicomponent initiatives, we cannot identify specific components that led to statistically significant findings. In addition, the consent rates were somewhat low, although they are well within the range of similar school-based studies [32]. Obtaining active consent within school settings can be challenging, particularly in older grades where parents are less involved. A few of the measures displayed somewhat low internal consistency, which may have been due to being developed for older adolescents.

Additionally, only 3 of the 11 grantees were included in the evaluation, and thus, results cannot generalize to all the sites. We still, however, have the asset of a community-based multifaceted initiative with enough stability to assess the sites that were able to be compared. In addition, implementation varied for components other than the Safe Dates curriculum. However, regardless of the implementation variations, the community-based initiative produced these differences. Community-driven initiatives such as Start Strong may promote greater community buy-in from key stakeholders. At the same time, imposing program components may impede ownership by key stakeholders and ultimately decrease the likelihood of sustainability once external funding has ended. This challenge is noteworthy in the TDV field where evidence-based approaches are few in number.

Despite these limitations, this study is noteworthy in its longitudinal evaluation of a multicomponent initiative targeting 11- to 14-year-olds. The Start Strong initiative is innovative in its focus on early adolescence, which is a critical period in the transition to early dating [33]. The results inform future intervention efforts and underscore the need for further study of middle school students.

Acknowledgments

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