Predicting High-School Students' Bystander Behavior in Simulated Dating Violence Situations

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Abstract

Purpose—Dating violence among adolescents is associated with a variety of negative health consequences for victims. Bystander programs are being developed and implemented with the intention of preventing such violence, but determinants of high school students' responsive bystander behavior remain unclear. The present study examines hypothesized determinants of high school students' bystander behavior in simulated situations of dating violence.

Methods—Participants were 80 high-school students who completed self-reports of hypothesized determinants of bystander behavior (responsibility, efficacy, and perceived benefits for intervening) at a baseline assessment. A virtual reality paradigm was used to observationally assess bystander behavior at 1-week and 6-month assessments after baseline.

Results—Efficacy for intervening was positively associated with observed bystander behavior at the 1-week and 6-month assessments. Moreover, efficacy predicted bystander behavior over and above feelings of responsibility and perceived benefits for intervening. Contrary to our predictions, neither responsibility nor perceived benefits for intervening were associated with observed bystander behavior.

Conclusions—This research advances our understanding of determinants of bystander behavior for high school students, and can inform prevention programming for adolescents. The study also introduces an innovative way to assess high school students' bystander behavior.

Keywords

dating violence; bystander behavior; virtual reality

US national surveys indicate that 18 to 40% of adolescents in romantic relationships report lifetime dating violence victimization [1,2]. Annually, approximately 10% of male and 21%

of female teens in romantic relationships experience physical or sexual dating violence [3]. Large, representative, localized surveys of adolescents indicate even higher rates [4–6]. Dating violence victimization is associated with a range of negative consequences, including depression, increased substance use, psychological distress, academic difficulties, suicidal thoughts, [7–10] and victimization beyond the high school years [11,12]. Efforts to help prevent sexual victimization—as well as relationship violence more generally—in campus communities include the development of bystander programs [13–18]. These programs train individuals who observe a violent or potentially violent situation (not as a potential victim or a perpetrator, but as a witness or "bystander") to intervene to stop the violence or prevent the situation from escalating [19]. Examples of desirable bystander behavior include interrupting a couple having an argument in which there is verbal abuse, and stopping a friend who plans to manipulate a partner into having sex. The majority of bystander programs for preventing relationship and sexual violence on campuses have been developed for college students, but there have also been efforts to develop and evaluate such programs on high-school campuses [20–23].

Theory suggests that bystanders are more likely to intervene in situations to help stop or prevent violence when they: 1) feel a responsibility to intervene, 2) have confidence in their skills to intervene (i.e., efficacy), and 3) believe the benefits of intervening outweigh the costs [24,25]. Consistent with these theoretical assertions, researchers have found that bystanders who report a greater sense of responsibility, efficacy, and benefits to intervening are more likely to report having engaged in responsive bystander behavior [14,15,24,26–30]. However, there remains much to be understood about what influences bystander behavior, and most studies evaluating hypothesized determinants of bystander behavior to prevent dating violence have been conducted with college-student samples.

There are a number of important differences between high-school and college students that might influence bystander behavior [31]. As a result, it is not clear if determinants of college students' bystander behavior generalize to high-school students. For example, during mid-adolescence (14–15 years), students are more concerned about their relationships with peers, less resistant to peer influences, and express more feelings of vulnerability to harm from peers, as compared to college-aged students [32, 33]. These factors may impact relations between hypothesized determinants of bystander behavior (responsibility, efficacy, and perceived benefits) and actual bystander behavior. It is thus important to understand how hypothesized determinants of bystander behavior operate among high-school students to optimize the development of effective bystander programs for that population.

The present research examines whether high-school students' feelings of responsibility, efficacy, and perceptions of benefits predict bystander behavior during simulated situations of dating violence. An innovative feature of this research is the use of virtual reality technology to assess bystander behavior, which allows for the direct observation of student responses. Using procedures developed by Jouriles and colleagues [34], students are placed in an immersive virtual environment (IVE) in which they interact with an avatar that is controlled by a live actor. In the IVE, participants are in a "bystander" role and have the opportunity to intervene to stop violence or prevent the situation from escalating. We collect data on bystander behavior at 1 week and at 6 months after measuring the theorized

determinants (responsibility, efficacy, and perceived benefits) to establish temporal precedence. Based on theory and past research with college students, we hypothesized that each of the theorized determinants would relate to observed bystander behavior. However, since prospective associations between cognitions and behavior often weaken over time [26,35], we expected the strength of the associations to weaken over the 6-month period. Participant sex, age, and perceptions of the realism of the IVE procedure were explored as potential moderators of the hypothesized associations.

Methods

Sample

Participants were 80 students recruited from a public high school in the southwestern US. Students were told that they would be participating in a study examining the effectiveness of brief educational programs. One of these was a bystander program, but the present study includes only control group participants—those who did not receive the bystander program. Students (38 male, 42 female) ranged from 14 to 19 years (M=15.8, SD=1.20). There were 34 (42.5%) freshmen, 24 (30.0%) sophomores, and 22 (27.5%) juniors. Thirty-seven students (46.3%) reported themselves to be of Hispanic heritage, but on a subsequent question about race, 21 of these (26.3%) either failed to report their race or reported it as "unknown". Among those who reported their race (74%), there were 30 (37.5%) Black, 14 (17.5%) White, 9 (11.3%) "More than one race," 3 (3.8%) Asian, 2 (2.5%) American Indian/ Alaska Native, and 1 (1.3%) Native Hawaiian/Pacific Islander. The racial/ethnic composition of our sample reflects that of the high school campus from which participants were recruited [36].

Measures and Procedures

The Institutional Review Board of Southern Methodist University and the participating high school's District Research Review Board approved all protocols. Informed consent was obtained from students' parents, and students provided verbal assent. Participants completed three assessments (baseline, 1-week, 6-month). The baseline assessment included measures of hypothesized determinants of bystander behavior: responsibility, efficacy, and perceived benefits. To help disguise the purpose of the study, these measures were embedded in a broader assessment, which included questionnaires on classroom climate, motivation, and interest in studying. The 1-week and 6-month assessments included an observational procedure to assess bystander behavior.

Of the 80 participants, one did not attend the 1-week assessment, and an additional 15 did not attend the 6-month assessment. Reasons for missing data at the 6-month assessment included no longer being enrolled at the school (n=10), not showing up for assessments—we stopped scheduling them once they failed to show up 3 times (n=4), and voluntary withdrawal from the study (n=1). Multivariate ANOVA and chi-square tests showed that those who attended the 6-month follow-up did not differ from those who did not on hypothesized determinants of bystander behavior, p=.255, or on sex or race, p-$values$>.17.

Responsibility for intervening—Participants completed the 8-item Failure to Take Responsibility Scale [24]. They rated their agreement with each item on a 7-point Likert scale (1=*Strongly Disagree*, 7=*Strongly Agree*); a sample item is "If I saw someone I didn't know was at risk for being abused in a relationship, I would leave it up to his/her friends to take action." Responses were scored so that higher scores reflect greater feelings of responsibility for intervening, and then averaged. This measure correlates with self-reports of bystander behavior in college samples [24]. Coefficient alpha in the present sample was .79.

Efficacy for intervening—Participants completed a 5-item version of the Bystander Efficacy Scale [37], indicating how confident they would feel in performing each designated behavior (0=*Can't do*, 100=*Very certain can do*). A sample item is "Get help if I hear of an abusive relationship that involved one of my friends." Responses were scored so that higher scores reflect greater efficacy, and then averaged. This measure correlates with self-reports of bystander behavior in college samples [19]. Coefficient alpha in the present sample was .73.

Perceived benefits for intervening—Participants completed the 11-item Decisional Balance Scale [37], indicating the degree of importance of certain social consequences of intervening as a bystander. Items included positive and negative social consequences, and responses were made on a 5-point scale (1=*Not important at all*, 5=*Extremely important*). A sample positive item is "If I take action regularly, I can prevent someone from being hurt" and a sample negative item is "Taking action might cost me friendships." A score was calculated by subtracting the total negative-item score from the total positive-item score; a higher score indicates perceiving more positive than negative consequences for intervening as a bystander. This measure correlates with self-reports of bystander behavior in college samples [26]. Coefficient alpha in the present sample was .69.

Immersive virtual environment (IVE) simulations—At the 1-week and 6-month assessments, students participated in virtual-reality simulations. Participants wore goggles allowing them to experience the IVE, which displayed the inside of a parked car during a rainstorm at night. The IVE was presented from the passenger's point of view, with a male avatar sitting in the driver's seat. An adult male actor controlled the avatar (participants did not meet the actor). During the simulations, the actor interacted with the participant by talking with the participants, as the avatar, through a microphone and controlling the avatar's movements via the computer. A noise machine produced sounds of a rainstorm.

All participants took part in nine 2–4 minute simulations. Four simulations provided participants opportunities to act as a responsive bystander during an incident of dating violence or potential dating violence, and these 4 were used in this research. The other simulations (referred to as distraction simulations) involved situations that could plausibly be experienced by high-school students, including peer pressure and academic cheating. These were included to help disguise the purpose of the research. Bystander and distraction simulations were presented in an alternating order, and the order of the specific simulations was randomized across participants within this alternating structure.

A research assistant instructed participants to respond in the simulations as she or he normally might respond to a friend. The research assistant then introduced one of the simulations to the participant. The actor commenced the simulation, following a general script that required him to make nine specific statements, adjusting the order if needed to keep the interaction natural and realistic. After each simulation, the research assistant asked participants questions about the realism of the simulation (described below) prior to introducing the next simulation.

In simulations that provided participants opportunities to act as a responsive bystander, scripts included 1–2 statements suggesting either imminent violence or that an act of violence just occurred. Other statements either helped set up the situation or attempted to justify inaction in response. A research assistant coded the actor's adherence to the script. Simulation introductions, actors' scripts, and data on actors' adherence to scripts are presented in Table 1.

Observed bystander behavior (OBB)—Each simulation was audio-recorded and coded separately by two research assistants. Coders independently rated the extent to which participants attempted to intervene to prevent potential violence using a single 7-point rating scale (1=*Not at all* to 7=*Very much*). A rating of 7 indicates that participants used verbal expressions that either stopped or were intended to stop possible violence (e.g., For the *Drunk Night* simulation: "I am going back inside to make sure she's okay." For *The Hook-up* simulation: "No, I am not letting you go back inside to find Erica. You are drunk and I am taking you home"). A rating of 1 reflects that participants responded with verbal expressions that encouraged violence or just agreed with the actor during the simulation (e.g., For the *Drunk Night* simulation: "Yeah, she was asking for it." For the *Stormy Relationship* simulation "No, we shouldn't do anything, it's their business."). Interrater reliability (Pearson's *r*), for the individual simulations ranged from .88 to .97. For each simulation, the two coders' ratings were averaged. Scores for each of the four simulations were then summed (analogous to summing items from a questionnaire), and the coefficient alpha for this "4-item" measure of observed bystander behavior was .90. Using a similar procedure and coding system, observations of bystander behavior have been found to correlate with college students' responsibility and efficacy [34].

IVE realism—The IVE and the simulations are intended to help participants suspend "normal" reality and experience a "new" reality. Thus, after each simulation, participants responded to three items assessing perceived realism: "How real did the interaction feel to you?" "How much did you feel as though you were actually in the situation?" and, "How much could you see a situation like this happening among you and/or your friends?" Responses were made on a 5-point scale (0=*Not at all*, 1=*Slightly*, 2=*Somewhat*, 3=*Moderately*, 4=*Very much*). Coefficient alpha for this 3-item scale for each of the four simulations ranged from .74 to .81 at the 1-week assessment, and from .80 to .87 at the 6-month assessment.

Data Analysis

Relations between hypothesized determinants of bystander behavior and observed bystander behavior were analyzed using mixed-effects regression models (MRM), since we had repeated assessments of bystander behavior. We computed a different MRM for each hypothesized determinant of bystander behavior (responsibility, efficacy, benefits). Each model was similar in that each included the hypothesized determinant, age, sex, a dummy variable coding time (i.e., the assessment point: 0=1-week assessment, 1=6-month assessment), and the interaction between the determinant and the time dummy variable. Thus, the model for efficacy predicting observed bystander behavior was:

$$OBB_{ij} = b_{0i} + b_{1i}*EFFICACY_i + b_{2i}*TIME_{ij} + b_{3i}*EFFICACY_i*TIME_{ij} + b_{4i}*AGE_i + b_{5i}*SEX_i + \varepsilon_{ij}$$

where OBB_{ij} is bystander behavior for individual i at assessment j, $EFFICACY_i$ is the baseline bystander efficacy scale score for individual i, $TIME_{ij}$ is the dummy variable representing assessment time-point for individual i at assessment j, AGE_i and SEX_i are the age and sex of the student at baseline, and ε_{ij} is the error. This model allows us to include all participants in the analyses, even if they missed the 6-month assessment; has less restrictive assumptions than separate correlation/regression analyses (data missing at random rather than data missing completely at random): uses all the data from both assessments to calculate the relations between the predictors and the outcome: and allows us to directly compare the relation between each hypothesized determinant and observed bystander behavior at the two assessments (the interaction term tests whether the relation between a determinant and bystander behavior is different at the two assessments). Continuous variables were converted to z-scores to enhance interpretation of the results. The MRMs were estimated using maximum likelihood estimation, and the covariance between the errors of the repeated measures was modeled as unstructured.

Results

Table 2 presents means, standard deviations, and correlations among study variables.

Hypothesized determinants and bystander behavior

In the three separate analyses (one for each hypothesized determinant), the association between the respective determinant and bystander behavior did not differ across the two assessment points (i.e., the Determinant×Time interactions did not predict bystander behavior in any of the models, p-values ranged from .18 to .25). Thus, the interaction terms were dropped from the models, and the analyses were recomputed. Results indicated that efficacy was positively associated with bystander behavior across the two assessments, b=. 29, $t(80)$=2.91, p=.005, but responsibility was not, b=.11, $t(81)$=1.06, p=. 291, nor was perceived benefits for intervening, b=.02, $t(78)$=.16, p=.873.

Sex and age as moderators

To test for sex as a moderator of the effect of each hypothesized determinant on bystander behavior, we added the following terms to the model for each determinant: Sex×Determinant (e.g., BES), Sex×Time, and Sex×Time×Determinant. In separate analyses for each

determinant, none of the interactions were significant (*p*-values>.17), indicating no sex differences in the relations between the hypothesized determinants and bystander behavior. A similar investigation of age as a potential moderator indicated no such effects (*p*-values>.065).

Multivariate model

To determine if the three hypothesized determinants (responsibility, efficacy, benefits) predicted bystander behavior over and above each other, all three determinants were simultaneously entered into an MRM, along with their interactions with time (as well as age and sex). The interactions with time were again not significant (*p*-values>.36), so they were dropped from the analysis and the models recalculated. Results indicated that only efficacy was positively related to bystander behavior, *b*=.35, *t*(78)=2.97, *p*=.004; neither responsibility, nor perceived benefits, nor any of the interaction terms were related to bystander behavior (*p*-values>.31).

IVE Realism—Perceived realism scores of the four bystander simulations at the two assessment points are presented in Table 3. Mean item scores indicated that students, on average, perceived the simulations as "somewhat" to "moderately" realistic. We assessed for differences across simulations and time using a 4×2 repeated-measures ANOVA using the mixed-effects models in SPSS 21.0. Results indicated that there was some variation in the perceived realism of the simulations, *F*(3,72)=4.93, *p*=.004, with simulation 1 (drunk night) being perceived as slightly less realistic than the others. The Sidak test comparing each simulation to all the others (and correcting for multiple comparisons) showed that the only statistically significant differences were between simulations 1 and 2 (stormy relationship), *p*=.006, and simulations 1 and 3 (Homecoming dance), *p*=.008. The simulations were also perceived as less realistic at the 6-month assessment than at the 1-week assessment, *F*(1,63)=17.18, *p*<.001, but this difference did not vary by simulation, *p*=.211 for the Simulation×Time interaction.

To evaluate whether the perceived realism of the simulations influenced the relations between the hypothesized determinants and bystander behavior, we added the following terms to the MRM model for each determinant: Realism, Realism×Determinant, Realism×Time, and Realism×Time×Determinant. We conducted separate analyses for each determinant. Perceived realism neither predicted, *p*-values>.662, nor interacted with the hypothesized determinants, *p*-values>.341, in predicting bystander behavior.

Discussion

Consistent with our hypotheses, high-school students' feelings of efficacy for intervening related positively to later observed bystander behavior in simulated dating violence situations, even after accounting for feelings of responsibility and perceptions of benefits for intervening. This finding might be interpreted to suggest that efficacy is an especially important determinant of high-school students' bystander behavior in dating violence situations, and that bystander programs designed to prevent relationship violence among high-school students might benefit by targeting students' confidence in their abilities to intervene in situations of dating violence. Contrary to our hypotheses, neither responsibility

nor perceived benefits for intervening were associated with observed bystander behavior. Responsibility and perceived benefits may simply be less important than efficacy for predicting high-school students' bystander behavior to prevent dating violence. However, it is also possible that the pattern of results might be an artifact of measurement. For example, it might be argued that our measures of responsibility and perceived benefits of intervening as a bystander were not ideally suited for high-school students. They were both designed originally for college students, and better measures of these two constructs (higher reliability and validity) designed specifically for this age group may be more predictive of high-school students' bystander behavior.

The current study also contributes to the literature by introducing a novel method for assessing high-school students' bystander behavior. Students were placed in an IVE and presented with opportunities to act to help prevent relationship violence, allowing for the direct observation of bystander behavior. This observational method circumvents some of the limitations of self-report questionnaires about bystander behavior, which include not remembering past situations accurately and the use double-barreled questions that conflate bystander behavior with opportunity to act as a bystander. However, this observational method has its own set of limitations. It assesses bystander behavior in response to a limited number of situations, and in the present research, all situations were presented by a male actor/avatar, and characters in each of the simulations were described as friends. There is also the question of generalizability. Specifically, the simulations were perceived by students as "somewhat" to "moderately" realistic, and even though perceived realism did not moderate any of the investigated relations, it remains unclear how well adolescents' behavior in the lab simulations generalize beyond the lab.

Other limitations of this research should also be acknowledged. For example, efficacy emerged as an important predictor of bystander behavior after accounting for responsibility and perceived benefits of intervening as a bystander. However, there are many possible determinants of bystander behavior. Future research should examine efficacy in the context of a broader array of possible determinants. In addition, the findings are based on a small sample of students recruited from a single high school. Replicating these findings with larger samples that vary on different demographic characteristics would increase generalizability of the results.

In conclusion, this study furthers our understanding of the determinants of bystander behavior among high-school students, and can inform prevention programming for adolescents. The study also introduces the use of IVEs to assess bystander behavior among high-school students. This method offers several potential advantages for assessing bystander behavior. However, it should be emphasized that it remains unclear to what extent an observational assessment procedure serves as a "better" or "more accurate" reflection of students' bystander behavior over self-reports. Rather, the observational method most likely assesses a different aspect of the bystander response (quality, persistence) compared to what is assessed with self-report measures (frequency across a wide variety of different situations) [34]. To develop a more comprehensive understanding of bystander behavior, researchers should continue to investigate how intrapersonal and contextual variables influence bystander behavior. In addition, future research might benefit by incorporating a mixed-

methods approach, which includes both observational and self-report methods, for the assessment of bystander behavior.

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Implications and Contribution

Dating violence among adolescents is a prevalent problem. The present research identifies adolescents' efficacy (confidence in their skills to intervene) as an important determinant of responsive bystander behavior to prevent dating violence and introduces an innovative way to assess adolescent bystander behavior.

Table 1

Narration, scripts, and adherence data for simulations

Introduction to situation	Script requirements	Adherence to script	
		1-week	**6-month**
1. Drunk Night	*Starting statement:* Wow! That was some crazy party huh?!		
You and your friend Alex are leaving a house party. At the party, you noticed your friend Dan getting pretty drunk. Dan was flirting with a few girls and getting especially close with your friend Katie. You're sitting in Alex's car outside the party and he says to you…	*1.* Dan and Katie were so drunk tonight. Did you notice?		
	2. She looked like she was having a good time.		
	3. **Did you see him carrying her? He just carried her into a back bedroom.**	*100%*	*100%*
	4. **She's really drunk; she probably has no idea where she is right now.**	*100%*	*100%*
	5. I think she was smiling – she seemed like she was up for it.		
	6. It's a party – we should just leave it alone and not ruin their fun.		
	7. Did you see how she's dressed? She looks like she was looking for a really good time.		
	8. You don't just dress like that unless you're willing to put out.		
	9. Look, Dan's my friend, I'm not going to embarrass myself walking into whatever's going on with them.		
	Adherence for entire simulation	*100%*	*100%*
2. Stormy Relationship	*Starting statement:* Wow, do you see what George and Alicia are doing?		
It's the end of a football game and your friend Jake is driving you home. When you get in the car, you see your friend George arguing with Alicia, and Alicia throws her books at George. They're close friends of yours. You've heard that they have a stormy relationship. You're in Jake's car in the school parking lot and he says to you…	*1.* **Did you see all those books she threw at him? What a scene that caused.**	*100%*	*100%*
	2. George has been telling me they've been having problems. Have you heard anything from Alicia?		
	3. He says they fight a lot. Like it's pretty constant.		
	4. I've just never seen them act like THAT before. I thought it was mostly just yelling.		
	5. You know what, I kind of think he deserved it. I think he makes fun of her all the time and calls her names.		
	6. It really isn't any of our business. They'll figure it out.		

Introduction to situation	Script requirements	Adherence to script 1-week	6-month
	7. It probably doesn't happen very often. Like, this was just a one-time thing.		
	8. Every relationship has its ups and downs – it's pretty normal.		
	9. George would be really upset if he knew we were talking about them like this.		
	Adherence for entire simulation	*100%*	*100%*
3. Homecoming Dance	*Starting statement:* I'm so annoyed with Ruth right now.		
You and your friend John have just left the Homecoming dance and are headed to an after-party. Ruth, John's date, decided to ride with her friends to the after-party. You know that John worked really hard to make tonight special. As you both are in the car headed to the after-party, he says to you…	1. I've worked really hard to make tonight special for her and she's acting so uninterested in me!	*100%*	*100%*
	2. Well when we took our picture together, I went in for a kiss and she pushed me away!		
	3. After all the stuff I did for her I expect AT LEAST a kiss or something.		
	4. Obviously I want more, but at the least, I expect a kiss.		
	5. I really thought she liked me. She's probably just playing hard to get.		
	6. **Once she starts drinking at the after-party, it'll be easier to hook up with her**	*100%*	*100%*
	7. **I'll show her a good time and she'll be glad afterwards.**	*100%*	*100%*
	8. You know, I did everything the guy is supposed to do – buy her all this stuff to show her I'm interested.		
	9. She needs to deliver on her end and show me some appreciation.		
	Adherence for entire simulation	*100%*	*100%*
4. The Hook-Up	*Starting statement:* Did you see that girl Erica in there?		
The following narration used to present this simulation: You're at a house party with your friend Ben, and you are getting ready to leave. Ben is pretty drunk – he spent most of the time at the party drinking with Erica, a girl in one of your classes. When you get to the car, Ben says to you…	1. Well, I was talking to her earlier and I'm really interested in her. She was flirting with me big time.		
	2. She's so hot. Do you mind waiting for a little bit if I see a potential with her?		
	3. I really want to hook up with her.		
	4. She wanted nothing to do with me yesterday and look at her now!		

Introduction to situation	Script requirements	Adherence to script	
		1-week	6-month
	5. I'm just going to go in and talk to her for a little bit, and if it seems like it's going to happen, you can find another ride home and I'll see if someone else can take me home.	98.7%	100%
	6. **She's really drunk, so I definitely think I can make this happen.**		
	7. She wasn't drunk when she was hitting on me at first. I mean she kissed me on the cheek.		
	8. I've been drinking more than her and I still know what's going on.		
	9. **I'm going to go back in and get her alone and try to make this happen.**	98.7%	100%
	Adherence for entire simulation	92.2%	90.2%

Note. Actor adherence to the entire script indicates percentage of the time actors said at least 8 of the 9 scripted statements at each assessment. Bold statements are those designed to indicate either imminent violence or that an act of violence just occurred.

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Table 2

Means, standard deviations, and correlations among study variables

Variable	1	2	3	4	5	6	7	8	M (SD)
1. Age	—								15.82 (1.17)
2. Grade	.81**	—							9.85 (0.83)
3. Sex (0 = female, 1 = male)	−.05	−.01	—						0.48 (0.50)
4. Efficacy for intervening	.12	.06	−.12	—					74.52 (20.24)
5. Responsibility for intervening	.06	−.10	−.19	.50**	—				4.76 (1.15)
6. Perceived consequences	.14	.04	.09	.39**	.41**	—			4.06 (5.72)
7. Bystander behavior, 1-week	.06	.01	−.23*	.27*	.09	−.01	—		4.07 (1.75)
8. Bystander behavior, 6-month	.04	−.06	−.20	.37**	.20	.13	.75**	—	4.71 (1.89)

*
$p < .05$.

**
$p < .01$.

Table 3

Means and standard deviations of perceived realism in IVE simulations at 1-week and 6-month assessments

Simulation	1-week	6-month
1. Drunk night	2.48 (.93)	2.06 (1.08)
2. Stormy relationship	2.64 (.94)	2.39 (1.05)
3. Homecoming dance	2.71 (.10)	2.27 (1.14)
4. The hook-up	2.67 (.97)	2.14 (1.11)

Note. Perceived realism scores range from 0–4. Higher scores indicate greater perceived realism.