

## ORIGINAL RESEARCH CONTRIBUTION

# Dating Violence: Outcomes Following a Brief Motivational Interviewing Intervention Among At-risk Adolescents in an Urban Emergency Department

Rebecca M. Cunningham, MD, Lauren K. Whiteside, MD, Stephen T. Chermack, PhD, Marc A. Zimmerman, PhD, Jean T. Shope, PhD, C. Raymond Bingham, PhD, Frederic C. Blow, PhD, and Maureen A. Walton, MPH, PhD

## Abstract

**Objectives:** A recent study demonstrated the efficacy of the SafERteens intervention in reducing peer violence among adolescents presenting to the emergency department (ED). The objective of this study was to determine the efficacy of this ED-based brief intervention (BI) on dating violence 1 year following the ED visit among the subsample of adolescents in the original randomized controlled trial reporting past-year dating violence.

**Methods:** Patients (aged 14 to 18 years) at an ED were eligible for inclusion if they had past-year violence and alcohol use. Participants were randomized to one of three conditions (BI delivered by a computer [CBI], BI delivered by a therapist and a computer (T+CBI), or control) and completed follow-ups at 3, 6, and 12 months. In addition to content on alcohol misuse and peer violence, adolescents reporting dating violence received a tailored module on dating violence. The outcome of interest was frequency of moderate and severe dating violence victimization and aggression (baseline and 3, 6, and 12 months after ED visit).

**Results:** Among eligible adolescents, 55% ( $n = 397$ ) reported dating violence and were included in these analyses. Compared to the control group (who received a resource brochure only), participants in the CBI showed reductions in moderate dating victimization at 3 months (inter-rater reliability [IRR] = 0.71; 95% confidence interval [CI] = 0.51 to 0.99;  $p < 0.05$ ) and 6 months (IRR = 0.56; 95% CI = 0.38 to 0.83;  $p < 0.01$ ). Models examining interaction effects were significant for the CBI on moderate dating victimization at 3 months (IRR = 0.81; 95% CI = 0.67 to 0.98;  $p < 0.05$ ) and 6 months (IRR = 0.81; 95% CI = 0.66 to 0.99;  $p < 0.05$ ). Significant interaction effects were found for the T+CBI on moderate dating violence victimization at 6 months (IRR = 0.81; 95% CI = 0.69 to 0.96;  $p < 0.01$ ) and 12 months (IRR = 0.76; 95% CI = 0.63 to 0.90;  $p < 0.001$ ) and severe dating violence victimization at 3 months (IRR = 0.76; 95% CI = 0.59 to 0.96;  $p < 0.05$ ).

**Conclusions:** ED-based BIs tailored to address multiple risk behaviors (i.e., peer violence, alcohol use, and dating violence) show promise for reducing moderate and severe dating victimization for up to 1 year following an ED visit.

ACADEMIC EMERGENCY MEDICINE 2013; 20:562–569 © 2013 by the Society for Academic Emergency Medicine

From the School of Public Health (RMC, MAZ, JTS, CRB), the Department of Emergency Medicine (RMC, LKW), and the Department of Psychiatry (LKW, STC, CRB, FCB, MAW), University of Michigan, Ann Arbor, MI; the Hurley Medical Center (RMC, LKW), Flint, MI; the University of Michigan Injury Center (RMC, LKW, STC, MAZ, JTS, CRB, FCB, MAW), Ann Arbor, MI; the Department of Veterans Affairs, Health Services Research and Development (STC, FCB), Ann Arbor, MI; the University of Michigan Transportation Research Institute (JTS, CRB), Ann Arbor, MI; and the Flint Youth Violence Prevention Center (MAZ), Flint, MI.

Received July 25, 2012; revision received November 27, 2012; accepted January 1, 2013.

This project was supported by a grant (No. 014889) from the National Institute on Alcohol Abuse and Alcoholism (NIAAA).

The authors have no potential conflicts of interest to disclose.

Trial registration: ClinicalTrials.gov identifier NCT00251212.

Supervising Editor: Lee Wilbur, MD.

Address for correspondence and reprints: Rebecca M. Cunningham, MD; e-mail: stroh@umich.edu.

Dating violence is a serious cause of emotional and physical injury among adolescents; one in 10 high school students report being the victim of violence from a dating partner.<sup>1</sup> Identifying and intervening early with adolescents involved in dating violence has important public health implications. Experiencing dating violence during adolescence increases the risk of involvement with violence among intimate relationships as an adult.<sup>2</sup>

Dating violence leads to a considerable number of emergency department (ED) visits.<sup>3,4</sup> Carroll et al.<sup>5</sup> found that over 50% of youth using a pediatric ED reported physical or sexual violence in their dating relationships. Despite the magnitude of the issue, dating violence among adolescents can be prevented. The Centers for Disease Control and Prevention characterizes adolescence as a window of opportunity—a time for adolescents to prepare for future relationships by learning healthy relationship skills such as negotiation, compromise, and conflict resolution.<sup>6</sup>

Due to the unique opportunity for staff at the ED to intervene on dating violence, the Joint Commission and the American Medical Association have standards, recommendations, and guidelines for the universal screening of patients over the age of 14 years in the ED for dating and intimate partner violence.<sup>7,8</sup> Despite these guidelines, low numbers of patients are actually being screened.<sup>9–11</sup> This lack of screening by medical staff in the ED has reportedly been due to a lack of dating violence knowledge, time constraints, lack of belief in the patient's ability to change behavior, and a lack of available interventions or resources for dating violence victims after a positive screen is conducted.<sup>11–13</sup> To date, no ED-based intervention studies focusing on preventing dating violence among adolescents have been reported.

This article presents findings from secondary analyses of dating violence outcomes from a randomized control trial (RCT; the SafERteens Study).<sup>14</sup> The purpose of the overall SafERteens study was to examine the effectiveness of a brief intervention (BI) on a population of adolescents who sought care in an urban ED.<sup>14,15</sup> The primary goal of the intervention was to reduce peer aggression and alcohol use. The single-session BI was delivered by a computer alone (CBI) or by a therapist with computer assistance (T+CBI), using principles of motivational interviewing.

This planned subgroup analysis of the RCT is limited to adolescents who screened positive for past-year dating violence and who received tailored dating violence intervention messages in addition to the peer violence and alcohol use messages. No prior work has published any dating violence outcomes from the SafERteens intervention. Our hypotheses were: 1) the BIs will be more effective than the control condition on reducing moderate and severe dating violence aggression and victimization at 3, 6, and 12 months and 2) youth with more frequent dating violence history at baseline will be more receptive to the dating violence component of the interventions and the interventions will demonstrate increased efficacy among these youth.

## METHODS

### Study Design

This was a planned retrospective analysis of data from the SafERteens study. Research procedures were approved by the University of Michigan and Hurley Medical Center Institutional Review Boards for Human Subjects. A certificate of confidentiality was obtained from the National Institute on Alcohol Abuse and Alcoholism.

### Study Setting and Population

The SafERteens RCT took place in Flint, Michigan, at a Level I trauma center (Hurley Medical Center). Detailed descriptions of screening procedures can be found in previous manuscripts.<sup>14,15</sup> Participants (aged 14 to 18 years old) screening positive for both past-year aggression/violence<sup>14</sup> and alcohol consumption (i.e., consumed alcohol more than two or three times in the past year<sup>16</sup>) were recruited for the RCT.

### Study Protocol

Those eligible for the RCT completed a computerized baseline assessment and were randomized by a computer-generated program to one of three groups (T+CBI, CBI, or control). These groups were stratified by sex and age: 14 and 15 years, 16 to 18 years. Investigators were blinded to the intervention condition of the participants. Because this secondary analysis focused on dating violence, only participants who endorsed dating violence at baseline (and who were therefore assigned to receive tailored content specifically related to dating violence as part of the T+CBI or CBI) were included in this analysis of dating violence outcomes ( $n = 397$  of 726). The control condition in the RCT was enhanced usual care and consisted of a brochure of resources that was given to participants after completion of baseline surveys.

**Follow-up Interviews.** Computerized assessments were self-administered at 3, 6, and 12 months. For detailed description see prior manuscripts.<sup>14,15</sup> Measures were obtained via a self-administered computer survey.<sup>17–19</sup> Dating victimization was measured using a collapsed version of the Conflict in Adolescent Dating Relationships Inventory (CADRI),<sup>20</sup> which asks about fighting with someone you are dating, “going with,” or consider to be a boy-/girlfriend. The CADRI assesses victimization and aggression based on a physical abuse scale ( $\alpha = 0.83^{20}$ ). The original four-item subscale was collapsed into two past-year subscales assessing the frequency of victimization as moderate (e.g., threw something that could hurt you; twisted your arm or hair; pushed you; shoved, grabbed, or slapped you) and severe (e.g., punched or hit you with something that could hurt; choked; slammed against a wall; beat you up; burned or scalded you on purpose; kicked you; or used a knife or gun on you). Dating aggression was asked with parallel questions. Both the moderate and the severe scales were evaluated separately in analysis, as severe dating violence behaviors (i.e., choked) may require a different intensity of intervention efforts than moderate dating violence behaviors (i.e., slapped). Response choices were modified to be identical to the

Conflict Tactics Survey (CTS2)<sup>21</sup>: never, one time, two times, three to five times, six to 10 times, 11 to 20 times, and more than 20 times. The response choices, modeled after the CTS2, were chosen to be consistent in the response choices throughout the survey (since participants would answer the CTS2 for peer violence prior to these questions). The scale was analyzed using the standard approach of Strauss et al.<sup>22</sup> Specifically the midpoint of each response is used (e.g., 3 to 5 = 4; 5 to 8 = 7) to create a continuous frequency variable (see Data Supplement S1, available as supporting information in the online version of this paper, for exact survey questions).

**SafERteens Intervention Content.** Methodology, including a description of the intervention, can be found in prior manuscripts.<sup>15,23</sup> Specific to this analysis, adolescents who endorsed dating violence in the baseline survey received specific tailored content related to dating violence prevention strategies during a role play.

**T+CBI.** For adolescents reporting dating violence, in one of the role-play sections of the BI, the computer prompted therapists to discuss how the adolescent would handle an argument with a dating partner. The therapist provided information including weighing the pros and cons of talking to a partner when either the participant or his or her partner is drunk or angry. Safety plans were discussed if the participant felt afraid of a partner.

**CBI.** The CBI was a stand-alone interactive animated program,<sup>24</sup> and was tailored to match the sex of the participant. Specifically for dating violence, in one of the role-plays, a situation was presented in which friends were talking about a problem an adolescent was having with a boyfriend or girlfriend, setting the stage that the couple were angry with each other. The adolescent was then pressured to drink alcohol and go talk with the angry, intoxicated partner. The intervention messages included the increased likelihood of violence when drinking, waiting to resolve conflicts until both partners are calm and sober, anger management strategies, if your partner has hit you before or you are afraid of him or her do not talk to the partner alone, and ask someone for help. A brochure with numbers for domestic violence hotlines was given to participants in all conditions at the end of the intervention.

### Data Analysis

Analyses were conducted using SAS Version 9 (SAS Institute, Inc., Cary, NC). First, to examine main outcomes, the efficacy of the CBI and T+CBI (compared to control condition) analyses were conducted using four separate Poisson regression models: 1) moderate dating victimization, 2) severe dating victimization, 3) moderate dating aggression, and 4) severe dating aggression, each at 3-, 6-, and 12-month follow-up assessments (Poisson regression was selected based on the distribution of the dependent variables). To assess the fit of all models, the goodness-of-fit chi-square test was used to verify the absence of overdispersion in the data. Independent variables included baseline dating violence (e.g., moderate or severe victimization or aggression consistent with the dependent variable) and intervention

condition (CBI or T+CBI, with control as the reference group). It is common in the literature to examine moderate dating violence separately from severe dating violence.<sup>25–29</sup> The behavior of a “push” is much different than “used a gun on, kicked or punched” in terms of both physical and mental health outcomes.<sup>30</sup> There were no significant differences in examined covariates between the three study groups. Therefore, we did not control for covariates in the models.

Cohen’s effect sizes for continuous variables were calculated.<sup>31</sup> Note that the study was not powered to evaluate effects of the intervention by sex. There was sufficient power to evaluate moderate dating victimization as a dependent variable (for example, we found a mean difference of 0.20 [pooled SD  $\pm$ 0.6] for moderate victimization; given an alpha level of 0.05, to achieve a power of 0.80,  $n \geq 112$  participants per group is required). However, it is critical to note that all analysis for aggression as well as severe victimization may be underpowered (specifically, we found a mean difference for moderate and severe dating aggression between 0.10 to 0.14, pooled SD  $\pm$ 0.42; to achieve a power of 0.80, we would need at least 194 participants per group to detect main effects).

Next, additional Poisson models were conducted to examine whether the efficacy of the interventions was moderated by the frequency of involvement with baseline dating victimization (including the interaction of baseline dating victimization frequency by intervention condition). Such models are commonly used for determination of subgroups for which the intervention was efficacious.<sup>32–43</sup> As for the main effect analyses described above, separate analyses were run for the frequency of moderate and severe dating victimization; independent variables included baseline dating victimization, intervention conditions (CBI and T+CBI vs. control), and the interaction of baseline dating victimization frequency by intervention conditions.

## RESULTS

Figure 1 provides enrollment data. No significant differences by group assignment were noted in the sample, which was 35.5% male ( $n = 141$ ) and 63.0% African American ( $n = 250$ ) and had a mean ( $\pm$ SD) age of 16.8 ( $\pm$ 1.3) years, with 60.7% receiving public assistance. Table 1 presents the mean and percentage change over time in frequency of dating victimization in the three groups.

### Main Effects of Interventions on Dating Victimization and Dating Aggression

Controlling for baseline moderate victimization, the CBI (compared to control) significantly predicted a reduction in moderate dating victimization at 3 months (inter-rater reliability [IRR] = 0.71; 95% CI = 0.51 to 0.99;  $p < 0.05$ , effect size 0.12) and 6 months (IRR = 0.56; 95% CI = 0.38 to 0.83;  $p < 0.01$ , effect size 0.18), but not at 12 months. The T+CBI (compared to control) did not significantly affect moderate dating victimization at any follow-up. Neither intervention had main effects on severe dating victimization or moderate or severe aggression at any follow-up (data not presented). There-

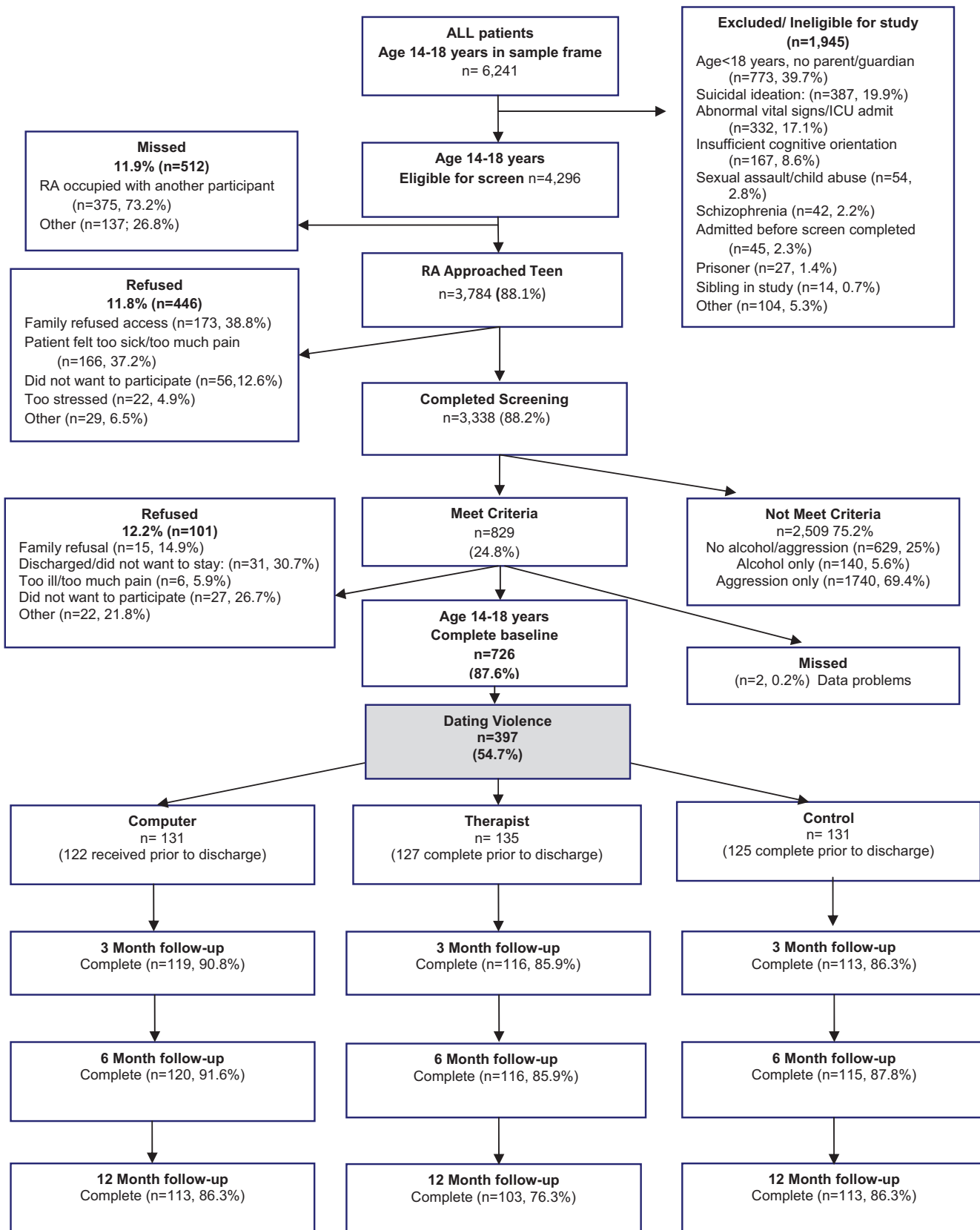


Figure 1. SafERteens flow chart (September 2006 to September 2009). ICU = intensive care unit; RA = research assistant.



Table 1  
Mean Episodes and Percentage Change for Significant Main Effects on Dating Victimization

Variable	Mean Baseline Episodes	Mean Episodes at 3 Months	Change at 3 Months From Baseline	Mean Episodes at 6 Months	Change at 6 Months From Baseline	Mean Episodes at 12 Months	Change at 12 Months From Baseline
<b>Moderate victimization</b>							
Computer	1.31	0.62	-0.69 (-52.7%)	0.38	-0.93 (-71.0%)	0.61	-0.69 (-52.7%)
Therapist	1.53	0.90	-0.63 (-41.2%)	0.79	-0.74 (-48.4%)	0.78	-0.75 (-49.0%)
Control	1.41	0.90	-0.51 (-36.2%)	0.76	-0.65 (-46.1%)	0.74	-0.56 (-39.7%)
<b>Severe victimization</b>							
Computer	0.47	0.32	-0.15 (-31.9%)	0.29	-0.18 (-38.3%)	0.36	-0.11 (-23.4%)
Therapist	0.66	0.46	-0.20 (-30.3%)	0.42	-0.24 (-36.4%)	0.48	-0.18 (-27.2%)
Control	0.60	0.44	-0.16 (-26.7%)	0.39	-0.21 (-35.0%)	0.47	-0.13 (-21.7%)

fore, subsequent analyses focus on dating victimization frequency.

### Frequency of Moderate Dating Victimization

Models examining the interaction of baseline dating victimization frequency by intervention condition were conducted and found that among adolescents who reported more than approximately four episodes of moderate baseline dating victimization in the past year, the CBI was more effective than the control condition in reducing moderate dating victimization at 3 months (IRR = 0.81; 95% CI = 0.67 to 0.98;  $p < 0.05$ ) and 6 months (IRR = 0.81; 95% CI = 0.66 to 0.99;  $p < 0.05$ ). Among adolescents with a higher frequency of moderate dating victimization at baseline (more than approximately eight times in the past year), the T+CBI was more effective than the control condition in reducing moderate dating victimization at 6 (IRR = 0.81; 95% CI = 0.69 to 0.96;  $p < 0.01$ ) and 12 months (IRR = 0.76; 95% CI = 0.63 to 0.90;  $p < 0.001$ ). Thus, the T+CBI effect is greatest at reducing dating violence among participants who more frequently endorse dating victimization at baseline.

### Frequency of Severe Dating Victimization

Adolescents with a higher baseline frequency of severe dating violence victimization (more than approximately eight times in the past year) in the T+CBI group were more likely than those in the control group to report decreases in severe dating victimization at 3 months (IRR = 0.76; 95% CI = 0.59 to 0.96;  $p < 0.05$ ); this effect was not significant at 6 and 12 months. The CBI  $\times$  baseline severe victimization interaction term was not significant.

## DISCUSSION

The SafERteens CBI, delivered during an ED visit, decreased adolescent dating violence victimization up to 6 months post-BI among at-risk youth. Among those youth with more frequent past experience with severe dating violence (more than eight episodes), the therapist intervention reduced future episodes over the 12 months after the ED visit. Overall, data presented here extend the prior findings of SafERteens to provide novel findings on the effect of the BI on dating violence among youth in an ED setting, while highlighting the

role of stand-alone computer interventions in busy health care settings.

The efficacy of the CBI, as a stand-alone intervention without requiring a trained therapist, to reduce dating victimization represents a novel and important contribution to both the ED and the BI literature. Although small, effect sizes found in this study for the CBI are similar to prior prevention literature in which effect sizes  $\geq 0.10$  are considered clinically meaningful.<sup>44-50</sup> The Cohen effect size for the main effect of moderate dating violence was 0.12 at 3 months and 0.18 at 6 months. A small effect size was expected in this analysis, since dating violence was only from one component of the BI (which focused mainly on peer violence and alcohol use, with a small portion devoted to dating violence among youth who reported dating violence).

It is noteworthy that both delivery modes of the intervention, computer and therapist, were more successful at decreasing dating victimization when the adolescent reported a stronger history of past dating violence (i.e., more episodes). In addition, the therapist condition was also effective in the short term at reducing not only moderate but also severe dating victimization compared to the control condition for those adolescents with stronger histories of past severe dating violence. It may be that the salience of the intervention messages was increased for adolescents with more dating violence experience. Alternatively, it may be that floor effects attenuated the detection of intervention effects among those with less exposure. Thus, to increase the efficacy of the interventions and to focus limited resources, future interventions could consider focusing on adolescents with higher baseline exposure to dating violence. Alternatively, given the importance of preventing dating violence, the computer intervention could be given to all adolescents reporting dating violence, followed by the therapist intervention for more frequent or severe dating violence.

It is important to recognize that the computer also played a role in the therapist BI in this analysis. The computerized survey identified youth with dating violence and a tailored screen prompted the therapist to discuss dating violence. These prompts to address dating violence may be essential to ensure fidelity of an intervention in a busy clinical setting.

These results are clinically relevant to emergency physicians as they may help increase the motivation to complete mandated screening for intimate partner violence and dating violence if it is more clearly supported with

data that there are promising ED-based interventions available that will reduce future dating victimization.

## LIMITATIONS

These novel findings with small effect sizes require replication in other EDs and in a full RCT focused only on dating violence content. Replication could include adolescents presenting during overnight shifts, with acute suicidal ideation/attempt or sexual assault, or with different patient samples (e.g., rural/suburban settings, different racial/ethnic compositions such as Hispanics). Adolescents presenting to the ED for sexual assault were excluded from this study, as the focus of the full RCT was peer violence, and those seeking care for sexual assault are already receiving some social services and referrals that differ substantially from other youth.

Although self-reported data are a potential limitation, the use of self-administered computerized assessments helps to reduce reactivity; further, reliability and validity are increased when confidentiality is assured.<sup>51–55</sup> It should be noted that the original CADRI scale was condensed into two questions. We do not expect that this had any effect on the validity of the scale since the content of the scale remained (see Data Supplement S1). Finally, it should be noted that youth were screened into this trial for aggressive behaviors and not behaviors solely related to victimization. We do not know how many screened participants had victimization only, since these questions were not obtained until the baseline survey. Nonetheless, due to the high levels of reciprocal violence by adolescents involved with dating violence,<sup>56,57</sup> it is likely that these numbers are small. Future studies should include victimization in their screening questions as participants with victimization only may have different outcomes from this intervention, and those conclusions cannot be drawn from this sample.

## CONCLUSIONS

Given the morbidity and health consequences associated with dating violence among adolescents, ED-based brief interventions addressing multiple risk behaviors (peer violence and alcohol use) including dating violence content, delivered feasibly and efficiently on a computer, could have important public health effects on the lives of at-risk adolescents and show promise for reducing moderate and severe dating victimization following an ED visit.

The authors thank project staff Bianca Burch, Carrie Smolenski, Rebecca Clive, Heather Smith, Emily Sweezee, and Annette Solomon for their work on the project; also, we thank Pat Bergeron for administrative assistance and Linping Duan for statistical support. Finally, special thanks are owed to the patients and medical staff at Hurley Medical Center for their support of this project.

## References

- Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance—United States, 2009. *MMWR Surv Summ.* 2010;59:1–142.
- Smith PH, White JW, Holland LJ. A longitudinal perspective on dating violence among adolescent and college-age women. *Am J Public Health.* 2003; 93:1104–9.
- McLeer SV, Anwar R. A study of battered women presenting in an emergency department. *Am J Public Health.* 1989; 79:65–6.
- Pakieser RA, Lenaghan PA, Muelleman RL. Battered women: where they go for help. *J Emerg Nurs.* 1998; 24:16–9.
- Carroll BC, Raj A, Noel SE, Bauchner H. Dating violence among adolescents presenting to a pediatric emergency department. *Arch Pediatr Adolesc Med.* 2011; 165:1101–6.
- Wolfe DA, Wekerle C, Scott K. *Alternatives to Violence: Empowering Youth to Develop Healthy Relationships.* Thousand Oaks, CA: Sage, 1997.
- Joint Commission. Standards for Long Term Care. Available at: <http://www.jcrinc.com/Joint-Commission-Requirements/Long-Term-Care/>. Accessed Mar 19, 2013.
- National Advisory Council on Violence and Abuse. Policy Compendium: April 2008. H-515.965. 2008. Available at: [www.ama-assn.org/ama1/pub/upload/mm/386/vio\\_policy\\_comp.pdf](http://www.ama-assn.org/ama1/pub/upload/mm/386/vio_policy_comp.pdf). Accessed March 19, 2013.
- Glass N, Dearwater S, Campbell J. Intimate partner violence screening and intervention: data from eleven Pennsylvania and California community hospital emergency departments. *J Emerg Nurs.* 2001; 27:141–9.
- Daugherty JD, Houry DE. Intimate partner violence screening in the emergency department. *J Postgrad Med.* 2008; 54:301–5.
- Rhodes KV. Taking a fresh look at routine screening for intimate partner violence: what can we do about what we know? *Mayo Clin Proc.* 2012; 87:419–23.
- Gutmanis I, Beynon C, Tutty L, Wathen CN, MacMillan HL. Factors influencing identification of and response to intimate partner violence: a survey of physicians and nurses. *BMC Public Health.* 2007; 7:12.
- Trinkley DK, Bryan SH, Speroni KG, Jones RA, Allen HA. Evaluation of domestic violence screening and positive screen rates in rural hospital emergency departments. *J Rural Nurs.* 2012; 12:78.
- Walton MA, Chermack ST, Shope JT, et al. Effects of a brief intervention for reducing violence and alcohol misuse among adolescents: a randomized controlled trial. *JAMA* 2010; 304:527–35.
- Cunningham RM, Chermack ST, Zimmerman MA, et al. Brief motivational interviewing intervention for peer violence and alcohol use in teens: one-year follow-up. *Pediatrics.* 2012; 129:1083–90.
- University of North Carolina. The National Longitudinal Study of Adolescent Health: Research Design 2003. Available at: <http://www.cpc.unc.edu/projects/addhealth/design>. Accessed Mar 19, 2013.
- Metzger DS, Koblin B, Turner C, et al. Randomized controlled trial of audio computer-assisted self-interviewing: utility and acceptability in longitudinal studies. HIVNET Vaccine Preparedness Study Protocol Team. *Am J Epidemiol.* 2000; 152: 99–106.

18. Murphy DA, Durako S, Muenz LR, Wilson CM. Marijuana use among HIV-positive and high-risk adolescents: a comparison of self-report through audio computer-assisted self-administered interviewing and urinalysis. *Am J Epidemiol.* 2000; 152:805–13.
19. Turner CF, Ku L, Rogers SM, Lindberg LD, Pleck JH, Sonenstein FL. Adolescent sexual behavior, drug use, and violence: increased reporting with computer survey technology. *Science.* 1998; 280:867–73.
20. Wolfe DA, Scott K, Reitzel-Jaffe D, Wekerle C, Grasley C, Straatman AL. Development and validation of the Conflict in Adolescent Dating Relationships Inventory. *Psychol Assess.* 2001; 13:277–93.
21. Straus MA. Measuring intrafamily conflict and violence: the conflict tactics (CT) scales. *J Marriage Fam.* 1979; 41:633–44.
22. Strauss M, Hamby S, McCoy-Boney S, Sugarman D. The revised Conflicts Tactics Scales (CTS2). *J Family Iss.* 1996; 17:283–316.
23. Walton MA, Barry KT, Resko S, et al. Substance use among urban adolescents presenting to indigent primary care clinics. Annual Meeting of the College on Problems of Drug Dependence. Scottsdale, AZ, June 11–14, 2010.
24. Cunningham RM, Walton MA, Goldstein A, et al. Three-month follow-up of brief computerized and therapist interventions for alcohol and violence among teens. *Acad Emerg Med.* 2009; 16:1193–207.
25. Walton MA, Cunningham RM, Goldstein AL, et al. Rates and correlates of violent behaviors among adolescents treated in an urban emergency department. *J Adolesc Health.* 2009; 45:77–83.
26. Molidor C, Tolman RM. Gender and contextual factors in adolescent dating violence. *Violence Against Women.* 1998; 4:180–94.
27. Foshee VA, Reyes HL, Ennett ST, et al. Risk and protective factors distinguishing profiles of adolescent peer and dating violence perpetration. *J Adolesc Health.* 2011; 48:344–50.
28. Ranney ML, Whiteside L, Walton MA, Chermack ST, Zimmerman MA, Cunningham RM. Sex differences in characteristics of adolescents presenting to the emergency department with acute assault-related injury. *Acad Emerg Med.* 2011; 18:1027–35.
29. World Health Organization. Violence Against Women: WHO Consultation. Geneva, Switzerland: World Health Organization, 1996.
30. Coker AL, McKeown RE, Sanderson M, Davis KE, Valois RF, Huebner ES. Severe dating violence and quality of life among south carolina high school students. *Am J Prev Med.* 2000; 19:220–7.
31. Hedges LV, Olkin I. *Statistical Methods for Meta-Analysis.* San Diego, CA: Academic Press, 1985.
32. Webster-Stratton C, Hollinsworth T, Kolpacoff M. The long-term effectiveness and clinical significance of three cost-effective training programs for families with conduct-problem children. *J Consult Clin Psychol.* 1989; 57:550–3.
33. Kraemer HC, Wilson GT, Fairburn CG, Agras WS. Mediators and moderators of treatment effects in randomized clinical trials. *Arch Gen Psychiatry.* 2002; 59:877–83.
34. Ahnquist J, Wamala SP, Lindstrom M. Social determinants of health—a question of social or economic capital? Interaction effects of socioeconomic factors on health outcomes. *Soc Sci Med.* 2012; 74:930–9.
35. Wrosch C, Sabiston CM. Goal adjustment, physical and sedentary activity, and well-being and health among breast cancer survivors. *PsychoOncology.* 2013; 22(3):581–9.
36. Spirito A, Monti PM, Barnett NP, et al. A randomized clinical trial of a brief motivational intervention for alcohol-positive adolescents treated in an emergency department. *J Pediatr.* 2004; 145:396–402.
37. Walton M, Goldstein AL, Chermack S, et al. Brief alcohol intervention in the emergency department: moderators of effectiveness. *J Stud Alcohol.* 2008; 69:550–60.
38. Dodge KA, McCourt SN. Translating models of antisocial behavioral development into efficacious intervention policy to prevent adolescent violence. *Dev Psychobiol.* 2010; 52:277–85.
39. Gudino OG, Nadeem E, Kataoka SH, Lau AS. Reinforcement sensitivity and risk for psychopathology following exposure to violence: a vulnerability-specificity model in Latino youth. *Child Psychiatry Hum Dev.* 2012; 43:306–21.
40. Bierman KL, Coie JD, Dodge KA, et al. The difficulty of maintaining positive intervention effects: a look at disruptive behavior, deviant peer relations, and social skills during the middle school years. *J Early Adolesc.* 2010; 30:593–624.
41. Kaynak O, Lepore SJ, Kliwer WL. Social support and social constraints moderate the relation between community violence exposure and depressive symptoms in an urban adolescent sample. *J Soc Clin Psychology.* 2011; 30:250–69.
42. Mason WA, Kosterman R, Haggerty KP, et al. Gender moderation and social developmental mediation of the effect of a family-focused substance use preventive intervention on young adult alcohol abuse. *Addict Behav.* 2009; 34:599–605.
43. Oesterle S, Hawkins JD, Fagan AA, Abbott RD, Catalano RF. Testing the universality of the effects of the communities that care prevention system for preventing adolescent drug use and delinquency. *Prev Sci.* 2010; 11:411–23.
44. Rundall TG, Bruvold WH. A meta-analysis of school-based smoking and alcohol use prevention programs. *Health Educ Q.* 1988; 15:317–34.
45. White D, Pitts M. Educating young people about drugs: a systematic review. *Addiction.* 1998; 93:1475–87.
46. Cuijpers P. Effective ingredients of school-based drug prevention programs. A systematic review. *Addict Behav.* 2002; 27:1009–23.
47. Farrington DP. The effectiveness of school-based violence prevention programs. *Arch Pediatr Adolesc Med.* 2002; 156:748–9.
48. Cooper WO, Lutenbacher M, Faccia K. Components of effective youth violence prevention programs for 7- to 14-year-olds. *Arch Pediatr Adolesc Med.* 2000; 154:1134–9.

49. Gottfredson DC, Wilson DB. Characteristics of effective school-based substance abuse prevention. *Prev Sci*. 2003; 4:27–38.
50. Cohen J. A Power Primer. *Psychological Bull*. 1992; 112:155–9.
51. Gray TA, Wish ED. Substance Abuse Need for Treatment among Arrestees (SANTA) in Maryland. College Park, MD: Center for Substance Abuse Research, 1998.
52. Thornberry TP, Krohn MD. The self-report method of measuring delinquency and crime. In: Duffee D, ed. *Measurement and Analysis of Crime and Justice: Criminal Justice 2000*. Washington, DC: US Department of Justice, Office of Justice Programs; 2000:pp. 33–83.
53. Buchan BJ, L Dennis M, Tims FM, Diamond GS. Cannabis use: consistency and validity of self-report, on-site urine testing and laboratory testing. *Addiction*. 2002; 97(Suppl 1):98–108.
54. Dennis M, Titus JC, Diamond G, et al. The cannabis youth treatment (CYT) experiment: rationale, study design and analysis plans. *Addiction*. 2002; 97(Suppl 1):16–34.
55. Brener ND, Billy JO, Grady WR. Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: evidence from the scientific literature. *J Adolesc Health*. 2003; 33:436–57.
56. Walton MA, Cunningham R, Chermack ST, et al. Predictors of violence following emergency department visit for cocaine-related chest pain. *Drug Alcohol Depend*. 2009; 99:79–88.
57. Swahn MH, Alemdar M, Whitaker DJ. Nonreciprocal and reciprocal dating violence and injury occurrence among urban youth. *West J Emerg Med*. 2010; 11:264–8.

### Supporting Information

The following supporting information is available in the online version of this paper:

Data S1. Questions from the survey to measure dating victimization and dating aggression.

### VIRTUAL ISSUES

"Virtual Issues" are now a key feature of *Academic Emergency Medicine's* home page. A virtual issue is basically just a collection of articles on a given topic. The idea is that a reader will go there to look for a particular issue, but then will see our other offerings on that topic, as well, increasing our full-text download numbers and helping insure the broadest dissemination of our authors' work.

We now have five "virtual issues" online. Go to the journal's home page on the Wiley Online Library (WOL) platform - "Find Issues" on the left-hand side and click on the feature. In addition to the initial geriatrics one, the following are up and running on: ultrasound, toxicology, injury prevention, statistics and research methodology. Again, consult the "Find Issues" area and click on the desired issue. They can also be accessed from the "Virtual Issues" module, right column, on the journal's home page.

[http://onlinelibrary.wiley.com/journal/10.1111\(ISSN\)1553-2712](http://onlinelibrary.wiley.com/journal/10.1111(ISSN)1553-2712).

STAY TUNED FOR UPDATES AS MORE VIRTUAL ISSUES ARE ADDED. IF YOU WOULD LIKE TO COMPOSE ONE, PLS CONTACT DAVE CONE, MD, or SANDI ARJONA.