An Online Bystander Intervention Program for the Prevention of Sexual Violence

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Objective: Because of its high prevalence and serious consequences for victims, sexual violence is a significant problem on college campuses. Sexual assault prevention programs based on the bystander intervention model have been shown to be effective; however, current programs are limited in terms of ease of distribution. To address this issue, we developed and evaluated "Take Care," an online bystander intervention program. To our knowledge, this is the first empirical evaluation of an online bystander intervention program designed to prevent sexual violence. ***Method:*** Ninety-three participants (80.6% female, 19.4% male) recruited from social psychology classes at a midsize university were randomly assigned to view 1 of 2 online programs: Take Care or a control program on study skills. Before viewing the programs, participants completed measures of bystander behaviors and feelings of efficacy for performing such behaviors. Measures were administered again postintervention and at a 2-month follow-up assessment. ***Results:*** Participants who viewed Take Care reported greater efficacy for engaging in bystander behaviors at postintervention and 2 months after treatment, compared with those who viewed the control program. In addition, participants who viewed Take Care reported performing relatively more bystander behaviors for friends at the 2-month follow-up assessment, compared with participants who viewed the control program. ***Conclusions:*** These results suggest that sexual violence prevention programs may be effectively adapted to an online format.

Keywords: bystander behavior, college students, online intervention, prevention programs, sexual violence

Sexual violence, which includes both sexual coercion and assault, is a significant problem on college campuses because of its high prevalence and adverse consequences. Estimates from surveys of college students indicate that 19% to 25% of women experience sexual violence while they are in college (Fisher, Cullen, & Turner, 2000; Krebs, Lindquist, Warner, Fisher, & Martin, 2009). Victims of sexual violence are at increased risk for a variety of adjustment difficulties, including trauma symptoms, eating disorders, diminished academic performance, and abuse of drugs and alcohol (Banyard & Cross, 2008; Stewart, Sebastiani, Delgado, & Lopez, 1996). Although numerous colleges have introduced programs to prevent sexual violence, and many incorporate such programs into their standard orientation curricula, their record of success in reducing the prevalence of sexual victimization on college campuses is poor (Casey & Nurius, 2006). Some have suggested that this may be attributable to shortcomings of the programs themselves (Anderson & Whiston, 2005; Antle, Sullivan, Dryden, Karam, & Barbee, 2011; Ferguson, San Miguel, Kilburn, & Sanchez, 2007; Yeater

& O'Donohue, 1999). The present research evaluates a novel prevention program, which is designed to address some of the shortcomings of existing programs and change behaviors that can potentially reduce the prevalence of sexual violence on college campuses.

The majority of college sexual violence prevention programs include a focus on warning participants about the penalties for perpetrating sexual assault, or teaching participants skills for reducing victimization risk. Such programs may fail to engage their target audience, however, because individual students may not consider themselves to be a potential perpetrator or at particular risk for victimization (Foubert, Langhinrichsen-Rohling, Brasfield, & Hill, 2010; Potter, Krider, & McMahon, 2000). To overcome this, several program developers have taken another approach, targeting students not as potential victims or perpetrators, but rather as agents whose actions can reduce the risk that sexual violence will be committed by others, toward others. In programs using this approach, the responsibility for reducing sexual violence is thus extended beyond the victim-perpetrator dyad, to include the entire campus community. Such programs are commonly grounded in what is known as the bystander intervention model.

Bystander interventions for sexual assault prevention are based, in part, on the early work of Darley and Latané (1968), who identified the "bystander effect" and factors that decrease bystanders' willingness to intervene when they witness sexual violence or high-risk situations (i.e., those that might result in sexual violence). Bystander intervention programs aim to decrease sexual violence by increasing bystanders' efficacy and willingness to engage in behaviors to deter potential sexual assault and to come

to the aid of a victim—or potential victim—of sexual assault. Examples of such behaviors include walking a person home from a party who has had too much to drink or confronting a person seen drugging another person's drink. Increasing bystander behaviors throughout a campus community is theorized to create a safer environment that is less tolerant of sexual coercion and violence. Many bystander intervention programs attempt to promote bystander behaviors by addressing theorized barriers to engaging in such behaviors. These barriers include, but are not limited to: failing to recognize or identify high-risk situations for sexual violence, not knowing what to say or do to intervene in high-risk situations, and not feeling a sense of responsibility for intervening (thinking that it is "none of my business" or that someone else should intervene; Burn, 2009).

A number of evaluations of bystander intervention programs have been published, although only a few of these measured bystander behaviors as an outcome. Among those few, some bystander programs have been shown to increase bystander behaviors relative to comparison groups (e.g., Banyard, Moynihan, & Plante, 2007; Coker et al., 2011; Potter & Moynihan, 2011). Some bystander programs have also been shown to increase feelings of efficacy for engaging in bystander behaviors (e.g., Banyard, Moynihan, & Crossman, 2009; Banyard et al., 2007; Foubert et al., 2010; Moynihan & Banyard, 2008). Other positive effects include reducing sexual-violence-facilitating beliefs (Banyard et al., 2009; Coker et al., 2011; Foubert et al., 2010). Despite positive findings, however, the bystander intervention programs that have been evaluated are not ideal for reaching entire campus communities. For example, many are conducted in a small-group format (e.g., 20 students at a time), led by a male and female peer facilitator team. Institutions must thus invest considerable time and resources in training and maintaining the staff necessary to implement the intervention, and it can take weeks, if not months on larger campuses, to deliver them across a substantial number of students. Unfortunately, reducing the financial and logistical burden of implementation by increasing the size of the groups has not been found to be viable (Coker et al., 2011). In addition, aspects of such programs can be unappealing to students. For example, to participate in them, students must attend scheduled sessions at a predetermined location on campus. A program that allows students to participate whenever and wherever they wish may yield greater student participation and involvement. Also, although there are benefits to offering a sexual violence prevention program in a group setting, some students may be uncomfortable viewing materials or discussing this sensitive subject in the presence of others or in a mixed-gender group.

To address these limitations, we developed Take Care, an online bystander intervention that could be disseminated broadly and cost-effectively. Online interventions have been shown to be effective for a variety of health behaviors including quitting smoking, reducing alcohol consumption, and maintaining a healthy weight (Cugelman, Thelwall, & Dawes, 2011). Online personalized drinking interventions for alcohol misuse on college campuses have been shown to be as effective as personalized feedback interventions that were delivered in other formats including in-person counseling sessions (Walters & Neighbors, 2005). In addition, online interventions tend to be briefer than in-person interventions; in fact, results of a meta-analysis indicate that briefer online interventions produce larger effects (Cugelman et al., 2011).

Online interventions can also reach large groups of students, as well as specific subgroups of students not likely to be reached through traditional means (White et al., 2010). However, despite the potential for wide dissemination and low cost, the efficacy of an online bystander intervention for sexual violence prevention is unknown. In particular, it is not clear whether an online program can produce changes in students' bystander behaviors.

This research examined whether Take Care changed participants' bystander behaviors. The goals of the program were to promote bystander behaviors by increasing participants' efficacy for intervening in situations in which a friend might be exposed to or at risk for sexual violence. This strategy is consistent with theory and research on the "bystander effect," and addresses a key factor (feelings of efficacy) that is theorized to impact bystanders' willingness to intervene when they see sexual violence taking place or when they see high-risk situations that might result in sexual violence (Burn, 2009). Take Care was designed to increase efficacy by presenting students with potentially risky or problematic situations and demonstrating a range of possible actions that could be taken to reduce the risk for sexual violence in these situations. Specifically, the program gives students examples of what they could say or do to intervene in potentially high-risk situations. The program aimed to make students aware that simply doing *something* to change the situation can prevent a friend from being harmed. By focusing on the idea of taking "some" action on behalf of the friend rather than taking the "right" action, Take Care aimed to increase students' feelings of efficacy for engaging in prosocial bystander behaviors.

Our approach differs from that of many earlier bystander intervention programs in several important ways. First, Take Care was delivered to students individually and was presented online, rather than being delivered to small groups of students by a peer facilitator team. Second, it is much briefer than most other bystander intervention programs (20 minutes as opposed to one or more sessions of an hour or longer). Third, the brief format prompted us to target one outcome (bystander behaviors toward friends) and one key hypothesized process for increasing such behaviors (increasing *feelings of efficacy* for performing bystander behaviors). Other programs (e.g., Banyard et al., 2007) have taken a broader approach, such as encouraging students to speak out against social norms that support sexual violence, and have attempted to broadly discourage attitudes that promote sexual violence and inhibit helping behaviors, in addition to increasing feelings of efficacy. Fourth, we chose to emphasize the notion of friends taking care of friends because friends have an important influence on a wide range of health-related behaviors (e.g., Cullum, O'Grady, Sandoval, Armeli, & Tennen, 2013; Fitzgerald, Fitzgerald, & Aherne, 2012; Lau, Quadrel, & Hartman, 1990). In addition, there is some research indicating that individuals may be more inclined to take action and intervene to protect a friend, as compared with intervening to protect a stranger or acquaintance (e.g., Levine, Cassidy, Brazier, & Reicher, 2002). Also, because most sexual assaults and completed rapes on college campuses take place in the victim's place of residence (Fisher et al., 2000), we reasoned that at least some of the individuals in close temporal or physical proximity to the event would be friends of the victim or perpetrator. In short, we thought that it might be more feasible (and realistic) for a brief online intervention to be designed to influence bystander behaviors toward friends, as opposed to a broader audience.

We hypothesized that college students who viewed Take Care, compared with students who viewed a control program, would report the following: (a) greater efficacy for intervening in situations in which friends may be exposed to sexual violence, both at postintervention and at the 2-month follow-up, and (b) engaging in relatively more bystander behaviors to protect friends during the 2-month period following the intervention. We also hypothesized that efficacy for intervening would (c) predict bystander behaviors during the follow-up period, and (d) mediate the hypothesized intervention effects on bystander behaviors to protect friends. We examined Take Care's effects on bystander behaviors to protect friends, but we also explored whether effects of a program that focuses on friends taking care of friends would generalize to bystander behaviors more broadly (e.g., toward strangers and acquaintances as well).

Method

Participants

Participants were recruited from social psychology classes in a midsize university, and they received extra credit in their course for participating. Those who desired extra credit but did not wish to participate in the study ($n = 30$; 40% were female) were offered an alternative assignment. Figure 1 displays the flow of participants through the project. Of the 96 students who originally agreed to participate, one withdrew before completing the postinterven-

tion assessment and two others did not complete the 2-month follow-up assessment, resulting in a final sample of 93 students (80.6% female, 19.4% male). The sample was predominantly non-Hispanic white ($n = 62$, 66.7%), but also included 13 Asian (14.0%), 8 Hispanic (8.6%), 4 black (4.3%), 4 bi- or multiracial (4.3%), and 2 American Indian or Alaska native (2.2%) participants. The sample was slightly more ethnically diverse (33.3% minority) than the campus undergraduate population (27% minority), and the ratio of females to males (4:1) was higher than that of the undergraduate population (1:1). Participants ranged in age from 18 to 23 years ($M = 19.76$, $SD = 1.19$), consistent with the campus average for undergraduates (20 years).

Of the 30 students who chose the alternate assignment, 12 were female (40%) and 18 were male (60%). The proportion of females who participated in the study was greater than the proportion who participated in the alternate assignment, $\chi^2(1) = 20.38$, $p < .001$.

Procedures

Data for the study were collected as part of a larger study. The Institutional Review Board at the University at which the research was conducted approved the study protocol, and all participants provided written informed consent. At the baseline assessment, participants completed questionnaire measures, were then randomized to condition, and viewed their respective intervention program (Take Care or control). They returned to the lab between 1 and 7 days later for a postintervention assessment and again approximately 2 months
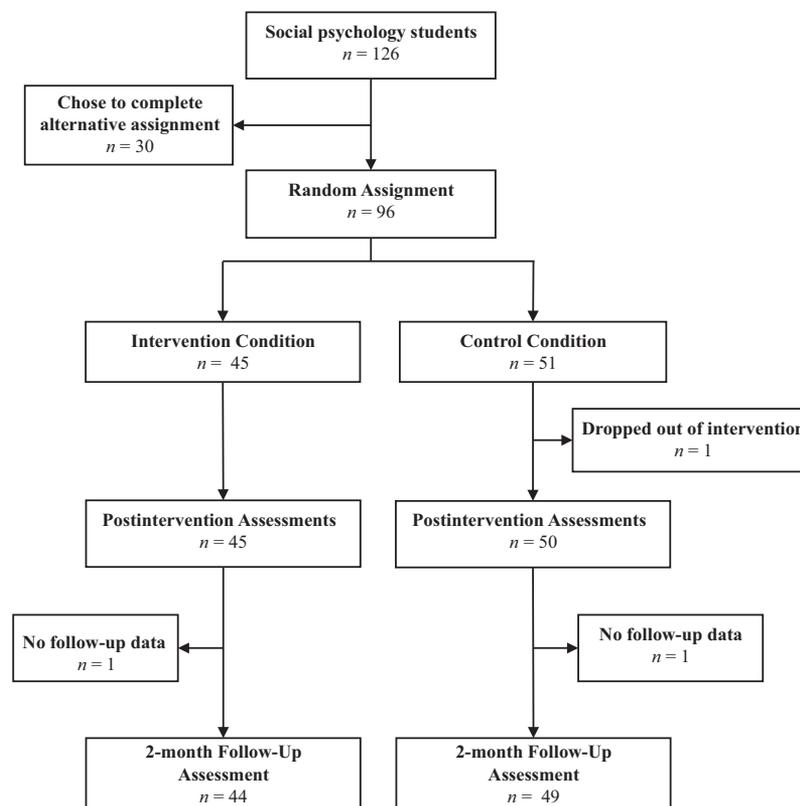

Figure 1. Participant flow and retention at intervention, postintervention, and two-month follow-up.

later for a follow-up assessment. All measures were administered via computer.

Baseline assessments were conducted between January and March of 2013; thus the 2-month follow-up assessments were conducted between March and May of 2013. The baseline measures covered a variety of topics (e.g., alcohol use, anxiety about school performance, study skills) to help disguise the purpose of the study. After completing the measures, participants were randomly assigned to view either the Take Care program ($n = 44$, 47.3%) or a control program on study skills ($n = 49$, 52.7%). The groups did not differ on sex, age, or race/ethnicity, $ps > .27$.

After viewing their respective online program, participants scheduled an appointment to return to the lab for the postintervention assessment as soon as possible within the following week. The average number of days between the baseline and postintervention assessment was 2.31 ($SD = 6.34$), and did not differ across conditions. During the postintervention visit, participants completed measures and participated in several role plays of "typical" college situations. The situations involved drinking too much at a party, seeing questionable behavior at a party (e.g., situations that might lead to unwanted sexual contact or violence), peer pressure to engage in academic dishonesty, roommate problems, and time management issues. The role plays were part of the larger study, but also functioned to help disguise the purpose of this study.

Approximately 6 weeks after completing the baseline assessment, participants were emailed a link with instructions to complete the 2-month follow-up assessment via a secure website. They were instructed to complete the assessment within a week of receiving the link, so that it could be completed within six to eight weeks after their baseline assessment. Banyard et al. (2007) have found that a 2-month interval allows sufficient time for situations to arise in which bystander behaviors would be appropriate. The average time between baseline and the follow-up assessment was 49.37 days ($SD = 8.71$), and did not differ across conditions.

Online Programs

Take Care. Take Care was presented via a presentation-design website. The program was presented in the context of encouraging college students to look out for their friends in social situations. Take Care starts with an acknowledgment of the various demands placed on students as they attempt to balance adult responsibilities with the social opportunities of college as well as the importance of keeping safe while engaging in these social activities, especially given the prevalence of sexual violence on college campuses. The program describes how likely it is that people they know may become a victim of sexual violence and how they can help "take care" of their friends to help prevent victimization experiences.

Take Care includes three brief video vignettes designed to demonstrate ways in which students can intervene when they see sexual coercion or violence or when they see situations that might result in it. Each vignette is presented in two parts. First, a situation in which sexual violence either had occurred or might occur was depicted. For example, in one vignette, two young women (i.e., bystanders) are shown at a party, and one notices a man dropping a pill into a drink he is mixing. The video then stops, and participants are asked to think about what they might do in this situation, and to input their ideas using the keyboard (this information was

used to help evaluate treatment fidelity). The program then presents a range of actions that could be taken to help reduce the risk that the drugged drink will be given to someone, emphasizing that any of these, or other actions, can help prevent someone from being victimized. The video then picks up where it left off, presenting one possible course of action (i.e., a bystander behavior) that addresses the problem successfully.

Following the conclusion of the video, the narrator uses the phrase "Take Care" and the letters of the word "care" to summarize how the bystander's behaviors followed the principles of "taking care." These principles are presented as follows:

C – Show *compassion* for victims or potential victims of sexual assault;

A – Pay *attention* to the situation and whether it could be risky;

R – Take *responsibility* for acting to reduce risk or aid a victim;

E – Take *effective* action.

This acronym is used in this manner after each vignette, to provide a cognitive shortcut for participants to use when thinking about how they might respond in risky situations and to encourage participants' conceptualizing bystander intervention behaviors as simply "friends taking care of friends."

Interspersed between the videos of hypothetical scenarios and possible responses to them, the program also presents information about sexual pressure and coercion, introduces the idea that men as well as women can experience unwanted sexual pressure, and defines and discusses the term "consent" as it applies to sexual behavior. The program concludes by asking students to be vigilant about helping to keep their friends, classmates, and acquaintances safe from sexual violence and reiterates a few key ways in which they can watch out for their friends in social situations. The entire Take Care program is approximately 20 minutes in duration.

Control program. The 20-min control online program featured videos interspersed with presentation of information about study skills. The program discussed cognitive errors that commonly impair students' ability to study efficiently, highlighted information about levels of processing, and introduced a particular note-taking method as a technique to aid deeper processing of information.

Treatment Fidelity

Participants viewed their respective programs in the lab in the presence of a research assistant. Research assistants collected participants' cell phones before they began the study activities and remained in the room with them to ensure that they were paying attention to the online programs (as opposed to starting the online program and then switching to some other activity). In addition, the responses that the students entered into the computer regarding the actions they would take in the situations presented in the Take Care program were inspected. Answers from 40 of the 44 students who viewed Take Care indicated that the students were attending to the content of the program. Only one participant did not respond to any of the prompts to enter their ideas of how to help take care of their friends in the situations depicted.

Measures

Bystander behaviors. At baseline and the 2-month follow-up assessment, students completed the 51-item Bystander Behaviors

Scale (Banyard, Plante, & Moynihan, 2005). This measure conceptualizes bystander behaviors broadly; it includes items that describe speaking out against social norms that support sexual violence (e.g., *spoke up against sexist jokes*; *spoke up against commercials depicting violence against women*) as well as bystander behaviors for friends, strangers, and acquaintances (e.g., *asked a stranger who seemed upset if they were okay or needed help*; *called 911 when a stranger needed help*). Scores on the measure are associated with efficacy and attitudes toward bystander intervention (Banyard, 2008). This measure was not administered at the postintervention assessment, because the short time between the intervention and the postintervention assessment (one week or less) would not provide enough opportunity for new bystander behaviors to occur.

Because Take Care focuses specifically on bystander intervention on behalf of friends, we were interested in evaluating intervention effects on bystander behaviors in situations involving friends. In an effort to come up with a Bystander Behaviors for Friends Scale, we initially conducted an exploratory factor analysis on the 18 items of the Bystander Behaviors Scale that refer to friends protecting or helping friends (using data collected at baseline). A 4-factor solution emerged, but at least two of the factors appeared to reflect response pattern similarity (frequency of endorsement for items: very high occurrence and very low occurrence) rather than substantive similarity between items. Similar patterns and concerns have been noted for other scales measuring occurrences of discrete behaviors (e.g., Wolfe et al., 2001). Given the pattern of results, coupled with the low ratio of participants to items (93/18) on which the results of the factor analysis were based, we used a rational approach to item selection that incorporated the factor analytic results, choosing six items from the larger set of 18 (at least one item from each of the four factors, to help ensure breadth) that seemed to best describe the types of behaviors and situations addressed by the intervention. These items were as follows: *questioned my roommate or friend further when they said that they had had an unwanted sexual experience but didn't call it 'rape'*; *walked a friend home from a party/bar who had had too much to drink*; *approached a friend when I thought they were in an abusive relationship and let them know I'm here to help*; *shared information about sexual assault and violence with my friend*; *confronted friends who made excuses for abusive behavior by others*; and *asked for verbal consent when I was intimate with my partner, even though we are in a long-term relationship*. Participants indicated whether they had engaged in each of the bystander behaviors in the past two months (*Yes*, *No*, or *Not Applicable*). The total number of "Yes" responses was used as the measure of bystander behaviors for friends. Coefficient alpha was .60 for the 6-item Bystander Behaviors for Friends Scale at baseline.

We were also interested in whether effects of a program that focuses on friends taking care of friends would generalize to bystander behaviors more broadly. Thus, we conducted analyses on the remaining 45-items—all of the items *not* included in the 6-item Bystander Behaviors for Friends scale (we refer to this larger, 45-item scale as the Bystander Behaviors Scale). Again, the total number of *Yes* responses was used. At baseline, coefficient alpha was .86 for the 45-item Bystander Behaviors Scale. The correlation between the Bystander Behaviors Scale and the Bystander Behaviors for Friends Scale was $r = .74$, $p < .001$.

Efficacy for intervening. At baseline, postintervention, and the 2-month follow-up, students completed 5 items from the Bystander Efficacy Scale (Banyard et al., 2007) to indicate their feelings of efficacy for intervening when witnessing actual or potential sexual assault situations involving friends. These items were selected from a larger efficacy scale, which has been shown to relate to bystander behaviors (Banyard, 2008). For each item, students rated how confident they were that they could perform the designated behavior (0 = *Can't do*, 100 = *Very certain can do*). The 5 items were as follows: *criticize a friend who tells me that they had sex with someone who was passed out or who didn't give consent*; *do something to help a very drunk person who is being brought upstairs to a bedroom by a group of people at a party*; *do something if I see a woman surrounded by a group of men at a party who looks very uncomfortable*; *do something if I see a man surrounded by a group of women at a party who looks very uncomfortable*; and *get help if I hear of an abusive relationship in my dorm or apartment*. Item responses were summed to provide an index of feelings of efficacy. The internal consistency of this measure at baseline was $\alpha = .81$.

Results

Table 1 presents the means and standard deviations for the study variables at each assessment. There were no between-groups differences on any of these variables at baseline, $ps > .14$.

Intervention Effects on Feelings of Efficacy for Intervening

Results of an analysis of covariance (ANCOVA) that controlled for baseline efficacy for intervening indicated postintervention group differences in efficacy for intervening, $F(1, 90) = 7.50$, $p < .01$, partial $\eta^2 = .08$. Specifically, consistent with our first hypothesis, students who viewed Take Care reported greater efficacy for intervening at postintervention than students in the control condition. Follow-up analyses indicated that from baseline to postintervention, feelings of efficacy increased for those in the Take Care condition, $t(43) = -2.32$, $p < .05$, partial $\eta^2 = .11$, but did not change for those in the control condition, $t(48) = .63$, $p = .54$, partial $\eta^2 = .01$.

Similar results were found for efficacy for intervening at the 2-month follow-up. Again, consistent with our first hypothesis, students in the Take Care condition reported relatively greater efficacy for intervening at the 2-month follow-up than those in the control condition, controlling for baseline efficacy, $F(1, 90) = 4.48$, $p < .05$, partial $\eta^2 = .05$. Examining the change from baseline to the 2-month follow-up within each condition, we found that although mean levels of efficacy for intervening increased within the Take Care group, the increase was not statistically significant, $t(43) = .79$, $p = .43$. On the other hand, efficacy for intervening decreased in the control condition, although the decrease was not statistically significant, $t(48) = 1.95$, $p < .06$.

Intervention Effects on Bystander Behaviors

Separate ANCOVAs were performed on the two measures of bystander behaviors at the 2-month follow-up, with baseline scores included as control variables. On the Bystander Behaviors for Friends

Table 1
Means and Standard Deviations of Study Measures at Each Assessment

	Group	
Variable	Take care M (SD)	Control M (SD)
Feelings of efficacy		
Baseline[a]	372.95 (97.32)	364.90 (89.96)
Postintervention[b]	395.00 (81.17)	360.10 (84.60)
Adjusted postintervention*	392.03 (74.71)	362.77 (70.85)
2-month follow-up[b]	382.27 (98.94)	346.12 (95.24)
Adjusted 2-month follow-up*	379.14 (99.77)	348.93 (94.57)
Bystander Behaviors for Friends		
Baseline[a]	1.52 (1.36)	1.31 (1.43)
2-month follow-up[b]	1.39 (1.51)	0.84 (0.96)
Adjusted 2-month follow-up*	1.34 (1.64)	0.88 (1.54)
Bystander Behaviors Scale		
Baseline[a]	8.09 (5.21)	6.51 (5.13)
2-month follow-up[b]	5.84 (5.00)	4.92 (4.17)
Adjusted 2-month follow-up	5.40 (3.73)	5.31 (3.73)

Note. Feelings of efficacy scores range from 0 to 500 with higher scores indicating greater feelings of efficacy. Bystander Behaviors for Friends scores range from 0 to 6 with higher scores indicating greater use of bystander behaviors. Bystander Behaviors Scale scores range from 0 to 51 with higher scores indicating greater use of bystander behaviors. The adjusted means are from the ANCOVAs in which scores are adjusted for baseline scores on the same variable.
[a] Treatment group differences at baseline were not significant for any of the outcome measures.   [b] Because all analyses of outcomes following treatment included baseline level as a covariate, unadjusted outcomes after treatment were not analyzed. Thus, treatment differences for the unadjusted means are not reported.
* Difference between treatment groups is significant ($p \leq .05$).

Scale, consistent with our second hypothesis, students who viewed Take Care reported engaging in more bystander behaviors at follow-up relative to those who viewed the control intervention, $F(1, 90) = 3.85$, $p = .05$, partial $\eta^2 = .04$ (see Table 1). Follow-up analyses indicated that from baseline to follow-up, the level of bystander behaviors for friends remained constant for students in the Take Care condition, $t(43) = .61$, $p = .54$, partial $\eta^2 = .01$, but decreased for students in the control condition, $t(48) = 2.35$, $p < .05$, partial $\eta^2 = .10$.

For the 45-item Bystander Behaviors Scale, results indicated no group differences, $F(1, 90) = .01$, $p = .91$, partial $\eta^2 = .00$ (see Table 1). Follow-up analyses indicated that bystander behaviors in both the Take Care, $t(43) = 2.79$, $p < .01$, partial $\eta^2 = .15$, and control conditions, $t(48) = 3.28$, $p < .005$, partial $\eta^2 = .18$, decreased from baseline to follow-up.

Efficacy for Intervening as a Mediator of Intervention Effects

Consistent with our third hypothesis, postintervention efficacy for intervening was related to bystander behaviors over the 2-month follow-up period for the Bystander Behaviors for Friends Scale, $r(93) = .21$, $p < .05$, and the 45-item Bystander Behaviors scale, $r(93) = .25$, $p < .05$. Similarly, efficacy for intervening at the 2-month follow-up was concurrently related to both bystander behaviors scales at the 2-month follow-up: $r(93) = .27$, $p = .01$ for the Bystander Behaviors for Friends Scale and $r(93) = .35$, $p = .001$ for the 45-item Bystander Behaviors Scale.

Our fourth hypothesis suggested that efficacy would mediate the effect of treatment condition on Bystander Behaviors for Friends. We used bias-corrected and accelerated bootstrapping to test the statistical

significance of the hypothesized mediated pathway because it has more power and more appropriate Type I error rates than more traditional tests of mediation, such as that of Baron and Kenny (1986), and because it makes few assumptions about the distributions of the data. An indirect, mediated effect whose 95% confidence interval does not include zero is considered significant. As an approximate measure of the effect size for the mediated pathway, we report the "proportion mediated" (P_M), which is the proportion of the total effect of the independent variable (treatment condition) on outcome that is attributable to the mediated pathway (a*b/c).

Because we measured efficacy for intervening at both postintervention and at follow-up, we combined the two measures to form an average of efficacy over the 2-month follow-up period. This average was used as the mediator of treatment condition effects on bystander behaviors for friends, for which the reference period was the 2-month follow-up period. As expected, treatment condition was related to average efficacy for intervening (the "a" path), $b = .42$, $t(91) = 2.01$, $p < .05$, and average efficacy for intervening was related to bystander behaviors for friends over the 2-month period (the "b" path), $b = .22$, $t(90) = 2.11$, $p < .05$. The bootstrap mediation analysis showed that average efficacy for intervening mediated the effect of treatment condition on bystander behaviors for friends at the 2-month follow-up, a*b = .09; 95% CI: [−.2801, −.0003]. The proportion mediated, $P_M = 20.6\%$, suggests that efficacy for intervening partially mediated the effect of the intervention on bystander behaviors for friends.

Discussion

To our knowledge, the present research represents the first empirical evaluation of an online bystander intervention program

designed to prevent sexual violence. Consistent with our first and second hypotheses, our results show that Take Care, an online program based on the bystander intervention model, can increase feelings of efficacy for intervening in high-risk situations for sexual violence and can influence occurrences of bystander behaviors for friends. Specifically, compared with those who viewed the control program, students who viewed Take Care reported greater feelings of efficacy for engaging in bystander behaviors. They also engaged in more bystander behaviors for friends in the two-month period following the intervention than did students in the control condition, whose bystander behaviors decreased over the follow-up period. These findings are encouraging given the lower cost and increased convenience (e.g., students have more options for scheduling their participation) associated with an online program, compared with programs delivered to students in a small-group format.

Consistent with our third hypothesis, efficacy for intervening was related to bystander behaviors over the two-month follow-up period. This was true for efficacy for intervening assessed at postintervention and at the two-month follow-up. Consistent with our fourth hypothesis, we found Take Care's effects on bystander behaviors for friends were partially mediated by feelings of efficacy for intervening in potential sexual violence situations. That is, Take Care altered feelings of efficacy, and these differences in efficacy partially explained the effects of the Take Care intervention on bystander behaviors for friends at the two-month follow-up. The partial mediation finding, however, also suggests that Take Care's effects on bystander behaviors for friends were influenced by processes in addition to feelings of efficacy. Although this study was not designed to evaluate Take Care's effects on other processes, we believe these processes might include greater awareness of the vulnerability of friends to unwanted sexual experiences and increased feelings of personal responsibility for intervening to help friends.

Notably, the specific bystander behaviors that appeared to be affected by Take Care were those that were addressed directly in the intervention—bystander behaviors designed to help or protect friends. The intervention effects did not extend to the more general measure of bystander behaviors, which included acts such as speaking out against social norms that support sexual violence and intervening behaviors for strangers and acquaintances. This divergence may have occurred for a number of reasons related to the way Take Care was designed. For example, unlike previous bystander intervention programs, Take Care emphasized helping friends; it did not address or suggest that participants intervene in situations beyond that. Given this focus, it seems unlikely that some of these broader bystander behaviors (e.g., spoke up against sexist jokes) would be affected. Previous bystander intervention programs have attempted to elicit changes in rape myths or other attitudes theorized to be related to bystander intervention. It may be necessary to address these more general beliefs and attitudes directly to obtain broader effects on bystander behaviors. Another potential explanation may be related to Take Care's brief format (20 minutes). Previously evaluated bystander intervention programs have been longer, ranging from a single 90-min session to three 90-min sessions extended over the course of a week (e.g., Banyard et al., 2007). Such programs can cover more situations and more potential bystander behaviors, which may be necessary to affect bystander behaviors more broadly.

It is also noteworthy that even though students who viewed Take Care reported engaging in more bystander behaviors for friends at follow-up relative to students in the control condition, the level of such behaviors did not increase from baseline to follow-up. In contrast, the level of bystander behaviors for friends declined in the control group from baseline to follow-up. We found a similar pattern of results for efficacy at the two-month follow-up, with efficacy increasing only slightly from baseline to the two-month follow-up in Take Care, while decreasing (nonsignificantly) in the control condition. Similar findings have been observed in studies on college student drinking (i.e., students in the intervention condition maintain their level of alcohol consumption from baseline to follow-up, but students in the control condition increase their alcohol consumption; Larimer et al., 2007). This pattern, however, is in contrast with findings from other studies that have documented increases in bystander behaviors as a result of an intervention program (Banyard et al., 2007; Coker et al., 2011).

One possible explanation for this pattern has to do with the time of year in which the study was conducted. Specifically, data for this study were collected in a single academic semester; the two-month period prior to the baseline assessment, which ranged from late November to February for most participants, may have offered more opportunities to engage in bystander behaviors because of the school holiday and the less academically stressful early weeks of the semester. In contrast, the two-month period before the follow-up, which ranged from January to April (for most participants), included midterm exams and end-of-term papers and projects. College students tend to consume the most alcohol at the beginning of the semester and on particular holidays, such as New Year's Eve (Tremblay et al., 2010). In short, there may simply have been more opportunities to engage in bystander behaviors during the baseline assessment reference period than during the two-month follow-up assessment reference period. Between-groups effects for Take Care on bystander behavior toward friends might thus be interpreted as follows: bystander behaviors toward friends remained constant for those in the Take Care condition, even though opportunities for such behavior declined, but bystander behaviors toward friends declined for those in the control condition.

It is also possible that engaging in bystander behaviors (and efficacy for intervening) tends to decrease over time in college. This may be because students become desensitized to the level of risk that certain situations (e.g., parties) entail, or because they are actively discouraged from intervening in certain social environments. For example, we have heard anecdotes of students refusing to intervene in high-risk situations (e.g., a male student escorting an intoxicated female to his room) and discouraging others from doing so, because it would interfere with the male student's "victory." Similarly, we have heard anecdotes of groups of female students discouraging one of their number from reporting a sexual assault because they believe it will make the group as a whole look troublesome or unappealing. This hypothesized decrease in bystander behaviors and in efficacy for intervening may have been offset by Take Care.

Limitations

Some limitations of the present research should be acknowledged. First, there were some limitations with our sample that

make it unclear how generalizable the effects of Take Care might be. Specifically, the sample was predominantly female, non-Hispanic, and white. It was also relatively small, which precluded an analysis of intervention effects on specific subgroups of students. It seems plausible to speculate that the intervention might work better for certain groups of students compared with others (e.g., females vs. males, those who have not previously experienced sexual violence vs. those who have, etc.). Furthermore, the students who participated in this study chose to do so over an alternative assignment, and more females than males chose the study over the alternative. Students who do not elect to view the program voluntarily may be less responsive to the program's message.

Second, it is unknown whether the intervention's effects lasted beyond the two-month follow-up period. Although demonstrating that effects for a 20-min intervention are evident two months afterward is arguably impressive, the ultimate goal is for stable, longer-term changes. Such long-term change may require additional exposures or "booster" interventions. Third, there are limitations to the self-report measures utilized in this study. Although they are face valid, their correspondence with actual behavior is not known. In addition, the measures of bystander behaviors were sensitive only to their occurrence (presence/absence), not their frequency. Thus, important information may not have been captured. Further, the measures used in this study did not consider the likelihood of sexual violence or level of danger of the situations in which participants used the bystander behaviors they endorsed. As a result, important aspects that could influence the outcome of whether sexual violence actually occurred—and therefore this program's efficacy—were not incorporated in this evaluation. However, these measurement limitations apply to all other studies that have attempted to evaluate changes in bystander behaviors as a function of an intervention; it is clear that work needs to be done to improve the measurement of bystander behaviors (Banyard, Moynihan, Cares, & Warner, 2014).

Clinical and Policy Implications

To the best of our knowledge, this study provides the first demonstration of the efficacy of an online sexual assault prevention program based on the bystander intervention model. The ease of online distribution may allow more individuals to be reached, potentially resulting in more widespread and/or intensified effects. The online format also allows recipients to view the program at their convenience, potentially addressing problems arising from presenting sexual assault prevention interventions in mixed-gender and group formats. However, it should be recognized that this was an initial evaluation, limited in size and scope. Much additional work is necessary before such an intervention is ready for widespread use.

Research Implications

This initial evaluation of Take Care might be viewed as a promising step in the development of effective online interventions for decreasing sexual violence in a university setting. However, it should be emphasized that this is an initial evaluation of the program. As such, it is subject to replication and is simply a starting point for further inquiry. For example, further research is necessary to evaluate effects of online interventions of decreasing sexual violence on more diverse groups of students, and on specific subgroups of students, such as those who have previously been victimized. In addition, it would be valuable to evaluate effects of online interventions over longer periods of time, and on a broader array of outcome measures. In addition, having demonstrated that Take Care produces effects on self-report measures of bystander behaviors, this study prompts the question of whether Take Care produces changes in actual bystander behaviors. Future studies might also investigate the trade-off between broadening (and thereby lengthening) the program with attention to the message and willingness to view it.

In conclusion, this study demonstrates the effective use of an online sexual violence prevention program based on the bystander intervention model. Despite being only a 20-min intervention, Take Care was able to influence bystander behaviors for friends in the two months following its viewing. By focusing on bystander interventions for friends, Take Care capitalizes on the context in which college students spend much of their time: with friends. This may be the most important context in which to encourage bystander behaviors in that students are most likely to encounter sexual violence when in social situations with friends and therefore have the greatest opportunity to intervene. Although the present results point to the potential utility of brief online bystander interventions, this does not imply that brief online interventions should supplant existing programs with demonstrated efficacy. In selecting a program to implement on college campuses, administrators must determine which types of programs best fit their goals and their campus community. It is very likely that multiple types of programs (and perhaps multiple types of bystander interventions) will be needed to effectively combat the problem of sexual violence on college campuses.

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