



## Connect: An Effective Community-Based Youth Suicide Prevention Program

GRETCHEN BEAN, MSW, AND KRISTINE M. BABER, PHD

Youth suicide prevention is an important public health issue. However, few prevention programs are theory driven or systematically evaluated. This study evaluated Connect, a community-based youth suicide prevention program. Analysis of pre and posttraining questionnaires from 648 adults and 204 high school students revealed significant changes in knowledge and attitudes about suicide, increased belief in the usefulness of mental health care, and reduction of stigma associated with seeking help. Adults' preparedness to help also increased significantly as did the likelihood that youth participants would seek adult assistance if they were concerned about a peer. Implications of findings are discussed.

Youth suicide is a compelling public health issue, both because it is the third leading cause of death among 15–24 year olds and because there is general consensus that it is preventable. Over the past decade, numerous youth suicide prevention strategies have emerged, many of which employ education and screening programs. Gatekeeper training programs, identified by Mann et al. (2005) as one of the most promising strategies, prepare key community stakeholders (e.g., educators, parents, health care providers, first responders, police officers, faith leaders) to understand the risk and protective factors associated with suicide, to identify at-risk youth, to be aware of appropriate community resources, and to make referrals when necessary. Gatekeeper strategies also decrease stigma by raising awareness of effective mental health treatment and the importance of increasing help-seeking behaviors.

Despite the promise of gatekeeper models, they frequently lack theoretical grounding and rigorous outcome evaluation (Commission on Youth Suicide Prevention, 2005; Mann et al., 2005). Of the programs that are evidence-based and well-evaluated, most are school-based and use education or awareness approaches. Among school-based programs, those that are comprehensive and include linkages to the community are the most promising (Kalafat, 2003). However, the existence of such comprehensive programs and the extent of their linkages to the community appear to be limited.

Evaluation of true community-based programs can be challenging for pragmatic reasons. Time spent explaining the research process, securing informed consent, and completing questionnaires is precious time taken from training. Rigorous evaluation also is challenging because the outcomes of ultimate interest involve statistically rare events (Bogenschneider, 1996; Izzo, Connell, Gambone, & Bradshaw, 2004). Programs that identify and then assist youth at risk for suicide are based on the assumption that these efforts will result in fewer suicide attempts; fewer attempts should result in fewer deaths by suicide (Gutierrez, 2006). However,

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GRETCHEN BEAN, University of New Hampshire; KRISTINE M. BABER, University of New Hampshire, Emerita.

Address correspondence to Gretchen Bean, University of New Hampshire, Dept. of Social Work, 55 College Rd., Durham, NH 03824; E-mail: Gretchen.bean@unh.edu

successful interventions with youth, such as efforts to increase help-seeking and reduce stigma related to mental health care, ideally will occur before self-injury threats and attempts become a reality. Therefore, immediate and intermediate outcomes, such as knowledge and attitudinal changes, become useful tools for evaluating the effectiveness of youth suicide prevention programs. Evaluations of these programs indicate that intermediate outcomes can help predict motivation to help. Intermediate outcomes also predict the likelihood that participants will be able to skillfully apply knowledge in real life situations (Albarracín, Johnson, Fishbein, & Muellerleile, 2001; Colquitt, LePine, & Noe, 2000; Thompson, Eggert, Randell, & Pike, 2001). In addition, suicide prevention training models appear to increase the confidence of mental health professionals in assessing and providing treatment to those at risk (Oordt, Jobes, Fonsesca, & Schmidt, 2009), suggesting the value of such training programs for professionals as well as laypersons.

Stigma associated with suicide and mental illness is a significant obstacle to community adoption of suicide prevention programs, as well as a major barrier to seek mental health care (U.S. Department of Health and Human Services, 2001). Adolescents may perceive this stigma and have concerns about being ridiculed, or they may think that therapy will be intrusive, threatening, or ineffective (Bolton Oetzel & Sherer, 2003). Youth who endorse stigma related to mental health care, like their adult counterparts, have been found to be less likely than others to seek help when it is needed (Corrigan, 2004). Although much of the programming focused on stigma reduction has not been evaluated rigorously, there is some evidence that educating about mental illness and the effectiveness of mental health treatment can reduce the likelihood of stigma acting as a barrier to seeking mental health care (Penn et al., 2005). In addition, Penn and colleagues suggest that creating linkages among the gatekeepers who may first identify youth at risk and school counselors, primary

care providers, and mental health care providers may result in young people seeking and receiving treatment with as little stigma as possible.

Comprehensive, community-based prevention programs frequently adopt an ecological perspective that takes into consideration not only influential factors in immediate microsystems, but also more distal exo and macrolevel variables. Ecological models of prevention are founded on the belief that the most effective approach to support youth is to reduce risks that compromise health and enhance protective factors that mitigate risk and encourage healthy development (Bogenschneider, 1996; Bronfenbrenner, 1979). Formally identified eco-levels encourage a comprehensive approach to understand many factors that contribute to problems and offer multiple possibilities for intervention. In fact, community-level interventions that have incorporated multilevel approaches to address health and social issues by targeting schools, law enforcement, health care professionals, parents, and peers have been successful in producing community-wide behavioral change (Wandersman & Florin, 2003). Accordingly, leading researchers have called for the development of comprehensive, integrated programs that involve multiple domains—the individual, family, school, community, media, and health care system—to address suicide prevention (Gould, Greenberg, Velting, & Shaffer, 2006).

We report here on the evaluation of a comprehensive, community-based youth suicide prevention program that is guided by an ecological perspective—the National Alliance on Mental Illness—New Hampshire (NAMI NH) Connect Suicide Prevention Project (Connect).<sup>1</sup> The youth suicide prevention training and evaluation components of Connect were piloted previously with a sample of 157 adults and 131 students (Baber & Bean, 2009). The current study involved a two-community intervention using Connect

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<sup>1</sup>NAMI NH's Connect Suicide Prevention Project was previously named the Frameworks Youth Suicide Prevention Project.

with an added focus on the reduction of stigma associated with youth suicide prevention and the use of mental health care.

#### *The Connect Suicide Prevention Project*

Connect seeks to build community competence for identifying youth at risk for suicide by modifying the social environment and developing shared knowledge, language, and understanding among all constituencies in a community. The overall goal of the program is to reduce the number of youth suicides by improving community members' knowledge about youth suicide and preparing them to recognize youth at risk. Connect also aims to increase community members' belief in the usefulness of mental health care. In addition, the trainings seek to reduce stigma among program participants and thus modify the larger social environment.

Connect utilizes an ecological model and intervenes at multiple eco-levels to reduce risk and enhance protective factors. Through trainings and protocols, the program functions at the mesosystem level to link the various microsystems in which youth participate—family, peers, school, and other community programs and institutions. The underlying assumption of Connect is that youth suicide prevention is best accomplished by training individuals in all of the microsystems within which youth function to recognize young people at risk for suicide and to connect them with services. Trained individuals can then refer the at-risk youth to supportive care. The program also provides high school-aged youth with training designed to ensure they know how to identify peers who are at risk and to increase the likelihood that they will seek assistance from an adult if they are concerned about themselves or another young person. Other aspects of Connect target services and social policies in the exosystem that indirectly influence youth and address macrolevel issues, such as attitudes and ideologies. Connect trainings encourage the integration of program protocols for responding to youth at risk for

suicide into institutional policies and procedures to bring about structural change and maximize the likelihood that the effects of the program will be sustained.

Connect has three main components: common gatekeeper training for all participants; discipline-specific training for professionals in 13 different disciplines (e.g., law enforcement, educators, clergy); and clear, evidence-supported protocols that provide an integrated approach to guide the response of individuals who recognize a youth as being at risk for suicide. The protocols attempt to raise participants' awareness of factors that may indicate that youth are at heightened risk, prepare the participants to competently connect with such youth, and enhance their ability to connect the youth with appropriate professionals and services. The discipline-specific protocols and training provide specific action steps to reduce gaps between provider systems and ensure a coordinated community response.

The 3-hour gatekeeper training consists of PowerPoint presentations, role plays, and a variety of interactive activities. Each person trained also receives a copy of the general or appropriate discipline-specific protocol. Information about how other professionals are likely to respond to a youth suicide attempt or threat also is provided to encourage coordination of efforts and to demystify the role and potential responses of mental health providers. Student (peer) training emphasizes the importance of seeking help from an adult and includes distribution of a list of all the adults in their community who have participated in the Connect training so each youth can identify an adult to whom she or he could turn if there was concern about themselves or another youth.

By training a critical mass of individuals in the common procedures for responding to youth suicide, Connect aims to increase not only the competence of individual participants, but also of community members' capacity to respond as a whole. The comprehensive nature of the program helps build linkages among professionals,

programs, and services in a community which, in turn, may improve access to mental health care, facilitate an integrated support system for youth in the area, and address community risk and protective factors.

### *The Current Study*

The current study seeks to substantiate the effectiveness of applying an ecological model to a community-based youth suicide prevention program. Pilot implementation of Connect showed the program to be effective in increasing participants' knowledge about youth suicide, their preparedness to help a young person who might be at risk for suicide, and their belief that mental health care is useful for youth who may be thinking about injuring, or who have injured, themselves (Baber & Bean, 2009). The pilot also demonstrated the program's ability to increase the likelihood that trained youth will turn to an adult for assistance if they are concerned about a peer, rather than try to deal with the situation alone. The current study seeks to extend these positive results from the pilot study to additional communities. Specifically, we hypothesize that Connect trainings will:

- Increase participants' knowledge about youth suicide prevention and influence beliefs and attitudes related to identifying and responding to youth who may be at risk.
- Increase adult participants' perceived preparedness to identify youth at risk and respond to them confidently and competently.
- Positively affect participants' belief in the usefulness of mental health care and their sense of responsibility to respond to youth they perceive to be at risk for suicide.
- Reduce stigma perceived by adult and youth participants.
- Increase the likelihood that youth will seek assistance from adults if they recognize another young person as needing help.

## **METHOD**

The project targeted two rural communities in different parts of a state in the Northeast. Community A had a population of 9,674 of which 12.5% were aged 15–24 years, while Community B consisted of two adjacent towns with a combined population of 13,226 of which 11% were aged 15–24 years (U.S. Census Bureau, 2000). Program staff selected the two intervention communities through an application process that considered the strength of the local community coalition, the coalition's motivation to address the issues of youth suicide, and the communities' recent histories with youth suicides. Staff from NAMI NH implemented the program in collaboration with the local community coalitions, which acted as liaisons with community stakeholders to arrange trainings and help recruit participants.

### *Participants*

Three hundred adults in Community A and 348 adults in Community B participated in the training and completed the pre and posttest questionnaires for the evaluation. Participants in both communities included police officers, first responders, primary care providers, educators, guidance counselors, social service workers, mental health care providers, and other individuals. Two hundred and four high school students participated in Connect youth trainings and also completed pre and posttest questionnaires for the evaluation (58 in Community A and 146 in Community B).

### *Instruments and Procedure*

Evaluations were conducted using instruments designed specifically to measure the changes in knowledge, attitudes, and beliefs that were expected to occur as the result of the Connect training sessions. The University of New Hampshire's Institutional Review Board for the Protection of Human Subjects in Research approved the research

protocol, the consent process, and the instruments. Adults completed an informed consent document and the pretest questionnaire at the beginning of the 3-hour community training sessions. Youth participants provided assent at the beginning of their training after their parent or guardian had completed and returned an active informed consent document. Adults and youth completed their post-test questionnaires at the end of their training sessions.

The evaluation instruments included two sections with structured questions to assess knowledge, attitudes, and beliefs, and a third section with open-ended questions. The adult version of the questionnaire included six items that tapped knowledge about youth suicide and its prevention, eleven attitude and belief items, and two questions about experience with youth at risk for suicide. Youth participants' questionnaires were modeled on the adult survey instruments, with the questions modified to reflect the content of the peer training. Thus, the youth version of the instrument included seven knowledge items, nine attitude and belief items, and two questions about their experience helping peers who might be at risk for self-injury. Youth participants' open-ended questions asked: (1) how they would respond if someone revealed she/he was thinking about hurting him or herself, and (2) what their community could do to reduce the likelihood that young people might hurt themselves or attempt suicide.

Participants responded to knowledge items by circling *True*, *False* or *Unsure*. Pre and posttest knowledge scores were calculated based on percentage correct with a possible range of 0% to 100%. Participants indicated how much they agreed with each of the attitude and belief items by circling a percentage from 0%, signifying *Totally Disagree*, to 100%, indicating *Totally Agree*.

Embedded within both the adult and youth questionnaires was a 5-item stigma measure that tapped attitudes and beliefs regarding stigma related to youth suicide prevention and seeking mental health care. We developed this measure in a previous study

using data from 294 participants who provided responses to 12 items that either were adapted from other instruments or reflected information in the Connect trainings. Using principal components analysis, we reduced the original measure to the 5-item version with a Cronbach's alpha coefficient of .78. The Cronbach's alpha for the current study, including both youth and adult participants ( $n = 823$ ) was .74. The Stigma scale had a possible range of 0–50 with higher scores indicating greater levels of stigma.

The adult questionnaire included an embedded Preparedness to Help Scale developed by the authors to assess adult participants' perceived readiness to respond to a youth they thought might be at risk for suicide. The possible range of scores on this measure was 0–50. Higher scores indicated greater belief in their self-efficacy to help youth. The scale had a Cronbach's alpha of .85.

In both the pre and posttests, youth were asked to indicate their agreement with the statement, "I am really not sure I would know what to do if I was faced with someone I thought was thinking about suicide," as an indicator of their preparedness to help others. We also created a 3-item Orientation to Adults Scale with a possible range of 0–30 that measured the likelihood that youth would turn to adults rather than friends if they were concerned about a peer. A higher score indicated greater likelihood that they would seek the assistance of an adult. This scale was developed originally for the pilot project ( $n = 131$ ) and had a Cronbach's alpha coefficient of .74; however, the scale's Cronbach's alpha dropped to .65 in the current study.

Both adult and youth participants' sense of responsibility was measured by agreement with the item, "If I became aware that a young person was thinking about, threatening, or had attempted suicide, I would feel I had a responsibility to do something to help." Usefulness of mental health care was measured by agreement with the item, "Mental health care is useful for youth who might be thinking about, threatening, or who had attempted suicide."

Statistical analyses were conducted using SPSS 17. Paired samples *t* tests and repeated measures multiple analysis of variance (MANOVA) were used to compare pre and posttest data for adults and youth separately. Cohen's *d* and partial Eta squared were used to estimate effect size. Because preliminary analyses indicated no significant differences between the participants in the two communities, data from the two communities were combined for the overall analyses. Responses to open-ended items were content analyzed to determine dominant themes.

## RESULTS

Thirty-eight percent of the adult participants reported that they had responded to a youth suicide or an attempt or threat prior to participating in the Connect trainings. Adult participants were asked to estimate the number of youth aged 12–24 years that they had spoken with in the prior 3 months about getting assistance for problems that might be bothering them. Among those who had

spoken with any youth about getting assistance ( $n = 335$ ), the mean number of youth with whom they had spoken was 6.09 ( $SD = 8.76$ ), with a range of 1–75.

Fifty-two percent of the youth participants reported that they had tried in the past to help a friend or someone else they thought might hurt him- or herself. Among those who had ever tried to help another young person ( $n = 105$ ), the mean number of youth they had tried to help in the last 3 months was 1.98 ( $SD = 1.34$ ), with a range of 1–7.

### *General Knowledge About Youth Suicide*

Our hypothesis that participants would demonstrate an increase in correct knowledge about youth suicide from pre to posttraining was supported for both adults and youths. There was a significant increase in adults' correct knowledge about youth suicide from pretraining ( $M = 51.50\%$ ,  $SD = 21.44\%$ ) to posttraining ( $M = 86.80\%$ ,  $SD = 14.52\%$ ),  $t(625) = -37.80$ ,  $p < .001$ ,  $d = 1.93$ . Using Cohen's categories of magnitude (Grissom & Kim, 2005), this indicates a

**TABLE 1**  
*General Knowledge Items for Adult Participants (N = 648)*

	Correct	Incorrect	Unsure
Suicide is the second leading cause of death for NH youth aged 15–24 years			
Pre	358 (55)	84 (13)	204 (32)
Post	562 (87)	53 (8)	7 (1)
Male adolescents are more likely than female adolescents to attempt suicide			
Pre	240 (37)	258 (40)	149 (23)
Post	375 (58)	245 (38)	4 (<1)
Female adolescents are more likely than male adolescents to die by suicide			
Pre	314 (49)	133 (21)	200 (31)
Post	568 (88)	48 (7)	8 (1)
Firearms are the method most frequently used in youth suicides			
Pre	101 (16)	367 (57)	178 (28)
Post	573 (88)	43 (7)	10 (2)
Youth who attempt suicide frequently communicate their plans in advance			
Pre	423 (65)	115 (18)	106 (16)
Post	591 (91)	25 (4)	9 (1)
If a young person confides in you about thoughts of suicide, you are bound by confidentiality to keep that information private			
Pre	567 (88)	19 (3)	61 (9)
Post	593 (92)	28 (4)	5 (1)

Values within parenthesis are expressed in percentage.

**TABLE 2**  
*General Knowledge for Youth Participants (N = 204)*

	Correct	Incorrect	Unsure
Suicide is the second leading cause of death for NH youth aged 15–24 years			
Pre	120 (59)	31 (15)	53 (26)
Post	172 (84)	31 (15)	1 (<1)
Sometimes kids who are angry and hostile are really depressed			
Pre	167 (82)	19 (9)	18 (9)
Post	199 (98)	2 (1)	3 (1)
If a friend seems to be doing better and promises not to hurt him or herself, you can wait to tell an adult			
Pre	166 (81)	16 (8)	22 (11)
Post	193 (95)	8 (4)	3 (1)
It is not necessary to do something if someone just says they are thinking about hurting themselves			
Pre	192 (94)	6 (3)	6 (3)
Post	193 (95)	8 (4)	3 (1)
Youth who attempt suicide frequently communicate their plans in advance			
Pre	80 (39)	71 (35)	52 (26)
Post	187 (92)	16 (8)	1 (<1)
If a young person confides in you about thoughts of suicide, you are bound by confidentiality to keep that information private			
Pre	165 (81)	15 (7)	24 (12)
Post	191 (94)	9 (4)	4 (2)

Values within parenthesis are expressed in percentage.

very large effect size. The proportions of correct, incorrect, and unsure responses for the general knowledge items used in the adult evaluation instruments are shown in Table 1. A majority of participants responded to the knowledge items correctly at posttest, however, none of the items had a 100% correct response. Moreover, some participants responded correctly to items at pretest but incorrectly at posttest. The change in youth participants' correct knowledge also was significant, increasing from pretraining ( $M = 72.75\%$ ,  $SD = 19.50\%$ ) to posttraining ( $M = 92.66\%$ ,  $SD = 12.11\%$ ),  $t(204) = -14.36$ ,  $p < .001$ ,  $d = 1.23$ , a very large effect size. The changes in correct, incorrect, and unsure responses for the general knowledge items used in the youth version of the evaluation instruments are shown in Table 2.

#### *Beliefs and Attitudes*

Multivariate analyses indicated that there were significant changes in participants' beliefs and attitudes from pre to post-

test for both the adults and students. Among adults, there were significant multivariate effects for the main effect of time. The difference in the linear combination of the three dependent variables—preparedness to help, usefulness of mental health care, and responsibility to help—from pre to posttest was significant,  $F(3, 564) = 512.32$ ,  $p < .001$ , partial Eta squared = .73. Follow-up analyses of variance (ANOVAs) revealed that there was a significant change in participants' preparedness to help,  $F(1, 566) = 1448.53$ ,  $p < .001$ , partial Eta squared = .72. Average scores on the Preparedness to Help Scale increased from  $M = 24.83\%$  ( $SD = 11.69\%$ ) prior to the training to  $M = 42.79\%$  ( $SD = 6.62\%$ ) upon completion of training. Even though the adult participants' belief in the usefulness of mental health care was quite high at pretest ( $M = 87.06\%$ ,  $SD = 17.80\%$ ), there was a statistically significant increase in agreement with this item after training ( $M = 94.74\%$ ,  $SD = 11.57\%$ ),  $F(1, 566) = 95.71$ ,  $p < .001$ , partial Eta squared = .15. There also was a significant change in adults' sense of responsibility for helping youth who

might be at risk for suicide,  $F(1, 566) = 5.38$ ,  $p < .05$ , partial Eta squared = .009. Participants' belief that they would feel responsible to respond was very high at both pretraining ( $M = 94.08\%$ ,  $SD = 15.7\%$ ) and posttraining ( $M = 95.8\%$ ,  $SD = 14.01\%$ ), which accounts for the very small partial Eta square. There were no significant main effects for community and no significant community by time interactions.

Among youth, there were significant multivariate effects for the main effects of time,  $F(4, 197) = 52.85$ ,  $p < .001$ , partial Eta squared = .52, and community  $F(4, 197) = 2.39$ ,  $p < .05$ , partial Eta squared = .05, but not for the interaction between time and community. Follow-up ANOVAs indicated a significant change from pre to posttest for all four dependent variables—preparedness to help, usefulness of mental health care, responsibility to help, and orientation to adults. Youth participants' sense that they would know what to do if they were faced with someone they thought was considering suicide increased from pretest ( $M = 51.83\%$ ,  $SD = 31.51\%$ ) to posttest ( $M = 82.52\%$ ,  $SD = 25.92\%$ ),  $F(1, 200) = 113.28$ ,  $p < .001$ , partial Eta squared = .36. Youths' agreement that mental health care is useful increased significantly from pretest ( $M = 77.70\%$ ,  $SD = 24.18\%$ ) to posttest ( $M = 88.91\%$ ,  $SD = 19.06\%$ ),  $F(1, 200) = 42.09$ ,  $p < .001$ , partial Eta squared = .17, and there also was a significant increase in youth participants' feeling of responsibility to respond [pretest:  $M = 85.15\%$ ,  $SD = 20.83\%$  vs. posttest:  $M = 90.40\%$ ,  $SD = 18.84\%$ ,  $F(1, 200) = 14.10$ ,  $p < .001$ , partial Eta squared = .07]. Our expectation that training would increase the likelihood of youth participants seeking assistance from an adult if she or he was concerned about a peer also was supported: orientation toward adults scores increased for the youth participants from pretest ( $M = 24.52$ ,  $SD = 4.97$ ) to posttest ( $M = 27.03$ ,  $SD = 3.93$ ),  $F(1, 200) = 62.23$ ,  $p < .001$ , partial Eta squared = .24. There was a difference between the two communities only in regard to preparedness to help,  $F(1, 200) = 6.50$ ,  $p < .01$ , partial Eta squared = .03.

The Connect trainings decreased participants' Stigma scores. Among youth, the scores significantly decreased from pretest ( $M = 13.95$ ,  $SD = 9.05$ ) to posttest ( $M = 9.77$ ,  $SD = 9.83$ ),  $t(199) = 7.29$ ,  $p < .001$ ,  $d = .44$ , a moderate effect size. Among adults, while the Stigma scores decreased from pretest ( $M = 5.85$ ,  $SD = 6.80$ ) to posttest ( $M = 4.14$ ,  $SD = 6.3$ ),  $t(545) = 5.81$ ,  $p < .001$ ,  $d = .26$ , only a small effect size was seen.

#### *Seeking Adult Assistance*

The open-ended question asking youth participants what they would do if they were concerned that a peer might hurt him- or herself was coded to determine whether participants spontaneously would tell an adult rather than try to deal with the situation on their own. The proportion of youth participants who mentioned seeking adult assistance increased significantly from 40% pretraining to 56% posttraining,  $\chi^2(1) = 22.74$ ,  $p < .001$ . Who the youth said they would turn to for help, before and after the training, is indicated in Table 3. There was an increase in the percentage of students who would talk to a school staff member, possibly because they learned through the program that school staff would know how to respond.

Youth participants provided concrete suggestions as to what the community could do to reduce the likelihood that young people might hurt themselves or attempt suicide. Responses related to education and training were the most frequent (46%), and

**TABLE 3**  
*Who Youth Would Tell (N = 204)*

	Pretest (%)	Posttest (%)
No one	5	2
Adult, unspecified	20	38
Guidance	29	39
Teacher	17	20
Any school staff	41	51
Own parents	43	39
Peer's parents	15	12
Peer or own parent	52	46
Friends	9	6

included recommendations such as: “teach young people about it, the warning signs, and what to do to help a friend,” “bring programs like this into the schools, as early as middle [school],” and “educate as many people as possible about the dangers and risks.” The second most frequent group of responses (21%) suggested the importance of activities and recreational opportunities: “provide more after school activities,” “have more activities to keep kids busy and not isolated,” and “they could do less for tourism and more for the youth of the community.” Other responses revealed youth participants’ awareness of the importance of limiting access to lethal means: “hide weapons at home under lock and key” and “reduce the availability of weapons.” Youth participants also recognized the connections between peer relationships and suicidal behavior, offering the following advice: “try to eliminate bullying,” and “care more about what’s going on in other people’s lives.” Participants also stressed the importance of communication and helping others: “all become trained and retain positive communication and resources,” “inform people ... let them know it’s okay to talk about suicide,” and “talk to them and get them mental help if they need it.”

## DISCUSSION

NAMI NH’s Connect program significantly increased correct knowledge about youth suicide and enhanced attitudes about youth suicide prevention and the usefulness of mental health care. These findings confirm and extend the outcomes of the pilot implementation (Baber & Bean, 2009), demonstrating the program’s ability to significantly change participants’ readiness to respond to youth who may be at risk for suicide. The consistency of the findings across communities indicates that this program is effective with a broad range of adults and with high school students.

The number of people in the sample who have tried to help youth at risk indicates the utility of the ecological approach—training students as well as adults in a variety of

professions and positions in the community. Almost two fifths of the adults reported responding to a youth suicide event, attempt, or threat prior to the training, while more than half the student participants said that they had tried to help a friend or other young person that they believed might hurt him- or herself. This might suggest giving priority to training youth over adults. However, as a primary goal for Connect peer training is to increase the likelihood that youth will immediately seek adult assistance if they are concerned about another young person, the adults to whom they may turn need to be knowledgeable and prepared to respond appropriately and effectively.

The youth in this study identified parents and school staff most frequently as the adults they would turn to for assistance. This finding underscores the importance of providing critical information, training, and resources about youth suicide to parents and school personnel to ensure that the youth in need will receive the necessary care and that the student seeking assistance will continue to see adults as dependable resources. One approach in addition to actively training parents using the Connect program could be to include information about youth suicide prevention with the consent form parents are required to sign for their child to participate in the peer training.

Connect training not only increases knowledge about youth suicide prevention, it changes participants’ attitudes. Both adult and student participants indicated that they felt more prepared to respond to a young person about whom they were concerned. For both groups, there were increases in their sense of responsibility to help and their belief in the usefulness of mental health care, and decreases in Stigma scores. For student participants, there was an increase in the likelihood that they would turn to an adult for assistance if they thought a peer was at risk.

The increase in adults’ preparedness to respond scores indicates greater confidence, sense of competence, and belief that they know about available resources. Prior to training, agreement with the statement, “I

believe I have adequate knowledge and training to help a young person who might be thinking about, threatening, or who had attempted suicide,” averaged 39%, while after training, it averaged 84%. Agreement with the statement, “I have a good understanding of the resources in my community for assisting a young person who might be thinking about, threatening, or had attempted suicide,” increased from 45% to 88% as the result of the training. While knowledge is necessary, it is not sufficient to help a young person at risk; one must feel confident that this knowledge can be put into action. Average agreement with the statement, “I would feel **confident** about my ability to effectively respond to threats or an attempt of suicide by a young person,” increased from 55% to 86% from pre to posttest, indicating a significant increase in self-confidence.

Participants’ agreement that they had a responsibility to help a young person at risk for suicide was very high even before training, especially for the adults. Even so, there were statistically significant increases in sense of responsibility for both adults and students. These high values raise the question of the potential influence of social desirability. In the interest of minimizing the time taken away from training, we did not include a social desirability measure in this study. However, we have used the item, “If I became aware that a young person was thinking about, threatening, or had attempted suicide, I would feel I had a responsibility to do something to help,” with other groups of adults with similar results, so we have no reason to believe that the information about participants’ sense of responsibility to help is invalid. In fact, about 40% of the adults and half of the students in this study had already tried to assist a young person, even with their relatively low sense of competence and confidence that existed pretraining. Follow-up analyses indicated that those adults who had assisted someone they thought might be at risk for suicide prior to the training had a significantly higher sense of self-efficacy—belief in their knowledge, understanding of resources, and confidence in their ability to

act—pretraining than those who had never helped anyone,  $F(3, 604) = 15.93, p < .001$ . Although the data do not distinguish whether participants felt confident and knowledgeable before they helped someone or after successfully doing so, we expect that those who feel more prepared to act are more likely to do so given their high sense of responsibility. Therefore, we expect that those who helped youth before training will be even more likely to do so in the future, and that those who had not done so and reported now being more knowledgeable and confident will be likely to help youth in the future.

The high endorsement of the usefulness of mental health care by both adults and students was surprising. This variable also might be influenced by social desirability; however, the moderate negative correlation between belief in the usefulness of mental health care and Stigma scores before the training ( $-.33$ ) increased to  $-.44$  after the training, indicating that these variables are related. Reducing stigma may result in greater belief in the usefulness of mental health care.

A number of the benefits realized from the Connect trainings went beyond a change in knowledge and attitudes. The trainings provided a common language and understanding for professionals in the community that facilitates important conversations about suicide and interventions for individual youth. Connect not only produced changes in individual participants, it served as the impetus for policy and procedural changes in community programs and agencies that will have long-term effects and increase the likelihood of sustainability. Finally, although the Connect program is designed to be a youth suicide prevention project, the community strengthening benefits of the project are expected to enhance the ability of community participants to collectively develop indigenous, integrated, and effective community responses to other public health issues.

Connect works with existing community coalitions to establish local processes that enable a broad array of people and organizations to work together, identify and understand the nature of community health

problems, and use their complementary strengths and capabilities to solve those problems. Coordinated protocols allow providers to share common language, understand how professionals in different disciplines will respond, and use prevention strategies with demonstrated effectiveness. However, to know that youth themselves actually benefit

from a program such as Connect, it is necessary to show that once a young person is identified as being at risk, she or he is referred for mental health care and actually receives it. The next step in documenting this level of effectiveness of the Connect Project will be to develop a tracking system to provide this important information.

## REFERENCES

- ALBARRACÍN, D., JOHNSON, B. T., FISHBEIN, M., & MUELLERLEILE, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*, *127*, 142–161.
- BABER, K., & BEAN, G. (2009). Frameworks: A community-based approach to preventing youth suicide. *Journal of Community Psychology*, *37*, 684–696.
- BOGENSCHNEIDER, K. (1996). An ecological risk/protective theory for building prevention programs, policies, and community capacity to support youth. *Family Relations*, *45*, 127–138.
- BOLTON OETZEL, K., & SHERER, D. G. (2003). Therapeutic engagement with adolescents in psychotherapy. *Psychotherapy Theory, Research, Practice, Training*, *40*, 215–225.
- BRONFENBRENNER, U. (1979). Toward an experimental ecology of human development. *American Psychologist*, *32*, 513–531.
- COLQUITT, J. A., LEPINE, J. A., & NOE, R. (2000). Toward an integrative theory of training motivation: A meta-analytic path analysis of 20 years of research. *Journal of Applied Psychology*, *85*, 678–707.
- COMMISSION ON YOUTH SUICIDE PREVENTION. (2005). Defining youth suicide. In D. L. Evans, E. B. Foa, R. E. Gur, H. Hendin, C. P. O'Brien, M. E. P. Seligman, et al. (Eds.), *Treating and preventing adolescent mental health disorders: What we know and what we don't know* (pp. 433–443). New York: Oxford.
- CORRIGAN, P. (2004). How stigma interferes with mental health care. *American Psychologist*, *59*, 614–625.
- GOULD, M. S., GREENBERG, T., VELTING, D. M., & SHAFFER, D. (2006). Youth suicide: A review. *The Prevention Researcher*, *13*, 3–7.
- GRISSOM, R. J., & KIM, J. J. (2005). *Effect sizes for research*. Mahwah, NJ: Lawrence Erlbaum.
- GUTIERREZ, P. M. (2006). Integratively assessing risk and protective factors for adolescent suicide. *Suicide and Life-Threatening Behavior*, *36*, 129–135.
- IZZO, C., CONNELL, J., GAMBONE, M., & BRADSHAW, C. (2004). Understanding and improving youth development initiatives through evaluation. In S. Hamilton & M. Hamilton (Eds.), *The youth development handbook* (pp. 301–326). Thousand Oaks, CA: Sage.
- KALAFAT, J. (2003). School approaches to youth suicide prevention. *American Behavioral Scientist*, *46*, 1211–1223.
- MANN, J., APTER, A., BERTOLOTE, J., BEA-UTRAIS, A., CURRIER, D., HAAS, A., et al. (2005). Suicide prevention strategies: A systematic review. *Journal of the American Medical Association*, *294*, 2064–2074.
- OORDT, M. S., JOBES, D. A., FONSESCA, V. P., & SCHMIDT, S. M. (2009). Training mental health professionals to assess and manage suicidal behavior: Can provider confidence and practice behaviors be altered? *Suicide and Life-Threatening Behaviors*, *39*, 21–32.
- PENN, D. L., JUDGE, A., JAMIESON, J., GRACZYNSKI, J., HENNESSY, M., & ROMER, D. (2005). Stigma. In D. L. Evans, E. B. Foa, R. E. Gur, H. Hendin, C. P. O'Brien, M. E. P. Seligman, et al. (Eds.), *Treating and preventing adolescent mental health disorders: What we know and what we don't know* (pp. 531–544). New York: Oxford University Press.
- THOMPSON, E. A., EGGERT, L. L., RANDALL, B. P., & PIKE, K. C. (2001). Evaluation of indicated suicide risk prevention approaches for potential high school dropouts. *American Journal of Public Health*, *91*, 742–752.
- U.S. CENSUS BUREAU. (2000). *American fact finder*. Retrieved February 23, 2006, from [http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en)
- U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. (2001). *National strategy for suicide prevention: Goals and objectives for action*. Rockville, MD: Author.
- WANDERSMAN, A., & FLORIN, P. (2003). Community interventions and effective prevention. *American Psychologist*, *58*, 441–448.

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