Evaluating Peer-Peer Depression Outreach: College Students Helping Peers Approach and Respond to Students in Crisis

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ABSTRACT. This study evaluated the effects of a peer-peer depression outreach program for college students (Depression OutReach Alliance [DORA] College Program). Fifty-six college students participated in either the DORA program or a control program and completed pretest, posttest, and follow-up assessments. These assessments measured responses to and desired social distance from an at-risk male peer, self-stigma and perceived social stigma associated with psychological help-seeking, knowledge of depression and suicide, and crisis response skills. Results indicated that DORA participants reported improved crisis response skills, $t(50) = 2.55$, $p = .014$, $d = .71$, desired less social distance from the distressed peer, $t(26) = 3.07$, $p = .005$, $d = -.60$, and perceived there to be less social stigma related to seeking psychological help after the intervention, $t(26) = 2.71$, $p = .012$, $d = -.52$. Implications for college student depression and suicide outreach are discussed.

Mental health issues among college students are a serious public health problem in the United States. According to an annual survey of U.S. undergraduate students, 1.6% had attempted suicide and 8.0% had seriously considered suicide in the last 12 months. Additionally, 46.5% of students reported feeling that things were hopeless and 31.8% reported having been so depressed that it was difficult to function in the last year (American College Health Association, 2013). Considering that the majority of students who are depressed or suicidal do not receive treatment (Downs & Eisenberg, 2012; Eisenberg, Golberstein, & Gollust, 2007) and 80 to 90% of students who die by suicide had no contact with their college counseling center (Gallagher, 2014; Reetz, Barr, & Krylowicz, 2013), more effective outreach and prevention programs that encourage students to seek help are needed.

Several factors support a focus on peer-peer initiatives in these efforts (Kirsch et al., 2014). A recent survey of college counseling center directors found that 94% of directors reported that their counseling center is serving increasing numbers of students with severe psychological problems (Gallagher, 2014). Indeed, counseling centers' top strategy for handling the growing demand and increasing complexity of students' problems has been to spend more time training faculty, staff, and peers to respond appropriately to distressed students and make appropriate referrals. Peers, in particular, have the potential to offer a socially supportive network and encourage students to seek help. Research has indicated that college students experiencing emotional distress or suicidality are most likely to turn to a peer (Drum, Brownson, Burton Denmark, & Smith, 2009). Yet, peers too often do not suggest professional help (Evans, Hawton, & Rodham, 2005), offer sufficient support (Barnes, Ikeda, & Kresnow, 2001), provide helpful consultation (Drum et al., 2009), or even know about their college's mental health resources (Westefeld et al., 2005). Thus, college support staff may be unaware of many students in distress when the first report is made to a peer.

Stigma regarding mental illness and receiving psychological treatment among college students may play a role in these response patterns. Self-stigma, defined as the internalization of negative attitudes held by others (Corrigan & Rao, 2012),

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is negatively associated with both help-seeking behavior and the likelihood of encouraging a peer with mental illness to seek professional help (Jorm, Blewitt, Griffiths, Kitchener, & Parslow, 2005). Perceived stigma, the perception of these negative attitudes in others, is associated with attitudes toward seeking psychological help (Komiya, Good, & Sherrod, 2000) and help-seeking intentions (Deane & Todd, 1996), though perhaps not as consistently as self-stigma (Eisenberg, Downs, Golberstein, & Zivin, 2009). Encouragingly, studies have shown that stigmatizing attitudes among college students can be modified through both education and contact with individuals with mental illness (Kosyluk et al., in press; Morse & Schulze, 2013). Therefore, outreach programs that aim to decrease stigma may increase peer helping behaviors and referrals.

The Depression OutReach Alliance (DORA) College Program offers a peer-peer approach to depression outreach and suicide prevention (Screening for Mental Health, 2010). It is based on Signs of Suicide (SOS), a school-based prevention program for middle and high school students that incorporates two widespread suicide prevention approaches by integrating a didactic component to promote effective intervention with distressed peers with a self-screening for depression and other risk factors for suicidal behavior (Aseltine & DeMartino, 2004). SOS has been shown to enhance knowledge of suicide and depression, improve attitudes toward these issues, and reduce the rate of suicide attempts by approximately 40% (Aseltine & DeMartino, 2004; Aseltine, James, Schilling, & Glanovsky, 2007). Although DORA contains many of the same elements as SOS, no research has studied the effects of DORA. Thus, it is listed in the Suicide Prevention Resource Center's (SPRC) Best Practices Registry for suicide prevention under Section III (meets current standards, but no outcome evaluation).

DORA consists of an educational video, student workbook, and structured discussion in small groups led by a peer health educator in collaboration with college counseling center professionals. The 16-minute educational video profiles college students who have experienced depression and suicidal ideation, but are now in recovery with support from peers and mental health professionals. The video also uses an acted scenario to model a successful student intervention with a depressed male peer and features interviews with college counselors to destigmatize counseling. Participants receive a student workbook to be used in conjunction with the video with tips for offering empathic support, an optional self-risk assessment, guidance for finding "the right therapist for you," and signs and symptoms of depression, anxiety, and suicidal behavior. Finally, the peer-led discussion explores themes from the video.

There are several reasons to evaluate DORA, including its SPRC section III listing. Most importantly, DORA differs from other suicide prevention programs in that it is primarily implemented by a peer leader rather than a mental health professional. Kirsch et al. (2014) argued that peer-peer outreach programs have great potential but are underutilized and noted that their empirical base, although largely positive, is small. Additionally, DORA's explicit focus on student gatekeepers is important. The DORA video provides student-centered education about depression and recovery, addresses specific concerns peers may have about intervening and making referrals, and shares first-person accounts from eight students representing a wide range of potential peers. Other widely used gatekeeper training programs like Question, Persuade, Refer, Mental Health First Aid, and Campus Connect have often focused on training faculty, staff, or resident advisors (Lipson, Speer, Brunwasser, Hahn, & Eisenberg, 2014; Pasco, Wallack, Sartin, & Dayton, 2012; Tompkins & Witt, 2009), and are not designed specifically with student/peer gatekeepers in mind.

Therefore, the current study examined the short-term effects of DORA on responses to and desired social distance from a male peer at risk for suicide, crisis response skills, self- and perceived stigma associated with psychological help-seeking, and knowledge of depression and suicide in a controlled trial. The control group participated in an identically structured fire safety program that consisted of a video, pamphlet, and structured discussion. It was hypothesized that, after participating in their respective programs, DORA participants would demonstrate better crisis response skills than control participants. It was also predicted that, after exposure to the program, DORA participants would be more likely than control participants to include strategies recommended by DORA in their responses to a hypothetical depressed male peer. A male peer was the focus for these assessments because DORA utilizes a male peer in the acted scenario, and research shows that impressions of male depressed peers may be especially negative and peer intervention less likely (White & Stillion,

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1988). The DORA group was also expected to report less desired social distance from the distressed peer and greater knowledge of suicide and depression than the control group after participating in the program. Finally, because the DORA video provides contact with college students who were depressed but have since recovered and this kind of contact has been shown to reduce stigma (Corrigan, Powell, & Al-Khouja, 2015), it was predicted that DORA would decrease participants' self-stigma and perceived social stigma associated with receiving psychological help.

Method

Participants

A total of 56 undergraduates participated in either DORA or the control program and all of the assessments. Data from four DORA participants who had previously seen the DORA video were excluded from all analyses, however, resulting in a final sample of 27 DORA participants (66.7% women) and 25 control participants (60% women). All participants were students enrolled in an introductory Psychology course at a small private, 4-year residential college in the Northeastern United States. Participants were predominantly first-year students and sophomores (84.6%) and European American (57.7%), with 13.5% Hispanic/Latino, 15.4% Asian American, 9.6% African American, and 3.8% other. Tests revealed no demographic differences between the DORA and control participants.

Materials

Vignette and open-ended prompt. To assess responses to and desired social distance from a distressed peer, participants read a vignette depicting a depressed male peer exhibiting suicide risk factors. Suicide risk features were based on those presented in Mueller and Waas (2002). Beneath the vignette, participants were asked, "What would you say and/or do in this situation? Please be specific and describe everything you would say and do."

Participants' open-ended responses were later coded for the presence/absence of eight different helping patterns. Five corresponded to the recommended peer intervention steps in the DORA video: (a) *State specific behavioral changes you have noticed,* (b) *Express concern for his well-being,* (c) *Let him know that you are there for him,* (d) *Tell him you will help him whenever,* and (e) *Put forth the suggestion of talking to a mental health professional.* A sixth category, *problem-focused help (other)*, was coded if a response involved an action that addressed the friend's suicidality, did not involve professional help, and was not better characterized by another category. Another, *professional help (other)*, was coded if the response mentioned contacting or referring the at-risk friend to a faculty or staff member who was not a mental health professional. A final category, *social support*, was coded if the response mentioned including the distressed peer in any social activity but not directly addressing the suicidality (e.g., hang out with him).

A response could contain none or any number of these elements, and each category was coded as either present or absent. Responses were coded by two trained raters who were blind to condition and assessment point. Training consisted of instruction in coding definitions, practice distinguishing between similar categories, and independent coding of a practice set followed by comparison of assigned codes and discussion to resolve discrepancies. Twenty percent of responses were double-coded to assess inter-rater reliability, resulting in an overall Cohen's Kappa of 0.83. Individual category reliabilities ranged from 0.72 to 1.00 with the exception of *state behavioral changes* ($\kappa = 0.48$). Reliability for this category was likely affected by its low frequency in the reliability set. Results for this category will be interpreted with caution.

Behavioral Response Inventory. After completing the open-ended response, participants rated how likely they would be to respond with specific behaviors on a 5-point Likert scale. Twenty items were designed for the current study, with some adapted from a survey used by Wanner (2007). Although the majority of the items were desired responses (e.g., "Ask if he is thinking of ending his life," "Suggest that he go to counseling services," "Talk to an adult about John"), some items were not (e.g., "Mind your own business and let him have his privacy"). Because principal components factor analysis did not produce any meaningful factors, items were analyzed individually, with Bonferroni correction for multiple comparisons.

Social Distancing Scale (SDS). This is an adaptation of Jorm and Griffiths' (2008) SDS for college students (e.g., "Please rank your willingness to work closely on a group project with this peer"; Borenstein, 2011). Using six items, it measured willingness to make social contact with the depressed peer on a 4-point Likert-type scale. Cronbach's alphas for the SDS were .77, .85, and .83 at the pretest, posttest, and follow-up, respectively.

Self-Stigma of Seeking Help Scale (SSOSH). This 10-item scale assessed participants' attitudes

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about seeking help for mental health using a 5-point Likert scale. The SSOSH has high published internal consistency, test-retest reliability, and validity (Vogel, Wade, & Haake, 2006), and internal consistency in the present study was strong (α = .85, .88, .95).

Stigma Scale for Receiving Psychological Help (SSRPH). Using five items, the SSRPH assessed participants' perceptions of how stigmatizing it is to receive psychological treatment using a 4-point Likert-type scale. The SSRPH has demonstrated construct validity (Komiya et al., 2000), and Cronbach's alphas in the present study were adequate (α = .78, .79, .79).

Suicide Intervention Response Inventory 2 (SIRI-2). The SIRI-2 was used to evaluate crisis response skills during the posttest. Two items were excluded because they were not relevant for our college sample (items on spouses and children). A third was discarded due to expert panelists' inability to identify which response was more facilitative (Neimeyer & Bonnelle, 1997). Thus, 22 of the original 25 items were used. Each item presents a hypothetical comment from a suicidal student and two possible helping responses. Participants rated the appropriateness of each response on a 7-point Likert-type scale. Scores were calculated based on the difference between participants' ratings and the mean expert rating for each response. The SIRI-2 has strong test-retest reliability (Neimeyer & Bonnelle, 1997) and showed adequate internal consistency in the present study (α = .77).

Suicide and Depression Knowledge Questionnaire. Participants' knowledge of suicide was measured with eight true/false items (Wanner, 2007), while nine true/false items from the Adolescent Depression Knowledge Questionnaire (Hess et al., 2004) assessed depression knowledge. Five additional items about fire safety and other college health/safety issues (e.g. "The first thing you should do in a fire is find and pull a fire alarm.") were interspersed throughout the questionnaire to make the control condition video appear more relevant to the rest of the study. Only the depression and suicide knowledge items were analyzed. Because scores on the depression items correlated with scores on the suicide items at baseline, $r(50)$ = .32, p = .020, the two scales were combined for data reduction. Items were scored such that a correct response received 1 point, for a maximum possible score of 17 points. Internal consistency was poor (α = .40, .53, .56), so results should be interpreted with caution.

Familiarity With Mental Illness Scale. This 10-item scale used in Morse (2013) asked about participants' past and current mental health struggles and treatments. A parallel set of 10 items assessed whether "someone close to" the participant has had such experiences.

Procedure

Participants completed a presession survey, an experimental session, an immediate postsession survey with peer leader present and supervisors on call, and a follow-up survey approximately one week after the experimental session. The follow-up was identical to the pretest (minus the informed consent), and both were completed independently in response to a Qualtrics link sent via e-mail. On average, participants completed the pretest 3.86 days (SD = 4.53) before attending the experimental session. The posttest was completed immediately after the session, and the mean number of days between the posttest and follow-up was 7.43 (SD = 0.77).

This study was advertised as investigating "College Student Health and Safety: Responding to Peers in Distress," and participants completed the pretest after signing up for an experimental session. At the beginning of the pretest, participants were asked to provide informed consent for the entire study. They were then presented with the vignette and open-ended question, and subsequently completed the Behavioral Response Inventory, SDS, SSOSH, SSRPH, and Suicide and Depression Knowledge Questionnaire. It is worth noting that the Suicide and Depression Knowledge Questionnaire was completed last. Therefore, the low reliability of these scores might have been due to participant fatigue. After completing these measures, participants were debriefed. The posttest contained these same measures along with the SIRI-2 (administered after the SSRPH) and the Familiarity With Mental Illness Scale. The SIRI-2 was only included in the supervised postsession survey because its content was considered to be potentially triggering. The Familiarity With Mental Illness Scale was only needed once and was included here as part of a protocol requiring the checking of depression and suicide responses before participants left the room, and the activation of a tiered intervention system for currently depressed or suicidal individuals (details available from the first author). Only once was this protocol activated, and at the lowest tier of required responses.

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The experimental session began with participants completing the Familiarity With Mental Illness Scale. Students then participated in either DORA or a control program. Due to time constraints, our implementation of DORA did not include an optional icebreaker activity involving trivia questions, and the structured discussion was shortened to 10 to 15 minutes compared to the recommended 20 minutes. The control program was an identically structured fire safety program for college students called "Get Out and Stay Alive" (U.S. Fire Administration, 1999). This program featured a 16-minute video that chronicles three fatal fires that have occurred on college campuses through brief interviews with firefighters and students, and provides important information about campus fire safety. For the control program, this video was accompanied by a pamphlet (U.S. Fire Administration, 1999) and was followed by a structured discussion of themes in the video. Participants signed up for a session not knowing whether it was DORA or control. Sessions were alternated and balanced over day of the week and time of day. DORA and the control program were implemented with small groups ($M_{DORA} = 7.75$, $M_{control} = 6.25$) at four sessions each. All procedures were approved by the Connecticut College Institutional Review Board.

Results

Preliminary Analyses

All data were screened for completeness prior to analyses. Three participants did not respond to an item in the posttest survey, so mean substitution was used. Two participants did not provide an open-ended response at the follow-up, so those analyses used a sample of 50. Random assignment was not feasible because participants signed up for a group session that fit their schedule. A variety of time slots were needed to address students' scheduling constraints, so the decision was made to match DORA and control sessions for time of day/day of week with the hope of balancing student characteristics across conditions (e.g., student athletes, students with evening labs). Therefore, we tested for preexisting differences between the intervention and control groups. Analyses of baseline differences revealed only one: DORA participants perceived there to be more social stigma associated with seeking help than did control participants at the pretest, $t(50) = 2.52$, $p = .015$, $d = .69$.

Fifteen participants (9 DORA and 6 control) reported having received training about the mental health or safety of their peers in the past. There was only one difference between these participants and others: Participants who had received past health and safety training were more likely than participants without this training to suggest that the at-risk peer seek help from a mental health professional in their pretest open-ended responses, $\chi^2(1) = 4.22$, $p = .040$, $\phi = .29$. All analyses were conducted using SPSS (v. 20).

Main Analyses

Crisis response skills. It was hypothesized that the DORA group would score lower (better crisis response skills) than the control group on the SIRI-2 after participating in the program. Results revealed that the DORA group ($M = 72.36$, $SD = 19.53$) did show better crisis response skills than the control group ($M = 86.94$, $SD = 21.69$), $t(50) = 2.55$, $p = .014$, $d = .71$.

Social distance, knowledge, self-stigma of seeking help, and perceived social stigma associated with receiving help. A 2 (group; DORA/control) x 3 (time; pretest, posttest, and follow-up) repeated-measures Multivariate Analysis of Covariance (RM MANCOVA) was conducted on participants' desired social distance from the at-risk peer, knowledge of depression and suicide, self-stigma of seeking help, and perceived social stigma associated with receiving psychological help to test the hypotheses that the DORA participants' self-stigma, perceived social stigma, and social distance would decrease, and their knowledge would increase, over time compared to control participants. Sex was included as a covariate in the analysis because men tend to have higher self-stigma and perceived social stigma associated with seeking help (Eisenberg et al., 2009; Komiya et al., 2000), less knowledge of suicide (Aseltine & DeMartino, 2004; Mitchell, Kader, Darrow, Haggerty, & Keating, 2013), and greater desire for social distance from people with mental illnesses (Marie & Miles, 2008). It is important to note that the results did not change when the analysis was rerun without sex as a covariate. Descriptive statistics for this analysis are summarized in Table 1.

The multivariate Time x Group interaction was significant, Pillai's trace = .18, $F(8, 192) = 2.43$, $p = .016$, $\eta_p^2 = .09$. Further univariate analyses revealed a significant Time x Group interaction for social distance after a Greenhouse-Geisser correction, $F(1.62, 79.43) = 4.72$, $p = .017$, $\eta_p^2 = .09$, and for perceived social stigma of receiving help, $F(2, 98) = 4.17$, $p = .018$, $\eta_p^2 = .08$. To elucidate these Time x Group interactions, post-hoc paired

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t tests were conducted within each group using a Bonferroni correction. These tests indicated that DORA participants' social distance from the peer was significantly lower at both the posttest, $t(26) = 3.07$, $p = .005$, $d = -.60$, and follow-up, $t(26) = 3.14$, $p = .004$, $d = -.61$, relative to the pretest. Similarly, DORA participants perceived there to be less social stigma related to receiving help at the posttest, $t(26) = 2.71$, $p = .012$, $d = -.52$, and follow-up, $t(26) = 2.05$, $p = .050$, $d = -.39$, relative to the pretest.

In contrast, there were no significant changes in control participants' desired social distance at posttest, $t(24) = .11$, $p = .915$, $d = -.02$, or follow-up, $t(24) = .10$, $p = .924$, $d = -.02$, or in control participants' perceived social stigma related to receiving help at the posttest, $t(24) = .67$, $p = .519$, $d = .13$, or follow-up, $t(24) = 1.14$, $p = .265$, $d = .23$. Thus, the hypotheses that DORA would decrease desired social distance from a distressed peer and reduce perceived social stigma related to receiving help were supported. Univariate analyses found the Time x Group interaction to be nonsignificant for self-stigma of seeking help, $F(2, 98) = .41$, $p = .668$, $\eta_p^2 = .01$, and knowledge, $F(2, 98) = .16$, $p = .885$, $\eta_p^2 = .00$. Thus, the hypotheses that DORA would decrease self-stigma and increase knowledge were not supported. The mean pretest SSOSH score for this sample was lower than in other college samples (Vogel et al., 2006), $t(520) = 3.21$, $p = .001$, $d = -.49$, which might have limited our capacity to reduce self-stigma.

The multivariate main effect for time was statistically significant in this analysis, Pillai's trace = .24, $F(8, 192) = 3.28$, $p = .002$, $\eta_p^2 = .12$. Subsequent univariate tests found significant main effects for time for social distance, $F(1.62, 79.43) = 5.77$, $p = .008$, $\eta_p^2 = .11$, perceived social stigma related to receiving help, $F(2, 98) = 3.11$, $p = .049$, $\eta_p^2 = .06$, and knowledge, $F(2, 98) = 3.19$, $p = .045$, $\eta_p^2 = .06$. Paired *t* tests investigated changes in the total sample's social distance, perceived social stigma, and knowledge between time points and found four differences. Participants desired more social distance from the peer at pretest than at posttest, $t(51) = 2.49$, $p = .016$, $d = .35$, and at the follow-up, $t(51) = 2.20$, $p = .032$, $d = .31$. Also, knowledge increased from pretest to posttest, $t(51) = 2.13$, $p = .038$, $d = .29$, and from the pretest to the follow-up, $t(51) = 2.38$, $p = .021$, $d = .33$. Separate paired *t*-tests for each group found that, although DORA participants' knowledge did not significantly increase from pretest to posttest, $t(26) = 1.24$, $p = .225$, $d = .24$, it did increase slightly between the pretest and follow-up, $t(26) = 2.15$, $p = .041$, $d = .42$. In comparison, changes in the control group's knowledge were not significant at the posttest, $t(24) = 1.74$, $p = .095$, $d = .35$, or follow-up, $t(24) = 1.35$, $p = .191$, $d = .28$. Additionally, changes in the total sample's perceived social stigma of receiving help were not significant at the posttest, $t(51) = 1.28$, $p = .208$, $d = -.18$, or follow-up, $t(51) = .42$, $p = .674$, $d = -.06$.

Responses to the at-risk peer. Analyses of open-ended responses were conducted using Fisher's Exact Tests because expected cell counts were repeatedly less than five for several categories. As noted earlier, tests of pretest responses revealed no preexisting differences. One-tailed tests were used to examine directional hypotheses for group differences in postsession and follow-up responses: DORA participants were expected to offer more DORA-modeled responses, refer for help more often, and be more problem focused and less reliant on social support. Analyses of posttest responses revealed that, immediately after exposure to the program, DORA participants (48.1%) were significantly more likely than controls (12.0%) to let the at-risk peer know that they were there for him, $p = .005$, $\phi = .39$. There were no other post-session differences. At follow-up, DORA participants (30.8%) continued to be more likely than controls (8.3%) to let the peer know that they were there for him, $p = .050$, $\phi = .28$. Additionally, they were marginally more likely than controls (15.4% vs. 0.0%) to state specific behavioral changes they had noticed, $p = .065$, $\phi = .29$, and were significantly less likely to offer social support (3.8% vs. 25.0%), $p = .039$, $\phi = -.31$, or contact or refer the at-risk friend to a faculty or staff member who was not a mental health professional (0.0% vs. 20.8%), $p = .020$, $\phi = -.35$.

In addition to analyzing participants' open-ended responses, items of the Behavioral Response

TABLE 1

Descriptive Statistics for Outcome Variables

		DORA Group, *M* (*SD*)			Control Group, *M* (*SD*)		
Outcome Variable	Scale Range	T1	T2	T3	T1	T2	T3
Social Distance	6–24	13.26 (2.43)	11.70 (2.13)	12.07 (2.20)	12.72 (3.45)	12.68 (4.28)	12.68 (3.96)
Self-Stigma of Seeking Help	10–50	23.78 (5.35)	23.00 (5.46)	22.63 (4.76)	23.92 (7.65)	23.76 (8.41)	23.68 (7.16)
Perceived Social Stigma of Receiving Help	5–20	12.22 (2.17)	11.26 (2.33)	11.56 (2.01)	10.44 (2.90)	10.72 (3.17)	10.92 (3.03)
Knowledge	0–17	13.48 (1.85)	13.85 (1.70)	14.00 (1.59)	12.88 (2.11)	13.44 (2.40)	13.36 (2.64)

Inventory were analyzed individually with exploratory RM ANCOVAs to assess the likelihood that participants would utilize specific helping behaviors in response to the at-risk peer. These analyses produced no significant results after accounting for multiple comparisons.

Discussion

The present study sought to evaluate the effect of a peer-peer depression outreach program for college students (DORA) on various outcome measures related to college student intervention with distressed peers. DORA participants showed better overall crisis response skills, desired less social distance from a distressed peer, and perceived less social stigma related to seeking psychological help after the intervention compared to controls. Depression/suicide knowledge and self-stigma of seeking help were not affected. Although some productive helping responses were generated more often by DORA participants than controls, referring to a mental health professional was not one of them. These findings and their implications for peer-peer outreach and future research are discussed below.

As predicted, DORA participants showed stronger crisis response skills than control participants by endorsing more therapeutic responses to hypothetical suicidal statements immediately after the program. Although only assessed at posttest, this was one of our most substantial effects, and one that is directly relevant to intervention goals. DORA also reduced participants' desired social distance from a hypothetical depressed, at-risk male peer. This medium-sized effect was seen immediately after the intervention and at the one-week follow-up. This is an important finding because reducing the social distance and isolation that distressed students (especially men) often experience is necessary to facilitate peer intervention and referral. Decreasing distressed peers' social isolation is one of the primary goals of DORA, but the mechanism through which this was achieved is unclear. It is possible that DORA's promotion of a sense of belongingness, empathy, and social responsibility might have contributed, or that the modeling in the acted scenario of approaching a depressed peer had a specific impact on social distance.

In addition, DORA decreased participants' perceived social stigma surrounding help-seeking, but the effect size of this change declined in the one week follow-up from medium to small. Reducing perceived social stigma is a promising first step toward encouraging students to seek help when they experience mental health problems because concern regarding what others may think is often cited as a barrier to seeking treatment among distressed college students (Downs & Eisenberg, 2012). However, a recent study indicated that the relationship between perceived social stigma and the willingness to seek counseling may be mediated by self-stigma and attitudes toward seeking help (Vogel, Wade, & Hackler, 2007), suggesting that decreasing perceived social stigma may not be enough to encourage students to seek help. Relatedly, one study found self-stigma related to help-seeking to be more predictive of willingness to recommend psychological help to a peer than perceived stigma (Jorm et al., 2005).

Some modest differences in response skills were also observed when participants were asked to provide an open-ended description of how they would respond to the at-risk peer. DORA participants were more likely than controls to tell a peer that they were there for him (immediately, and one week later) and state specific changes they had noticed in the peer's behavior (one week later), two responses specifically recommended by DORA. In addition, DORA participants were less likely than controls to offer generic social support or refer the peer to a faculty or staff member who was not a mental health professional at the follow-up. Participants were not asked to reveal their reasoning, so it is impossible to explain these differences conclusively. However, one possible explanation is that control participants had less of an understanding of how to respond effectively to the peer, and thus responded with supportive but not optimal, and not DORA-specific, approaches more often.

Although DORA did influence the likelihood of some types of responses, it is important to note that DORA did not have a significant impact on the likelihood of other types of responses including referring the peer to a mental health professional. This is concerning because being there for someone and stating behavioral changes may have less impact than directly encouraging a peer to seek professional help. It is possible that DORA's use of a peer leader in its implementation elicited greater engagement with the social aspects of peer intervention, and a greater sense of personal responsibility, but did not sufficiently reduce barriers or increase the perceived importance of referring to a mental health professional.

In contrast to the open-ended responses, a questionnaire inquiring about the likelihood of

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engaging in several specific behavioral responses yielded no significant differences. These analyses were constrained by low statistical power, but the disparity in findings between the open-ended and close-ended responses may also be a function of the measure itself and the method of assessment. The questions were designed for the present study and did not form a strong scale. But additionally, using structured questionnaires to study peer-helping responses sets parameters on help-giving options and could potentially suggest a response participants may not have generated on their own (Labouliere, Tarquini, Totura, Kutash, & Karver, 2015). Open-ended questions force participants to state how they would respond without any suggestions, and may have more external validity and stronger predictive value for participants' actual behavior. It is important to consider that we did observe intervention effects on a structured measure of responses to suicidal statements (SIRI-2), but the SIRI-2 presents participants with challenging scenarios and response options that may seem reasonable and helpful to a peer (e.g., attempts to cheer the person up), even when they are incorrect.

Contrary to predictions, DORA did not have a significant effect on participants' self-stigma related to psychological help or knowledge of suicide and depression. There are several possible reasons we were unable to detect differences on these measures. First, these outcomes focus less on how to respond to or comfort a peer than those where our differences were found. Additionally, self-stigma can be resistant to change (Link, Struening, Neese-todd, Asmussen, & Phelan, 2002) and may require a longer or more intensive intervention. Also, self-stigma of seeking help was low at baseline in this sample, making it difficult to influence. Knowledge is often easier to change than self-stigma (e.g., Jacobson, Osteen, Sharpe, & Pastoor, 2012), but might not have been targeted intensively enough in the current DORA implementation and may have been inadvertently affected in the control group from repeated exposure to scenarios and questions about depression and suicide. Finally, results for these outcomes could have been affected by the relative brevity of the structured discussion in this study's implementation.

Although the results of this study are encouraging, the study had several limitations. Perhaps the largest limitations involve the adaptation of DORA for the purposes of this study. In particular, the structured discussion was 5 to 10 minutes shorter than what is recommended by DORA, and an optional trivia activity was not included. Therefore, it is possible that intervention effects would have been more pronounced if participants had been exposed to the whole program. Other limitations are related to the study's methodology. Analyzing participants' responses to an individual in a vignette is inherently limiting; it is possible that these responses do not actually predict participants' behavior in real-life. Also, due to concerns about the emotional toll it might have taken on participants, the SIRI-2 was only administered at the posttest. It would be useful to know if these effects persist and if preexisting group differences might have affected this result. Furthermore, the lack of results for the Behavioral Response Inventory items and the knowledge measure could have been a product of the scores for these measures having low reliability. In addition, our focus on a male peer was intentional, but this limited the generalizability of our results to college students' responses to distressed female peers. In fact, research has suggested that sex of the vignette protagonist influences participants' responses (White & Stillion, 1988).

Our inability to randomly assign participants to conditions was also a limitation, and although participants did not know what type of session for which they signed up and tests of pretest group differences suggested that the groups only significantly differed in their perceived stigma of seeking help, it is possible that this difference (and/or other nonsignificant group differences) affected the results. Another limitation was the possibility of demand characteristics. Although it is unlikely that control participants knew that they were "controls"—the study was advertised vaguely, and the assessments included questions about fire safety—it is possible that some control participants deduced that they were in the control group. If this was the case, this insight might have affected control participants' responses (Nichols & Maner, 2008). Additionally, the modest sample size resulted in limited statistical power. We originally sought to recruit a larger sample, but were constrained by logistical issues associated with recruiting participants for group sessions, having one person run all groups, confining data collection to avoid time-of-semester effects, and completing the entire project within one academic year. Of note, however, is that this study's sample was only slightly smaller than those of other studies evaluating suicide prevention programs (Jacobson et al., 2012; Pasco et al., 2012; Stuart, Waalen, & Haelstrom, 2003).

Although the current research represented

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a good beginning, further research is needed to evaluate DORA and other peer-peer programs. First, DORA's effect on real life peer-helping responses and help-seeking behaviors should be studied. This is important because, although several changes were statistically significant, many of the effect sizes were modest. Research studying DORA's impact on real-life behaviors could determine if these changes are practically significant and meaningful. Second, the effects of DORA should be examined over a longer period of time. Third, although DORA recommends a peer facilitator, which is valuable because it expands capacity and offers peer modeling of nonstigmatizing attitudes, this program is also used on our campus for student residence advisor training with counseling staff facilitators. It would be interesting to compare effectiveness based on leader type. Fourth, future studies could identify which components of DORA are particularly effective and then investigate the possibility of doing partial implementations for specific purposes or combining effective components with other approaches. Ways to augment the effects and reach of DORA and other peer-peer programming could also be considered including interactive online educational components and an online peer learning community. Some of these innovations are being incorporated into newer programs marketed by the producers of DORA (Screening for Mental Health, 2015). Fifth, because there is a logical progression in the development of an evidence base for a given treatment (Southam-Gerow & Prinstein, 2014) and DORA had never been evaluated, the current study compared DORA to a control program rather than an active intervention. In the future, DORA should be evaluated in comparison to other programs with similar goals to determine incremental efficacy. Finally, research examining factors that influence college students' peer-helping responses as well as moderators and mediators of intervention effects could inform further development of efficacious peer-peer outreach programs.

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