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## Evaluation of a Bystander-Focused Interpersonal Violence Prevention Program with High School Students

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### Abstract

This study evaluated the effectiveness of a 7-session, bystander-focused, classroom delivered curriculum (i.e., Bringing in the Bystander—High School Curriculum [BITB-HSC]) in reducing rates of interpersonal violence among high school students. High schools ( $N = 26$ ) were randomly assigned to the treatment or control condition. In classrooms in treatment schools, students ( $n = 1081$ ) completed a baseline survey, participated in the BITB-HSC, and completed an immediate post-test, a short-term post-test (appx. 2 months after intervention) and a long-term post-test (appx. 1 year after intervention). Youth in control schools ( $n = 1322$ ) schools completed surveys at similar time points, but did not participate in the BITB-HSC. Participants were 15.8 years old on average and largely White (85.1%) and heterosexual (84.5%). Students exposed to the BITB-HSC demonstrated significant short-term changes in victim empathy and bystander barriers/facilitators, and long-term changes in rape myths, media literacy, bystander readiness, and knowledge relative to youth in the control condition. Although the BITB-HSC had little long-term impact on actual bystander behavior, there were reductions in some forms of violence among students in the BITB-HSC condition relative to the control condition. Future research is needed to determine if, for whom, why, and in what contexts (e.g., classroom-based versus school wide initiatives) bystander-focused violence prevention initiatives reduce violence.

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<sup>b</sup>Disclosure of Potential Conflicts of Interest

“The authors declare that they have no conflict of interest.”

<sup>c</sup>Compliance with Ethical Standards

“All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.”

## Keywords

dating violence; relationship abuse; sexual assault; prevention; bystander; cluster randomized control trial; high school students; youth

Interpersonal violence is a pervasive problem among high school students in the United States (Centers for Disease Control and Prevention, 2014). Interpersonal violence is conceptualized in the current study to include stalking (pattern of unwanted harassing or threats), sexual harassment (unwanted sexual comments or gestures), sexual assault (unwanted sexual contact), and dating violence (physical or psychological abuse by a dating partner; Centers for Disease Control and Prevention, 2014; Cook-Craig et al., 2014). Researchers have documented the deleterious psychological, physical, social, and academic consequences associated with interpersonal violence (Banyard & Cross, 2008; Edwards, 2015), which underscores the critical importance of prevention. As such, there has been an increasing focus on the primary prevention of interpersonal violence among teens (Banyard, Weber, Grych, & Hamby, 2016; Centers for Disease Control and Prevention, 2016, 2017; Edwards, Neal, & Rodenhizer-Stämpfli, 2017), specifically primary prevention in which all community members to play a role in preventing interpersonal violence (Casey, Lindhorst, & Storer, 2016; Coker et al., 2017; Miller et al., 2012). Often referred to as bystanders (Banyard, Weber, et al., 2016) these community members are individuals who can take action to stop or prevent interpersonal violence from happening, take action after interpersonal violence has happened, and/or work to change community norms to be intolerant of interpersonal violence.

Overall, studies show that bullying prevention programs effectively increase bystander intervention and decrease in bullying behavior among high school students (Polanin, Espelage, & Pigott, 2012; Ttofi & Farrington, 2011). However, compared to bullying prevention, fewer programs have been developed to prevent stalking, sexually harassment, sexual assault, and dating violence among high school students, and only a few prevention initiatives have demonstrated reductions in rates of interpersonal violence among youth (DeGue, 2014; DeGue et al., 2014). Indeed, Safe Dates (Foshee et al., 2005; Foshee & Langwick, 2010), Shifting Boundaries (Taylor, Stein, Mumford, & Woods, 2013), Green Dot (Capilouto et al., 2014; Cook-Craig, 2012), and Coaching Boys into Men (Miller et al., 2012) have demonstrated success in reducing some forms of interpersonal violence abuse among high school students. However, as suggested by the Centers for Disease Control and Prevention, “communities should have a comprehensive menu of effective [interpersonal violence] programs, policies, and practices that allow them to select approaches to meet their unique needs” (p. 5; Centers for Disease Control and Prevention, 2014). Thus, it is important that researchers identify promising relationship abuse and sexual assault prevention strategies and rigorously evaluate those strategies.

One promising prevention program initiative is Bringing in the Bystander® (BITB; Eckstein, Moynihan, Banyard, & Plante, 2013). BITB was created by practitioners and researchers at the University of New Hampshire during the early 2000s to address interpersonal violence among college students. Unlike existing prevention initiatives at the time that frequently

targeted potential perpetrators and victims, BITB focused on training all members of a community to play a role in ending relationship abuse and sexual assault. Specifically, BITB teaches students how to safely and effectively intervene before, during, and after situations of relationship abuse and sexual assault to both prevent and stop these forms of abuse from happening, as well as supporting victims in the aftermath of these experiences. Research suggests that BITB is effective at increasing knowledge and decreasing myths about interpersonal violence (Cares et al., 2015; Moynihan, Banyard, Arnold, Eckstein, & Stapleton, 2011; Moynihan et al., 2015). Moreover, compared to college students who did not participate in BITB, college students who participated in BITB reported engaging in more positive bystander action to prevent relationship abuse and sexual assault one year after participating in BITB (Moynihan et al., 2015).

BITB has been implemented at hundreds of colleges and universities and adapted for other populations, such as the military (Potter & Moynihan, 2011). Most recently BITB was adapted, based on pilot research (Edwards, Rodenhizer-Stämpfli, & Eckstein, 2015), for a high school audience. Bringing in the Bystander—High School Curriculum (BITB-HSC; Leyva & Eckstein, 2015) is grounded in the health belief model (Rosenstock, 1974), transtheoretical model of change (Prochaska & DiClemente, 1984; Prochaska, DiClemente, & Norcross, 1992), theory of planned behavior (Ajzen, 1991), and diffusion of innovation theory (Rogers, 2002). The BITB-HSC is a seven-session curriculum intended to be delivered to a mixed sex audience and is ideally co-facilitated by one facilitator who identifies as male and one facilitator who identifies as female. In the current study, the vast majority of sessions were co-facilitated in this manner. BITB-HSC sessions are delivered in class periods (approximately 45 minutes per session), and include lectures, large and small group discussions, hands-on and experiential exercises, skill building activities, and video segments. The first three modules educate students about stalking, sexual harassment, sexual assault, and dating violence, and how these behaviors negatively impact communities, largely through a media literacy lens. Modules four and five introduce a bystander framework, emphasize participants' roles in creating a healthy community, and teach participants how to recognize interpersonal violence. Modules six and seven teach students to intervene safely and effectively. In addition to student programming, the BITB-HSC includes a 60-minute School Personnel Workshop that trains teachers and other school staff skills to be positive bystanders in situations of adolescent interpersonal violence. In addition, school personnel reinforce the information and skills conveyed in the workshop (for school personnel outcomes see [Edwards, K. M., Sessarego, S., Mitchell, K. L., Chang, H., & Banyard, V. L. (2018). Preventing teen relationship abuse and sexual assault through bystander training: Intervention outcomes for school personnel. *Journal of Interpersonal Violence*. Manuscript under review.]). For an outline of our process outcomes, including adherence and acceptability, please see [<https://www.ncbi.nlm.nih.gov/pubmed/30646828>].

The current paper explores the impact of BITB-HSC on both primary (interpersonal violence perpetration and victimization) and intermediary outcomes (e.g., rape myth acceptance, bystander readiness). Theoretical models (Ajzen, 1991; Prochaska & DiClemente, 1984; Prochaska et al., 1992; Rogers, 2002; Rosenstock, 1974), in conjunction with previous etiological research, indicate key intermediary outcomes for bystander-focused prevention of interpersonal violence. These intermediary outcomes include knowledge, victim empathy

(Ahrens & Campbell, 2000), rape myth acceptance, or the degree to which one accepts false beliefs about sexual assault perpetrators, and victims (McMahon & Farmer, 2011), and media literacy, or the degree to which youth notice harmful portrayals of relationships in the media (Edwards et al., 2018; Manganello, 2008). In addition, these intermediary outcomes include bystander barriers (Edwards et al., 2018) and bystander readiness, an awareness of the problem and the lack of denial about the problem. Bystander readiness is a key part of Latané and Darley's model of what helps bystanders take action (Banyard, 2008; Banyard & Moynihan, 2011). Lastly, a key intermediary outcome is bystander behaviors (Banyard, 2011). Bystander behaviors include reactive behaviors (e.g., speaking up for someone) and proactive behaviors such as talking about prevention or using social media proactively (e.g., blogging about one's unsupportiveness of violence).

In conclusion, the purpose of the current paper is to report findings regarding the efficacy of BITB-HSC in reducing rates of interpersonal violence perpetration and victimization (primary outcomes) as well as how BITB-HSC impacts key intermediary outcomes, specifically: knowledge, rape myths, media literacy, victim empathy, bystander readiness, bystander barriers, and bystander behaviors. We hypothesize that participants receiving the BITB-HSC curriculum, compared to control participants, will report fewer instances of interpersonal violence perpetration and victimization, more knowledge of interpersonal violence, less adherence to rape myths, more media literacy, empathy, and bystander readiness, fewer bystander barriers, and more bystander behavior.

## Method

### Participants

Participants were 2,403<sup>1</sup> high school students in grades 9<sup>th</sup> to 12<sup>th</sup> from 25 schools in northern New England who participated in a cluster randomized control trial to evaluate a bystander-focused violence prevention curriculum (one of the 26 schools dropped prior to baseline data collection). The mean age of participants was 15.8 years (Range 13–19, *SD* = 1.2). Half of students were female (50.9%). The majority of participants identified as White (85.1%), and heterosexual (84.5%).

### Data Collection

Passive parental consent procedures were used for students under 18 years of age. The vast majority (89.7%) of invited students participated in the research. In selected classrooms in treatment schools, students (*n*=1081) completed a baseline survey, participated in the BITB-HSC, and completed an immediate, short-term, and long-term post-test. Youth in selected

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<sup>1</sup>The starting sample was 4,069, but we removed 665 cases (16.34%) due to an inability to match surveys across time points (*n*=625, 15.36%; which would mean that a single participant would be in the data set as different participant across time points or only took the survey once [e.g., due to absence]), two or more mischievous responses (*n*=31, .76%; e.g., wrote in impossible demographics [e.g., age 3], wrote or drew lewd comments and figures, etc.) and/or extreme responses (*n*=6, .15%; e.g., indicated the highest possible response on two or more measures, answering yes to every victimization/perpetration question, saying they intervened every time, etc.), and/or transferring from a treatment to control school or vice versa (*n*=3, .07%; and thus concerns about contamination). Participants excluded from the final sample had a significantly higher proportion of non-White and/or Hispanic, male, sexual minority, older, impoverished students than other students. We also removed 1,001 participants who were surveyed but were not part of the randomized controlled trial (i.e., students in treatment schools who did not receive the program).

classrooms in the control ( $n=1322$ ) schools completed surveys at similar time points, but did not participate in the BITB-HSC.

The baseline/time 1 survey (T1) occurred prior to the BITB-HSC implementation, ranging from immediately before the first session of BITB-HSC to one week prior to the first session of BITB-HSC. The immediate post-test/time 2 (T2) occurred an average of 44.17 days after T1 (Range = 21–109 days), the short-term post-test/time 3 (T3) occurred an average of 97.94 days after T1 (Range = 50–133 days), and the long-term post-test/time 4 (T4) occurred an average of 423.92 days after T1 (Range = 393–481 days). The variability across schools regarding time in between surveys was a result of variability in school calendars and also school cancellations due to weather-related incidents (e.g., snow days) that required a good deal of rescheduling. Time between surveys was controlled for in the analyses. Also, whereas T1-T3 surveys were all done in class via paper and pencil surveys, school administrators were asked to email students who missed T4 inviting them to complete the survey online, and students who had graduated at T4 were asked to take the survey online. Overall, 8.9% students completed the T4 survey online and 45.7% completed the T4 survey via paper and pencil. The T2 survey did not include measures of behavioral outcomes given this was an immediate survey following the completion of BITB-HSC. Whereas surveys administered at T1, T3, and T4 measured past two month behaviors, surveys administered at T1 and T4 also measured past 12 month behaviors. Participants who did at least two time points are included in the analyses.

Figure 1 presents participant enrollment data. Two of the 25 schools did not participate in T4. In general, younger students, girls, and students without histories of violence were more likely than older students, boys, and students with histories of violence to complete the surveys. Regarding comparability of students in the treatment versus control conditions at baseline, youth in the control condition were older, more knowledgeable about interpersonal violence, and had more victim empathy than youth in the treatment. These differences were all adjusted for in the inferential analyses.

## Measures

**Violence victimization and perpetration.**—We used Cook-Craig and colleague’s (2014) measure of victimization and perpetration. An exploratory factor analysis was conducted using 14 items that measure interpersonal violence victimization and interpersonal violence perpetration (one item did not load). Two factors involving 13 items were identified for interpersonal violence victimization, and two factors involving the same mirror 13 items were identified for perpetration. The summarized dichotomized scale scores used in the current paper were sexual harassment and stalking victimization (e.g., “Made you afraid for your personal safety because someone showed up at your home, school, or work”; “Made gestures, rude remarks, or used sexual body language to embarrass or upset you”), sexual harassment and stalking perpetration, sexual assault and dating violence victimization (e.g., “Had sexual activities when you did not want because you were drunk or on drugs, “Threatened to hit, slap, or physically hurt you”), and sexual assault and dating violence perpetration. At T1, T3, and T4, participants reported their experiences in the past two months; at T1 and T4, participants reported their experiences in the past year.

**Bystander behavior.**—The Bystander Behavior Scale consists of 18 items (Cook-Craig et al., 2014). Six items referenced the behaviors the participant did in the past 12 months during or after a situation of interpersonal violence (i.e., reactive bystander action), and an identical set of six items referenced the behaviors the participant did in the past two months. For each of the reactive bystander behavior items, participants could respond with a “yes” (participants witnessed the behavior and engaged in the behavior described), “no” (participants witnessed the behavior and did not engage in the behavior described), or “no opportunity” (participants did not witness the behavior; these individuals were excluded from the analyses for this outcome). Across waves, bystander behavior opportunity ranged from 14.2% to 98.1% in the past year, and 11.8% to 97.5% in the past two months. Six additional items (three items referring to the past 12 months and three identical items referring to the past two months) measured proactive bystander behavior (such as using social media, e.g., “Text message, instant message, blog, email or use other technology to show that you do not support relationship abuse or sexual assault”) with response options ranging from “0 times” to “10 or more times”. Whereas each of the reactive bystander items were examined independently, proactive items were summed so that higher scores were indicative of greater proactive bystander behavior both for past 2 months and past 12 months. This behavioral measure was administered at T1, T3, and T4.

**Knowledge.**—Similar to previous outcome evaluation studies (Banyard, Moynihan, & Plante, 2007; Foshee & Langwick, 2010), we created six questions to assess student’s knowledge about interpersonal violence. Items on the Knowledge Questionnaire (KQ) were also included, for 15 total items, based on information provided as part of the BITB-HSC (Leyva & Eckstein, 2015). An example these questions is: “According to the FBI, \_\_\_\_\_ of rapes that are reported to the police are false reports (the person reporting lied)” with response options being “(a) 2%, (b) 10%, (c) 30%, (d) 60%, (e) I don’t know”. Items were scored for accuracy, 0 (*inaccurate*) and 1 (*accurate*), and summed so that higher scores are indicative of greater knowledge about sexual assault and relationship abuse. The KQ was administered at all four survey time points. Across time points, Cronbach’s alphas were .84–.87.

**Rape myth acceptance.**—We used a shorted version (Coker et al., 2011; Cook-Craig, 2012) of the Illinois Rape Myth Acceptance Scale (IRMAS; Payne, Lonsway, & Fitzgerald, 1999) to assess students’ agreement with rape myths at all time points. The IRMAS-Short Form (IRMAS-SF) consists of six items (e.g., “When girls are sexually assaulted, it is often because the way they said ‘no’ was unclear”). Response options range from 1 (*disagree strongly*) to 4 (*agree strongly*). There are two subscales to the IRMAS-SF: Traditional Gender Expectations (Cronbach’s alpha = .78–.88 across time points) and Rape Denial (Cronbach’s alpha = .72–.81 across time points).

**Relationship media literacy.**—We used the Bothered by the Media subscale of the Relationship Media Literacy Scale (Edwards et al., 2018; Edwards, Rodenhizer-Stämpfli, & Eckstein, 2014) at all time points (e.g. “I am bothered by the media’s portrayal of relationship abuse and sexual assault” and “I’m bothered by the media’s portrayal of girls and guys”). This subscale includes three items with response options ranging from 1

(*disagree strongly*) to 4 (*agree strongly*). Items are summed (Edwards, Rodenhizer-Stämpfli, et al., 2017). Across time points, Cronbach's alphas were .65–.74.

**Bystander readiness.**—We used the Denial subscale of the Readiness to Help Scale (Banyard, Moynihan, Cares, & Warner, 2014) to assess the extent to which students agreed with statements indicating denial about the role that they could play in preventing interpersonal violence at all time points (e.g. “There is not much need for me to think about relationship abuse and/or sexual assault among high school students.”). This specific construct has been important in understanding bystander prevention work in college samples and is also one of the variables specified as key for bystander intervention (Moynihan et al., 2015). Response options on this four-item scale ranged from 1 (*disagree strongly*) to 4 (*agree strongly*; (Edwards, Rodenhizer-Stämpfli, et al., 2017)). Across time points, Cronbach's alphas were .69–.80.

**Barriers and facilitators of bystander helping.**—The Pros and Cons of Bystander Action Scale was administered at all time points to assess students' perceptions of pros and cons of bystander action in situations of interpersonal violence (Edwards, Rodenhizer, et al., 2017). The scale includes 8 items and two subscales: Positive Attitudes Towards Helping (Cronbach's alphas = .61–.74 across time points; e.g. “It is important for student to be part of keeping everyone safe”) and Barriers to Helping (Cronbach's alphas = .66–.72 across time points; e.g. “I might get made fun of or picked on if I help). Response options range from 1 (*disagree strongly*) to 4 (*agree strongly*).

**Victim empathy.**—The Victim Empathy Scale (VES) consists of three items administered at all time points (Edwards, Rodenhizer-Stämpfli, et al., 2017), “I could imagine being in the place of a victim of relationship abuse and/or sexual assault”, and “I can empathize with the emotions of a victim of relationship abuse and/or sexual assault.” Response options range from 1 (*disagree strongly*) to 4 (*agree strongly*). Across time points, Cronbach's alphas were .80–.86.

## Data Analysis

**Missing Data Analysis.**—For continuous outcome scale scores that consisted of multiple items, the missing scale scores were imputed by half scale rule or “prorated scale score” rule. This method is time point specific (independent of past and future value) and preserves the reliability of the scale (Mazza, Enders, & Ruhlman, 2015). In the case of a missing scale score due to one or more missing items, a scale score would be imputed if at least half of the items for the scale were not missing. In general, we saw 5–8% of missing values for the outcomes variables for those that we employed the prorated scale score rule. For these outcome variables, we imputed about 50 to 70% of missing values by using half-scale missing rule. For non-outcome variables (e.g. independent variables in the regression equation), multiple imputations method was applied. For the dichotomous outcome variables (i.e., victimization, perpetration, reactive bystander behavior), the missing outcomes were not imputed.

**Statistical Modeling.**—For all outcome measures, multilevel mixed (MLM) regression models were used to evaluate the outcome difference (at short- and long-term) among the conditions (i.e., treatment and control). For continuous outcome variables, we used MLM mean regressions, and for dichotomous outcome variables, we used logistic MLM regressions. All multi-level models had 3-levels. The level 1 unit consisted of the repeated measures for each student, the level 2 unit was the individual or students and finally the level 3 unit was the school which accounted for the cluster effect or intra class correlations among the students within the same school. The models were also adjusted for the covariates (race, gender, age, poverty status and sex orientation) that deemed to be different between excluded subjects and study participants. The predicted values at the mean level of all demographic covariates across all conditions at each time point were then obtained and compared among conditions. We conducted two sets of testing through these modes: 1) the difference of predicted outcome between the treatment condition and the control condition; and 2) the difference of change in the predicted outcome from baseline for the experimental treatment condition with that of control condition. For the reactive bystander behavior outcomes, we used logistic regression models to predict bystander action at the short and long term follow up, with the independent variable being treatment condition, adjusting for demographics and controlling for the nested nature of the data. It was not appropriate to conduct change scores for bystander variables because it would have required that participants have opportunities at all time points which would have resulted in a very small portion of our sample being included in the analyses. Across models, intraclass correlations ranged from .00 to .04 at the school level. One strength of multilevel modeling in which the longitudinal time trend at both the cluster level and individual level are preserved through intraclass correlation and variance structure is that this technique minimizes bias due to attrition (Gad & Youssif, 2006; Mallinckrodt, Clark, & David, 2001).

## Results

Results for violence victimization and perpetration outcomes are presented in Table 1, reactive bystander behavior outcomes are presented in Table 2, and proactive bystander behavior outcomes and all of the continuous outcome variables are presented in Table 3.

### Violence victimization and perpetration.

We found that BITB-HSC curriculum significantly reduced past 2 month sexual harassment and stalking perpetration from T1 to T3, compared to the control condition. All other victimization and perpetration outcomes were not n-significant, although percent reduction for some of the other outcomes were notably larger for the treatment condition, compared to the control condition. For example, the difference in past year sexual harassment and stalking victimization and perpetration between treatment and control conditions was marginally significant. Percent reductions were also greater for the treatment condition than the control condition for sexual assault and dating violence (Table 1).

### Bystander behavior.

Regarding reactive bystander behaviors, youth in the treatment condition were significantly more likely than youth in the control condition to talk to a hurt friend in the past two months



(at T3). There were no other significant differences over time across condition. Regarding proactive bystander behavior, for past two month use of social media, the treatment condition increased significantly over time compared to the control condition (Tables 2 and 3). There were no other significant differences over time across condition for proactive bystander behavior items.

**Knowledge.**

There were differences in knowledge over time based on condition such that the treatment condition students showed a significant increase in knowledge compared to the control condition at all time points. Although knowledge decreased for students in the treatment condition between T2 and T4, it was still higher at T4 for students in the treatment condition than the control condition (Table 3).

**Rape myth acceptance.**

There were no significant differences in changes over time in gendered expectations of relationships as a function of condition. However, there were differences in rape denial over time as a function of condition, such that students in the treatment condition showed significant decreases at T3 and T4, compared to students in the control condition (Table 3).

**Media literacy.**

There was a significant increase over time in media literacy among students in the treatment condition compared to students in the control condition, and this finding persisted at the T3 and T4 (Table 3).

**Bystander readiness (denial).**

There was a significant difference in the rate of change in bystander readiness (denial) as a function of condition. Students in the treatment condition showed a significant decrease in denial compared to students in the control condition, and this reduction was maintained at T4 (Table 3).

**Barriers and facilitators of bystander helping.**

There was a significant increase in positive attitudes towards helping from T1 to T3 among students in the treatment condition compared to students in the control condition. However, by T4, there was a rebound effect such that positive attitudes towards helping were the same among students in the two conditions (Table 3).

**Victim empathy.**

Results indicated that there was a significant increase in victim empathy from T1 to T3 among students in the treatment condition compared to students in the control condition. However, there was a rebound effect by T4 such that victim empathy was the same among students in the two conditions (Table 3).

## Discussion

The purpose of the current study was to examine how the BITB-HSC impacted rates of interpersonal violence (primary outcomes) and key intermediary variables (e.g., knowledge, media literacy, bystander readiness). Due to our high attrition rate, the current findings are preliminary and thus our discussion and implications should be considered in light of this limitation. Nevertheless, overall the findings were mixed such that the BITB-HSC led to some long-term changes (e.g., increases in media literacy, reductions in bystander denial), but other positive outcomes were only short-lived (e.g., decreases in rape myths, increases in victim empathy). It will be important for future research to determine which intermediate variables are most predictive of long-term behavioral change and to explore the use of booster sessions to attenuate the rebound effects in the treatment condition.

In the current study, we found evidence that the BITB-HSC may reduce some forms of interpersonal violence, specifically stalking and sexual harassment. Percent reductions for sexual and dating violence were larger among youth in the BITB-HSC than other conditions. Thus, our intervention was more effective for sexual harassment and stalking. These behaviors may be easier to change than sexual assault and dating violence. In addition, compared to past programs (Foshee et al., 2004; Taylor et al., 2013), the program content of BITB-HSC spent more programming time on sexual harassment and stalking (Leyva & Eckstein, 2015). Additional programming content (e.g., emotion regulation strategies, social norming approaches) and/or different delivery strategies (e.g., school-wide approaches) may be needed to move the needle on reducing sexual assault and dating violence among high school students.

The lack of statistical significance for sexual harassment and stalking at T4 could be attributed to the large attrition at this time point (which could have impacted statistical power due to the small cell sizes for low base rate events). Moreover, the lack of statistical significance could also be due to the insufficient number of matching clusters and/or imbalanced baseline among conditions. These findings warrant further investigation and suggest that BITB-HSC as a classroom-based program may have important impacts on behavior over time. Some recent programming, such as Shifting Boundaries, has been important in shifting the focus of prevention work to school-level risk factors, such as unsupervised spaces in the building (Taylor et al., 2013). However, the current study, consistent with earlier work by Foshee and colleagues (Foshee et al., 2004), suggests that classroom-based skill-building curricula have an important role to play in a school's toolkit of prevention strategies in addition to addressing school-level risk factors.

With the exception of one proactive and one reactive bystander behavior, the BITB-HSC had no impact on actual bystander behaviors. This finding could have been caused by a measurement issue, based on other research documenting that the situations in which youth have the opportunity to intervene and the ways in which youth intervene differ from current measures in the field, including the one we used in this study. For example, reactive opportunities to intervene often occur online, which is not reflected well in our measurement; (Edwards et al., 2015). It is also possible that classroom-delivered bystander-focused violence prevention curricula are not particularly effective in moving the needle on

more socially-based behaviors, such as bystander behaviors. Indeed, recent research on bystander actions among college students highlights the importance of peer norms for helping, and highlights important differences in correlates of helping friends versus strangers (Moschella, Bennett, & Banyard, 2016).

We may need to pay closer attention to the variety of prevention spaces and how different contexts may call for different prevention tools. For example, given that many bystander opportunities often involve friends [Lee, K., Edwards, K. M., Banyard, V. L., Sessarego, S. N. (2018) Youth strategies for positive bystander action in situations of dating and sexual violence: Implications for measurement and programming. *Journal of Interpersonal Violence*. Manuscript under review.], bystander intervention may be best taught and practiced in peer groups of friends rather than classrooms where friends may or may not be together. This method would be consistent with the delivery method of Coaching Boys into Men in which boys are taught within the context of their sports team (Miller et al., 2012). Moreover, given that perception of peer norms of helping are related to behavior, a more targeted popular opinion leader training strategy may also enhance bystander behavior outcomes, particularly among high school students who are in a developmental moment when peer influences are quite strong. These popular opinion leaders may be instrumental in promoting behavior change because they influence the attitudes and behaviors of other students, and/or may informally teach bystander skills in their peer groups (Valente & Pampuang, 2007). Classroom spaces may be best used to change more clearly intra-individual types of variables such as knowledge and attitudes (which were successfully impacted in the current study) or self-regulation skills (Espelage, Low, Polanin, & Brown, 2015). It is also important to conduct further research on training bystanders to take action. To date we know little about possible unintended negative consequences when bystanders step in. There may be situations where bystanders make the situation worse or where bystanders themselves experience harm (Moschella et al., 2016). We also know relatively little about the most successful and safe bystander strategies for high school students as the few studies of consequences of helping focus on college samples. One important line of future bystander focused prevention research is to examine the consequences of action and under what circumstances bystander behaviors can reduce interpersonal violence.

### Limitations and Future Research

The current study's limitations indicate opportunity for future research. First, in line with our call to consider different prevention contexts, future research is needed to determine if, for whom, why, and in what contexts (e.g., classroom-based versus school wide initiatives) bystander-focused violence prevention initiatives reduce violence. Studies of college students find significant interaction effects based on attitudes at baseline, with behavior change most likely for those with more advanced levels of readiness (Moynihan et al., 2015). Second, future research would benefit from addressing methodological limitations of the current study: small school-level sample size, limited racial and ethnic diversity, high attrition at the long-term follow-up (due to limited grant resources to ensure higher retention), and moderate internal consistency of some subscales. In addition, the current study had large ranges for follow-up periods, at times overlapping. Third, we were unable to match just over 15 percent of surveys; thus, these participants were dropped from the study.

Better methods are needed to match surveys while maintaining anonymity. Similarly, the current findings can only be considered preliminary given the high attrition rate. Future research should replicate and expand on these findings to create a body of work from which stronger conclusions can be drawn. Fourth, we only implemented the intervention in selected classrooms; this strategy may have diluted our effects, whereas school-wide programming may have led to more robust outcomes. Finally, our measurement of bystander behavior may not have adequately tapped into the situation and responses that youth are likely to face (e.g., online; [Lee, K., Edwards, K. M., Banyard, V. L., Sessarego, S. N. (2018) Youth strategies for positive bystander action in situations of dating and sexual violence: Implications for measurement and programming. *Journal of Interpersonal Violence*. Manuscript under review.]). Thus, future measurement work is sorely needed to create valid, reliable, and inclusive measures of bystander situations and responses among youth.

## Conclusions

Despite the limitations of the current study and mixed outcomes regarding BITB-HSC, the findings contribute to the science and practice of violence prevention among high school youth. We found trends indicating decreases in sexual harassment and stalking perpetration and some preliminary evidence that the BITB-HSC might also impact reductions in sexual assault and dating violence. Although not significantly different, the percent reduction for treatment condition was notably larger than the control condition on sexual assault and dating violence victimization and perpetration. Students in the condition were not different on bystander behaviors, however, students in the treatment condition indicated significantly more reduction in rape myths, and bystander barriers, and long-term changes in media literacy, bystander readiness, and knowledge than students in the control condition. Findings indicate opportunities for further research, including integrating classroom- and school-level prevention, considering the role of friends and popular opinion leaders in prevention, and determining for whom and under what conditions bystander-focused violence prevention initiatives are most promising.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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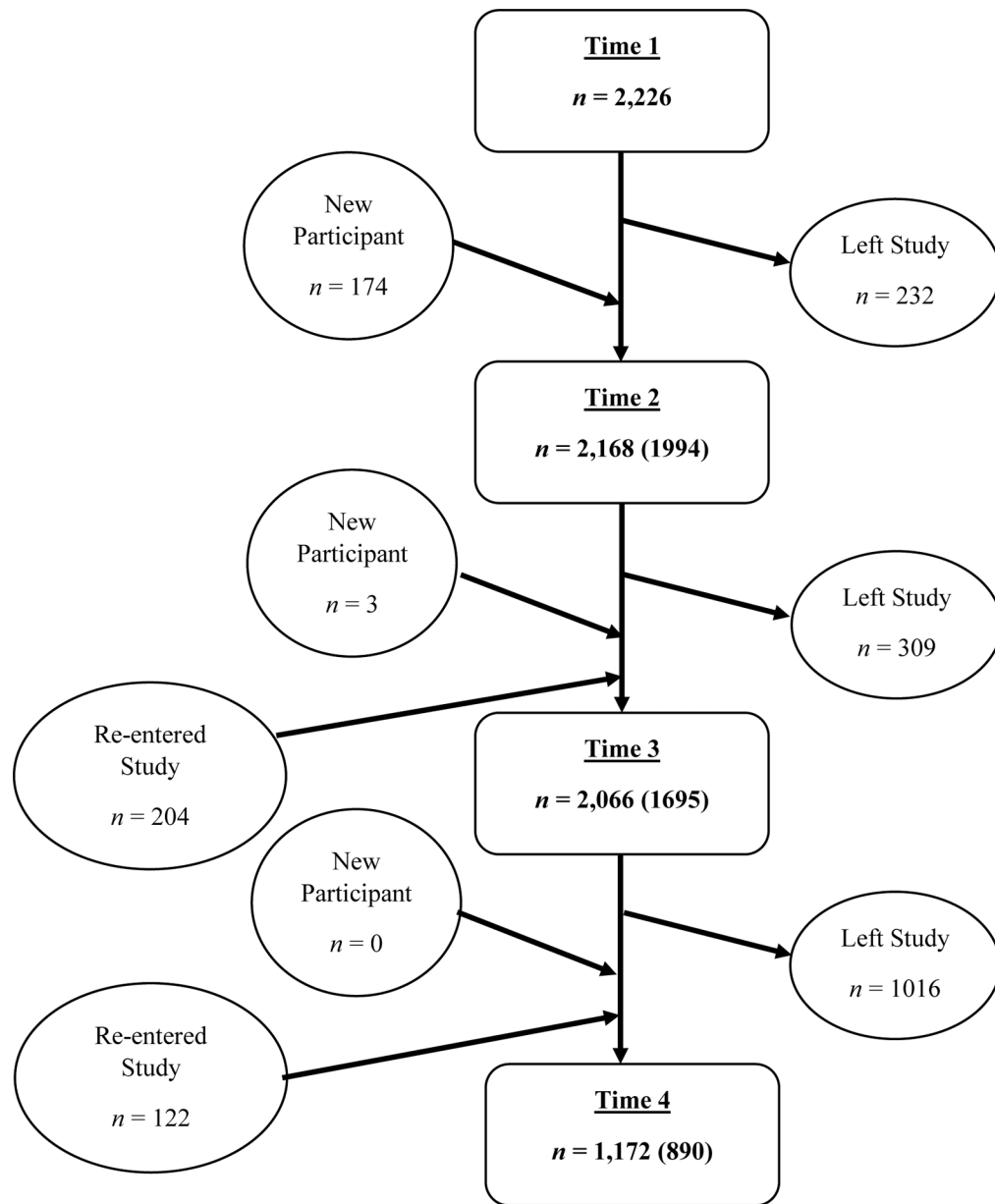
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**Figure 1.** Participant retention and attrition across data collection time points (N = 2403)  
 Note. The numbers in parentheses represents the number of participants who completed all rounds up to that time point.



**Table 1.**

Reductions in violence as a function of treatment condition

Variable	Control					Treatment				
	T1	T3	T4	T3-T1	T4-T1	T1	T3	T4	T3-T1 (OR, p value)	T4-T1 (OR, p value)
<i>N</i>	1218	1122	655			1008	944	517		
<b>Victimization</b>										
Past year sexual harassment and stalking	36.5	NA	33.2	NA	-3.3	39.6	NA	30.4	NA	-9.2 (1.34, 0.0555)
Past year sexual assault and dating violence	22.8	NA	19.5	NA	-3.3	27.1	NA	21.3	NA	-5.8 (1.12, 0.3983)
Past 2 months sexual harassment and stalking	27.4	26.3	24.9	-1.1	-2.5	27.7	25.5	23.0	-2.2 (1.07, 0.5999)	-4.7 (1.14, 0.4367)
Past 2 months sexual assault and dating violence	14.6	9.8	13.8	-4.8	-0.8	15.9	9.5	13.8	-6.4 (1.15, 0.3715)	-2.1 (1.11, 0.5963)
<b>Perpetration</b>										
Past year sexual harassment and stalking	9.2	NA	8.2	NA	-1.0	11.8	NA	7.4	NA	-4.4 (1.51, 0.0664)
Past year sexual assault and dating violence	14.1	NA	10.0	NA	-4.1	16.3	NA	10.6	NA	-5.7 (1.12, 0.4688)
Past 2 months sexual harassment and stalking	6.7	7.7	5.6	1.0	-1.1	8.2	5.8	5.3	<b>-2.4 (1.68, 0.0211)</b>	-2.9 (1.33, 0.2761)
Past 2 months sexual assault and dating violence	8.2	9.2	5.7	1.0	-2.5	9.8	8.9	6.0	-0.9 (1.26, 0.1991)	-3.8 (1.16, 0.4555)

*Note.* Significant finding is bolded. Table presents predicted percentages. The OR is the odds ratio for the effect size (EF) comparison of change score of treatment condition and the change score in control condition. The *p* value is to compare the change score in treatment condition with that in control condition.

**Table 2.**

Differences in bystander behavior as a function of treatment condition

Variable	Control		Treatment	
	T3	T4	T3 (OR, p value)	T4 (OR, p value)
<i>N</i>	1122	655	944	517
<b>Student Bystander Behavior (Reactive)</b>				
Past year- Stop Harassment	NA	89.0	NA	89.4 (OR=1.04, p=0.859)
Past year- Spoke Against Blame	NA	74.0	NA	78.2 (OR=1.26, p=0.359)
Past year- Talked to Hurt Friend	NA	80.5	NA	77.5 (OR=0.84, p=0.481)
Past year- Talked to Upset Person	NA	92.5	NA	90.7 (OR=0.79, p=0.364)
Past year- Spoke Against Excuses	NA	58.7	NA	62.1 (OR=1.15, p=0.636)
Past year- Got Help for Friend	NA	54.1	NA	49.0 (OR=0.82, p=0.471)
Past 2 months- Stop Harassment	86.6	83.5	87.8 (OR= 1.11, p=0.524)	82.5 (OR=0.93, p=0.724)
Past 2 months – Spoke Against Blame	68.2	59.2	69.2 (OR= 1.05, p=0.840)	67.1 (OR=1.41, p=0.267)
Past 2 months – Talked to Hurt Friend	65.1	66.3	<b>74.1 (OR=1.53, p=0.034)</b>	62.1 (OR=0.83, p=0.508)
Past 2 months – Talked to Upset Person	87.8	86.5	90.6 (OR= 1.34, p=0.137)	86.0 (OR=0.96, p=0.885)
Past 2 months – Spoke Against Excuses	45.9	53.1	44.7 (OR=0.95, p=0.863)	52.4 (OR=0.97, p=0.935)
Past 2 months – Got Help for Friend	44.2	58.4	44.1 (OR= 1.00, p=0.993)	45.7 (OR=0.60, p=0.130)

Note. Significant finding is bolded. Table presents predicted percentages. The OR and *p* value is to compare the change score in treatment condition with that in control condition.

**Table 3.** Changes in proactive bystander behavior and secondary outcomes as a function of treatment condition

Variable	Control				Treatment					
	T1	T3	T4	T3-T1	T4-T1	T1	T3	T4	T3-T1 (EF, p value)	T4-T1 (EF, p value)
Knowledge	1218	1122	655			1008	944	517		
Traditional Gender Expectations	63.0	68.1	69.7	5.1	6.7	61.2	78.2	75.7	<b>17.0 (0.54, 0.0000)</b>	<b>14.5 (0.33, 0.0000)</b>
Rape Denial	11.6	11.6	12.1	0.0	0.5	11.0	11.8	12.4	0.8 (0.06, 0.2061)	1.4 (0.06, 0.2773)
Bothered by the Media	34.8	31.6	30.1	-3.2	-4.7	34.6	28.8	27.7	<b>-5.8 (0.14, 0.0028)</b>	<b>-6.9 (0.11, 0.0333)</b>
Bystander Readiness- Denial	51.4	49.8	50.7	-1.6	-0.7	50.2	55.9	55.0	<b>5.7 (0.41, 0.0000)</b>	<b>4.8 (0.28, 0.0000)</b>
Positive Attitudes Towards Helping	38.6	37.4	36.7	-1.2	-1.9	39.2	33.9	32.8	<b>-5.3 (0.24, 0.0000)</b>	<b>-6.4 (0.24, 0.0000)</b>
Bystander Barriers	70.7	69.0	70.2	-1.7	-0.5	71.0	71.5	70.1	<b>0.5 (0.15, 0.0030)</b>	-0.9 (0.03, 0.5563)
Victim Empathy	48.3	51.0	49.8	2.7	1.5	48.8	53.2	51.1	<b>4.4 (0.10, 0.0350)</b>	2.3 (0.04, 0.4191)
<b>Proactive Bystander Behavior</b>	46.4	45.0	47.1	-1.4	0.7	46.9	48.2	49.2	<b>1.3 (0.13 0.0093)</b>	2.3 (0.07, 0.1990)
Past Year Prevention Talk	57.5	NA	74.2	NA	16.7	49.2	NA	81.6	NA	32.4 (0.07, 0.1756)
Past Year Use Social Media	102.6	NA	99.8	NA	-2.8	102.8	NA	105.2	NA	2.4 (0.02, 0.7260)
Past Year Talk About Safety	158.6	NA	150.7	NA	-7.9	161.9	NA	164.4	NA	2.5 (0.04, 0.5296)
Past 2 Months Prevention Talk	0.4	0.5	0.5	0.1	0.1	0.4	0.5	0.6	0.1 (0.02, 0.6917)	0.2 (0.01, 0.8684)
Past 2 Months Use Social Media	0.7	0.7	0.6	0.0	-0.1	0.6	0.8	0.7	0.2 (0.06, 0.2218)	<b>0.1 (0.13, 0.0140)</b>
Past 2 Months Talk About Safety	0.9	1.0	1.0	0.1	0.1	1.0	1.1	1.1	0.1 (0.01, 0.8896)	0.1 (0.01, 0.8696)

Note. Significant findings are bolded. The effect size (EF) is the comparison of change score of treatment condition and the change score in control condition. The p value is to compare the change score in treatment condition with that in control condition. The response categories for proactive bystander behavior were converted as follows: 0=0 times, 1.5=1-2 times, 4=3-5 times, 7.5=6-9 times and 10=10 or more times.