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Positive-Themed Suicide Prevention Messages Delivered by Adolescent Peer Leaders: Proximal Impact on Classmates' Coping Attitudes and Perceptions of Adult Support

Mariya Petrova, Peter A. Wyman, Karen Schmeelk-Cone, and Anthony R. Pisani

Department of Psychiatry, University of Rochester School of Medicine and Dentistry

Abstract

Developing science-based communication guidance and positive-themed messages for suicide prevention are important priorities. Drawing on social learning and elaboration likelihood models, we designed and tested two positive-focused presentations by high school peer leaders delivered in the context of a suicide prevention program (Sources of Strength). Thirty six classrooms in four schools (N=706 students) were randomized to: (a) peer leader modeling of healthy coping, (b) peer leader modeling plus audience involvement to identify trusted adults, or (c) control condition. Students' attitudes and norms were assessed by immediate post-only assessments. Exposure to either presentation enhanced positive coping attitudes and perceptions of adult support. Students who reported suicide ideation in the past 12 months benefited more than non-suicidal students. Beyond modeling alone, audience involvement modestly enhanced expectations of adult support, congruent with the elaboration likelihood model. Positive peer modeling is a promising alternative to communications focused on negative consequences and directives and may enhance social-interpersonal factors linked to reduced suicidal behaviors.

Identifying effective and safe suicide prevention communication strategies is a critical research priority according to several policy groups. The 2012 National Strategy for Suicide Prevention recommended developing and testing communication activities to reach specific population segments (NSSP, 2012). Langford, Litts and Pearson (2013), noting that many current communication strategies aimed at increasing awareness of suicide could inadvertently detract from suicide prevention efforts, cited an urgent need for science-based communications guidance and for research to develop positive-themed suicide prevention messages.

Communications Targeting Negative Consequences

Communication campaigns commonly highlight negative consequences of a problem and combine that information with directives about alternative behaviors. This approach is consistent with the health belief model (HBM) (Becker, 1974), an influential conceptual framework that focuses on rational decision-making processes. The HBM posits that individuals change their health-related actions based on perceptions that problems are

avoidable, knowledge of alternative behaviors, and expectations that they can employ those behaviors. An example of an effective public messaging campaign emphasizing the costs and means of avoiding a problem is *Click it or ticket*, which increased seat belt use (NHTSA, 2004). Other campaigns highlighting costs of unhealthy behaviors have failed to demonstrate positive benefits, such as advertising through the National Youth Anti-Drug Media Campaign (Hornik, 2008).

Responding to evidence that few suicidal individuals receive timely treatment, many suicide prevention communications emphasize negative consequences of untreated depression or suicidal behavior, combined with information about treatment availability. However, whether such communications increase help seeking is largely unknown (Langford, 2013), and one study suggests that such a strategy could be harmful for adolescents (Klimes-Dougan, 2009). Specifically, Klimes-Dougan and colleagues tested two common Public Service Announcement (PSA) strategies using a randomized design that assigned high school students to view: (a) a 30-second TV infomercial about depression and its treatment; (b) a billboard simulation depicting a sad face and the slogan “Prevent Suicide, Treat Depression: See your Doctor”; or (c) a no message control. Surveys of student participants found that the longer infomercial increased students’ accurate identifying of depression symptoms and perceptions that PSAs were beneficial. However, neither PSA enhanced help-seeking or coping attitudes. Further, among students who were depressed and/or suicidal, exposure to either one of the PSAs decreased help-seeking attitudes, suggesting possible negative, iatrogenic effects of messages focused on negative consequences for vulnerable youth. Evidence that vulnerable youth may respond negatively to program content emphasizing suicide risk factors also comes from Shaffer et al.’s (1990) finding that among 9th and 10th grade students exposed to suicide prevention curricula delivered by adults, those with a prior suicide attempt reported more distress than non-suicidal peers. Thus, research to identify safe, effective alternatives to messages focused on negatives consequences is imperative.

Use of Peer Leaders to Model Positive Consequences: An Alternative Strategy

Social learning theory (SLT) and research on diffusion of innovations point to modeling of positive behaviors as a communication strategy to modify health-related behaviors including those targeted in suicide prevention. SLT posits that behavior change frequently occurs through imitation or observation of one’s peers (Bandura, 1977), and key opinion leaders are critical in the decision of their close affiliates to adopt new behaviors as innovations spread (Rogers, 2003). Congruent with the importance of peers for adolescents (Krohn, 1999), peer leaders demonstrating healthy and successful coping behaviors can increase spread of positive change through natural adolescent social networks (Wyman, 2010). Further, modeling positive coping behavior – versus giving a behavioral directive such often contained in messages focused on negative consequences of emotional problems - may decrease reactivity (Grandpre, 2003).

The elaboration likelihood model (ELM; Petty & Cacioppo, 1986) complements SLT by focusing on the extent to which communications engage audiences in deeper reflection and

consideration. For some behaviors, more durable changes are likely through communications that inform and also provide high levels of personal relevance and opportunities for critical thinking (Petty & Cacioppo, 1986). The ELM points to ways of enhancing the effects of peer models by active audience engagement. For example, peer models inviting their audience to consider how messages apply to their own lives may deepen opportunities to critically evaluate personal benefits and overcome barriers to change.

Using peer leaders in program implementation has reduced high-risk sex behaviors (Kelly, 1992) and substance use (Valente, 2004) but has not yet been systematically employed in suicide prevention. Signs of Suicide (SOS), which shows promise in reducing short-term suicide attempts, uses adolescent peer models to illustrate positive help seeking for depression (Aseltine & DeMartino, 2004). However, tests of SOS have not shown increased student help-seeking, which might be expected if peer models were effective in that program. Evaluation of another suicide prevention curriculum using peer models in educational videos, Surviving the Teenage Years (Ciffone, 2007), showed increases in secondary students' help seeking attitudes, although a quasi-experimental design limits the strength of those findings. The Sources of Strength program trains diverse adolescent peer leaders to promote healthy coping norms and practices, and a school-based randomized trial (Wyman, 2010) found that four months of peer leader activities increased school-wide help-seeking norms and perceptions of adult support for suicidal youth. However, that test of Sources of Strength did not evaluate peer leader communication strategies nor differentiate positive modeling practices from other, informal contacts that peer leaders had with peers. Despite the natural applicability of peer leaders to suicide prevention objectives, we are aware of no studies testing positive-themed communication strategies using peer models on well-established suicide prevention targets such as help seeking acceptability and healthy coping norms (Gould, 2004; Wyman, 2008).

Present Study

The purpose of the present study was to examine the short-term impact of positive-themed suicide prevention messaging delivered by adolescent peer models through Sources of Strength and to evaluate the added benefit of soliciting active participation from the target audience. Specifically, student peer leaders trained in Sources of Strength (LoMurray, 2005; Wyman, 2010) delivered two positive-oriented communications to high school classrooms. Both presentations had peer leaders share narratives about their own use of healthy coping resources and engaging trusted adults. Based on SLT and diffusion of innovation principles, peer leader modeling was expected to increase audience members' perceptions that influential peers use positive coping strategies, thereby enhancing their own acceptance of those strategies. One presentation incorporated active engagement with the message by having peer leaders invite students to nominate their own trusted adults. Based on the ELM, audience involvement was expected to increase personal relevance of the message and enhance help seeking acceptance and perceptions of adult support, above and beyond peer modeling alone.

We also examined whether presentation impact varied as a function of suicide ideation status in the past year. Because suicidal status is associated with lower help seeking and fewer ties to adults (Gould, 2004; Pisani, 2012; Wyman, 2008), we expected that suicidal students would have the greatest potential to gain from peer endorsement of positive coping and trusted adults. Evidence that suicidal students specifically benefited from these peer leader communications would suggest that positive-themed communications using peer models can address the needs of students at high risk for suicide, who may be potentially reactive and rejecting of problem-focused messages (Klimes-Dougan, 2009).

Method

Participants and Design

Four high schools implementing Sources of Strength in an eastern state were selected. Three schools in rural areas served 9th-12th grade students (populations 350 – 900 students) and one school in a small metropolitan region served 2,500 10th-12th-grade students. All the school populations were predominantly non-Hispanic, white and the proportion of students receiving reduced school lunch was above the state average, indicating low income.

A school-blocked randomized design was employed to test peer leader messaging activities, with random assignment occurring at the classroom level since entire classrooms were the intended recipients. In consultation with administrators, 36 general education classrooms were selected (3-12 per school). Administrators selected classrooms from subject areas that all students within a grade level were enrolled in to ensure that the students within the classrooms were representative of the grade level. Within each school, classrooms were stratified by grade level and randomly assigned to: (1) peer leader modeling; (2) peer leader modeling plus classroom interactive component; or (3) control condition.

Procedures

Students provided assent or consent (for students 18 or older); all students received an information form that included helping resources for suicidal students or those concerned about the safety of a peer. All parents were sent an information letter, which included instructions on how to decline their child's participation. Less than 1% of parents declined. A group of 3-6 peer leaders visited classrooms and delivered a pre-rehearsed presentation (see below). Surveys were administered in the classroom by trained research staff approximately 5 – 10 minutes after the presentations. The University of Rochester Institutional Review Board approved the protocol. Classrooms in the control condition received presentations with peer leader modeling and an interactive activity after administration of the survey.

Intervention Conditions

The present study occurred during Sources of Strength (Wyman, 2010) implementation, which has three phases: (1) School community preparation, (2) Nomination and training of student PLs and (3) Peer leader messaging. The training of student peer leaders (along with their adult advisors) has a major focus on interactive learning about eight protective 'sources of strength' (family support, positive friends, mentors, healthy activities, generosity,

spirituality, medical access, and mental health access) as well as the importance of having multiple strengths to cope with challenging times. At the training students learn skills for increasing those resources for themselves and others. They also learn to connect suicidal peers with supports, especially trusted adults. Each school used standard procedures to nominate 5-10% of students as peer leaders, selecting key opinion leaders in diverse groups. The training followed a standardized curriculum (LoMurray, 1995); the trainings were not recorded or rated for fidelity. During the messaging phase peer leaders use multiple messaging activities (presentations, PSAs, or videos) to encourage other students to grow and use their own sources of strength, including reaching out to trusted adults when they or their peers are in distress (including being suicidal). The presentations tested through this study were the first step of the school-wide messaging phase to minimize students' exposure to other intervention content. A research team member assisted peer leader teams with preparing two types of classroom presentations:

Peer Leader Modeling—To offer other students models of positive coping and increase acceptability of engaging trusted adults, each peer leader told a personal narrative about how using two or more of the 'sources of strength' helped him/her cope with adversity; highlighted the concept that the more resources one has the better he/she can handle difficult times; how he/she would contact a trusted adult when aware of a suicidal friend and shared the names of 1-2 of his/her own trusted adults (approximately one min. per peer leader; 3-5 PL presenters).

Peer Leader Modeling + Interactive Activity (Naming of Adults)—In addition to all elements of the standard modeling presentation, the final presenting peer leader invited students to write the names of adults who they would go to for help if concerned about a suicidal friend on a post-it note and, if they wished, add the note to a poster. The rationale for engaging students to identify their own trusted adults was based on principles from the Elaboration Likelihood Model (Petty, 1986), suggesting that higher audience involvement and opportunities for critical thinking may increase engagement and adoption of new information.

Peer leaders and adult facilitators prepared scripts for their presentations (10-15 min), which were rehearsed. An adult present during each presentation prompted peer leaders, if needed, to cover all components, and responded to any student in case he/she became upset or indicated a need for further follow-up.

Measures

We selected measures that had previously demonstrated adequate psychometric properties. Internal consistency (Cronbach's alpha) is reported for present sample. Unless otherwise noted all measures were answered on a four-point Likert scale (Strong Agree – Strongly Disagree), with higher scores reflecting positive attitudes and perceptions.

Coping with Distress and Suicide Concerns was assessed as follows: *Help Seeking from Adults at School* (Schmeelk-Cone, 2012; Wyman, 2008) assesses attitudes and perceived norms about help seeking acceptability. Four questions ($\alpha = 0.87$) beginning with the stem, "If I was really upset and needed help..." cover intentions to seek help from adults at school,

expectations of availability of adult help, and perceived peer and family support of help seeking. *Reject Codes of Silence* (Schmeelk-Cone, 2012; Wyman, 2010) assesses attitudes toward overcoming secrecy barriers to engage adults for suicidal peers with three items ($\alpha = 0.67$) (e.g., I would tell an adult about a suicidal friend, even if that friend asked me to keep it secret). *Maladaptive Coping* (Gould, 2004) consists of four items ($\alpha = 0.71$) about acceptability of getting help, using drugs and alcohol to cope with problems, and suicide acceptability. Higher scores indicate more maladaptive attitudes. *Sources of Strength Coping* (Wyman, 2010; Pisani, 2012) assesses extent to which students view eight resources identified by research as suicide behavior protective factors as useful to them in overcoming challenges in their life. This nine-item scale ($\alpha = 0.89$) covers informal (e.g. family support, positive friends, mentors) and formal (e.g. mental and medical health access) resources.

Perceptions of Adult Support was assessed as follows: *Adult Help for Suicidal Youth* (Schmeelk-Cone, 2012) assesses perceptions that adults can help suicidal students in their school using four items ($\alpha = 0.67$) (e.g., Students with problems can get help from adults in my school). *Trusted Adults at School* (Pisani, 2013) evaluates students' perceptions about their engagement with caring adults in their school. Beginning with the stem "At school there is an adult who..." students respond to four questions ($\alpha = 0.92$) (e.g., "listens to what I have to say"). *Naming Trusted Adults* (Wyman, 2010) is measured by students being asked to write down the names of specific adults they would ask for help for themselves or a friend.

Suicidal Ideation was assessed with the widely used Youth Risk Behavior Survey (YRBS; CDC, 2010): "During the past 12 months did you seriously consider attempting suicide" (Y/N). Developed for population-based assessments, the YRBS scale has well-established reliability and validity (Eaton, 2010), and the reliability of individual items has been demonstrated for high school students (Brener, 2002).

Help Seeking from Adults, Reject Codes of Silence and Adult Help for Suicidal Youth differentiate between adolescents with and without self-reported suicidal ideation, suicide attempt and elevated depression (known-groups validity; Schmeelk-Cone, 2012). The above three scales and Sources of Strength Coping are associated with disclosure and help seeking behavior for suicidal behavior (Pisani, 2012). In support of validity of Maladaptive Coping, Gould and colleagues (2004) reported correlations of that measure with elevated depression and serious suicidal ideation/behavior. Low scores on the trusted adults at School scale were associated self-reported suicide attempts (Pisani, 2013).

Statistical Analyses

To test the effects of the peer leader messaging activities, multi-level models were estimated using HLM 6.0 (Raudenbush, Bryk, & Congdon, 2004), in which students were nested within classrooms (classroom-level ICCs ranged from 0.004 – 0.035). A preliminary analysis showed minimal school-level clustering (ICCs < 0.02); thus, school-level clustering was not accounted for in the analyses. Presentation condition was entered as a classroom-level variable, a conservative approach that follows expert recommendations that the unit of analysis be the same as the unit of randomization in testing interventions. Main models compared presentation conditions as follows: control (coded as 0), PL Modeling (coded as

1), and PL Modeling+Interactive (coded as 2). Each HLM model included grade level, sex (female codes 1; male 0) and suicide ideation status (SI coded 1; non-SI coded 0). Race/ethnicity was not included due to minimal variation. Suicidal ideation (SI) status was tested as a moderator of presentation impact in separate models that included all main effects plus a presentation condition*SI interaction term. Moderate correlations among outcome measures (range: 0.17 – 0.61; median: 0.41) warranted modeling each outcome separately rather than a multivariate approach.

Results

Of 833 students in the 36 classrooms, 706 (84.8%) participated. Table 1 summarizes sample characteristics for the total sample and by randomized condition. The students were predominantly white (91.6%). The three randomized conditions were balanced on sex, grade, race/ethnicity, and past year suicidal ideation (SI), which was reported by 12.7% of students. Means (SD) on measures of proximal outcomes are summarized in the bottom-half of Table 1.

Exposure to Peer Leader Communications Enhanced Attitudes and Perceptions

We found consistent evidence that exposure to either peer leader presentation enhanced proximal classroom coping attitudes and perceptions of adult support, as shown by directionally-positive estimates ($p < .05$) for presentation condition in HLM models that included all three presentation conditions (column 1, Table 2). Specifically, peer leader presentations enhanced help seeking acceptability, attitudes about overcoming barriers to helping suicidal youth, perceptions that adults can help suicidal youth, and the naming of specific trusted adults.

In addition to differences by presentation condition, other main effects were as follows (columns 2-4, Table 2): females reported more positive attitudes and perceptions than males. Overall across all three conditions students with SI reported more maladaptive attitudes and perceptions including lower expectations that adults help suicidal peers, and fewer relationships with engaged adults. Students in older grades reported having more adults to trust at school.

We next examined if suicide ideation moderated the effect of intervention condition. Exposure to either peer leader presentation benefited students with past-year suicidal ideation more than non-suicidal students, as shown by condition*SI interactions (See column 5, Table 2). Students with SI benefited more on: help seeking acceptability, sources of strength coping, perceptions that adults help suicidal youth, and relationships with engaged adults. For example, Adult Help for Suicidal Youth levels in control classes were lower among suicidal students (M: 2.72; SD: 0.72) versus non-suicidal students (M: 3.01; SD: 0.50). In contrast, after presentations Adult Help levels were comparable in suicidal (PL modeling M: 3.13 (SD: 0.75); PL Modeling+Interactive M: 3.33 (SD: 0.72)) and non-suicidal students (PL modeling M: 3.33 (SD: 0.57); PL Modeling+Interactive M: 3.36 (SD: 0.53)). A similar pattern showing that the peer leader presentations reduced gaps between suicidal and non-suicidal students was found across measures. We also tested if student gender moderated the impact of receiving a peer leader presentation and found that females

benefited more than males on Adult Help (est (SE) = 0.16 (.056), $p < .01$): whereas female students had higher levels of Adult Help than males after receiving either the PL modeling or PL Modeling+Interactive presentation, males and females reported equivalent levels of Adult Help in the control condition.

Classroom Interaction Enhanced Impact of Peer Leader Modeling

We found modest evidence that the classroom interaction enhanced peer leader modeling alone from results of HLM models contrasting each presentation condition vs. the other two conditions using dummy codes: PL Modeling vs. Other and PL Modeling+Interaction vs. Other. These results are summarized in Table 3. Specifically, PL modeling plus classroom interaction had the most consistent, positive impact on students' attitudes and perceptions (Table 3, column 3) when contrasted with the other two conditions. Whereas classrooms receiving PL Modeling compared to the other two groups reported more positive attitudes only on rejecting codes of silence, PL Modeling+Interaction classrooms reported more positive help seeking acceptance, rejecting codes of silence, adults helping suicidal peers, and naming trusted adults. Student SI status also moderated the effects of each presentation condition, as shown by several significant condition*SI status interactions (Table 3, columns 2 and 4). Examination of means by condition showed that largest effects among suicidal students. Females benefited more than males on perceptions of Adult Help in the PL Modeling+Interactive presentation vs. other conditions (est (SE) = 0.32 (.112), $p < .01$).

The two peer leader presentations were directly contrasted in a third set of HLM models that excluded control classrooms (Table 3, columns 5-6). Compared to peer leader modeling alone, exposure to modeling plus interaction enhanced only perceptions of having trusted adults at school. SI status did not moderate any differences between the presentations. Gender also moderated differences between the presentations for Sources of Strength Coping (est (SE) = 0.26 (.112), $p < .05$): female students rated their coping higher than males in the PL Modeling+Interactive condition, whereas there was no gender difference in the PL Modeling condition.

Discussion

The present study is, to the best of our knowledge, the first to evaluate the impact of positive-themed suicide prevention communications on high school students' attitudes and perceptions. Our findings have significance for suicide prevention by demonstrating that peer modeling of healthy coping attitudes and practices is a promising alternative to widely used communication strategies focused on negative costs of mental health problems (Langford, 2013). These results provide empirical support for practice recommendations by the National Action Alliance for Suicide Prevention promoting strength-based public messaging, especially for adolescents. Modeling healthy coping practices by peer leaders enhanced, immediately following the presentations, classroom-wide help seeking acceptance and intentions, attitudes about overcoming barriers to helping suicidal peers, perceptions that their school has capable adults to help suicidal peers, and naming trusted adults. Linked to lower risk for suicidal behavior (Schmeelk-Cone, 2012) and increased help seeking among suicidal youth (Pisani, 2012), these attitudes and perceptions are potentially important

targets for suicide prevention communications. Our findings also add to research on Sources of Strength, which a prior study found enhanced school-wide coping norms after five months (Wyman, 2010) but did not evaluate peer leader presentations. Strengths of the present study include use of a randomized design assigning classrooms within the same school to messaging or control conditions and HLM modeling to test impact at the classroom-level.

Evidence that students who had recently experienced suicidal ideation benefited more than students without suicidal ideation from peer leader communications adds to the significance of our findings. Peer leader presentations had greater impact for suicidal students on enhancing help seeking acceptability, perceptions that natural protective factors help in coping, that adults help suicidal youth and are engaged and caring. Our findings contrast with Klimes-Dougan and colleagues' (2009) findings that exposure to typical PSA messages depicting negative costs of untreated problems, and directing them to seek help, reduced help-seeking attitudes among suicidal and/or depressed adolescents. Although neither our own nor Klimes-Dougan and colleagues' (2009) study tested mechanisms accounting for different responses among suicidal and non-suicidal youth, these disparate findings suggest that distressed youth may respond more favorably to messages that convey hopefulness, whereas messages that underscore distress and potential harm may be less likely to activate motivations for change. In addition, distressed youth may perceive more favorably a modeling of healthy coping versus a directive, which could undermine autonomy and promote reactivity (Grandpre, 2003). Ascertaining how cognitive processing changes from emotional distress - such as reductions in cognitive flexibility and attention shifting among depressed individuals (Forbes & Dahl, 2005) - influence responsiveness to suicide prevention communications is an important priority for research.

In addition to showing that positive peer models can serve as effective agents in suicide prevention communications, our findings also suggest that deepening audience members' personal involvement in communications may strengthen the impact of positive peer modeling. We found modest evidence that a brief interactive activity enhanced impact of peer leader communications on perceptions of adults support, a finding congruent with the elaboration likelihood model (Petty & Cacioppo, 1986). It would be beneficial for future research to investigate what activities would provide sufficient dose of engagement for more prominent effects and effects that contribute to behavioral changes in coping and help seeking. Activities to increase engagement in the Sources of Strength program could include exercises for students to engage with their trusted adults and discuss with peers the barriers they experience to seeking help, such as perceived peer pressures. How to enhance engagement in other, more traditional suicide prevention communications is also a challenge and opportunity for future research. The peer-led presentations in this study also benefited female more than male students on perceptions that adults help suicidal youth. Gender is one of the many factors influencing students' different preferences and needs, which suggests that creating 'option rich' (Pisani, 2013) interventions (as opposed to one size fits all activities) is an important avenue for future research.

Several study limitations should be noted. This study evaluated only immediate, proximal effects of peer presentations on classmates' attitudes and perceptions. Additional research is

needed to determine how lasting such effects are, what factors such as gender and age contribute to stability of those changes and translate into actual behavior change. Selected from predominantly rural communities, the participating schools served primarily white students, which limits generalization. Although the high rate of participation (84.8%) suggests that our sample was largely representative of students in the participating schools, we were unable to determine if non-participants shared specific characteristics that could reduce generalizability. Our study was also not designed to disentangle the impact of peer models when audience members do or do not have close personal relationships with them. We recommend that future research investigate how positive modeling might be used in other communication efforts such as public PSAs and efforts to enhance social systems to promote belongingness and other key social-interpersonal protective factors for suicide (Joiner, 2005). The present study design also could not separate the effects of the messenger (student peers) and message content and structure (modeling consequences of positive coping vs. negative consequences of untreated problems), which is a needed focus for future research in building more complete science-based communication guidance. Comparing peer leader delivered messages vs. adult –delivered messages would also be an important priority for future research to clarify the effects of message source on adolescents' response to positive-themed messages.

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Table 1

Student characteristics and coping attitudes and perceptions of adult support by randomized presentation condition

	Total		Presentation Condition			
	N (%)	N (%)	Control	PL Modeling	PL Modeling & Interactive	N (%)
<i>Classrooms</i>	36	12	11	13		
<i>Students</i>	706	210	252	244		
<i>Race/Ethnicity</i>						
Black	20 (3.0)	9 (4.4)	5 (2.1)	6 (2.6)		
Hispanic	19 (3.5)	2 (1.2)	6 (3.2)	11 (5.7)		
White	620 (91.6)	191 (93.2)	221 (91.7)	208 (90.0)		
Other	37 (5.5)	5 (2.5)	15 (6.2)	17 (7.4)		
<i>Sex</i>	347 (49.2)	97 (46.2)	132 (52.6)	118 (48.4)		
Female						
<i>Grade</i>						
9	137 (20.1)	39 (18.9)	55 (22.6)	43 (18.4)		
10	181 (26.5)	55 (26.7)	54 (22.2)	72 (30.8)		
11	175 (25.6)	52 (25.2)	67 (27.6)	56 (23.9)		
12	190 (27.8)	60 (29.1)	67 (27.6)	63 (26.9)		
<i>Suicide Behavior 1-yr</i>						
Ideation (%)	88 (12.7)	25 (12.2)	32 (12.9)	31 (13.0)		
Attempt (%)	40 (5.9)	12 (5.8)	12 (4.9)	16 (7.0)		
<i>Coping Attitudes Norms</i>						
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Help Seeking from Adults	2.94 (.72)	2.83 (.76)	2.95 (.73)	3.05 (.68)		
Reject Codes of Silence	3.31 (.53)	3.24 (.60)	3.38 (.64)	3.37 (.52)		
Maladaptive Coping	1.69 (.57)	1.77 (.58)	1.64 (.58)	1.65 (.53)		
Sources of Strength Coping	2.16 (.60)	2.11 (.62)	2.17 (.62)	2.21 (.59)		
<i>Perceptions of Adult Support</i>						
Adult Help for Suicidal Youth	3.29 (.57)	3.23 (.57)	3.32 (.59)	3.37 (.56)		
Trusted Adults at School	3.15 (.69)	3.12 (.65)	3.11 (.71)	3.25 (.69)		
Trusted Adult Naming	1.47 (1.79)	1.15 (1.48)	1.60 (1.91)	1.65 (1.86)		

Note. Percentages in each column do not add up to 100 due to missing information.

Table 2

Model estimates (SE) for 3-group peer leader presentation condition

	Main effects			Moderator effects	
	Condition Est (SE)	Grade Est (SE)	Sex Est (SE)	Suicide Ideation Est (SE)	Condition * SI
<i>Coping Attitudes & Suicide Norms</i>					
Help Seeking from Adults	0.115 (.036)**	0.047 (.028)	0.152 (.056)**	-0.307 (.082)***	0.342 (.103)***
Reject Codes of Silence	0.078 (.028)**	0.032 (.022)	0.243 (.040)***	-0.299 (.058)***	0.006 (.074)
Maladaptive Coping	-0.057 (.031)	0.023 (.024)	-0.319 (.041)***	0.468 (.060)***	-0.055 (.076)
Sources of Strength Coping	0.053 (.034)	0.050 (.026)	0.148 (.045)**	-0.542 (.066)***	0.238 (.083)**
<i>Perceptions of Adult Support</i>					
Adult Help for Suicidal Youth	0.068 (.029)*◆	0.038 (.023)	0.167 (.044)	-0.287 (.065)***	0.224 (.082)**
Trusted Adults at School	0.066 (.035)	0.074 (.026)**	0.156 (.053)**	-0.255 (.079)***	0.277 (.099)**
Trusted Adult Naming	0.235 (.105)*	-0.077 (.082)	0.622 (.139)***	-0.108 (.202)	0.386 (.256)

Note. Presentation condition coded as: control = 0, PL modeling = 1, PL modeling + interactive = 2. Sex coded as female = 1, male = 0. SI is suicide ideation in past year (coded No=0, YES = 1);

**
p<.01;*
p<.05;◆
effect moderated by sex.

Table 3

Model estimates (SE) for between group presentation comparisons

	PL Model vs. Other		PL Model+Interact vs. Other		PL Model vs. PL Model+Interact	
	Condition	Condition *SI	Condition	Condition *SI	Condition	Condition *SI
<i>Coping Attitudes & Suicide Norms</i>						
Help Seeking from Adults	0.113 (.071)	0.675 (.204)**	0.229 (.072)**	0.718 (.206)**	0.106 (.071)	0.032 (.191)
Reject Codes of Silence	0.135 (.056)*	0.063 (.147)	0.160 (.056)**	0.020 (.148)	0.026 (.059)	-0.035 (.147)
Maladaptive Coping	-0.107 (.061)	-0.159 (.152)	-0.117 (.061)	-0.123 (.153)	0.001 (.061)	-0.006 (.137)
Sources of Strength Coping	0.049 (.069)	0.531 (.165)**	0.106 (.068)	0.506 (.166)**	0.055 (.063)◆	-0.043 (.157)
<i>Perceptions of Adult Support</i>						
Adult Help for Suicidal Youth	0.089 (.059)	0.360 (.163)*	0.138 (.059)*◆	0.463 (.164)**	0.046 (.055)	0.111 (.154)
Trusted Adults at School	-0.023 (.068)	0.366 (.196)	0.127 (.069)	0.560 (.198)**	0.159 (.071)*	0.154 (.187)
Trusted Adult Naming	0.403 (.211)	0.272 (.510)	0.478 (.209)*	0.768 (.513)	0.115 (.202)	0.517 (.399)

Note: All models include following covariates: grade, sex and students' suicide ideation (SI) status.

*** p<.01;

* p<.05;

◆ effect moderated by sex.