

**Changing Student Attitudes About Mental Health Conditions:
NAMI Ending the Silence**

Otto Wahl, Jennifer Rothman, Teri Brister, and Corrie Thompson

©**American Psychological Association, 2018.** This paper is not the copy of record and may not exactly replicate the authoritative document published in the APA journal. Please do not copy or cite without author's permission. The final article is available, upon publication, at:
<http://dx.doi.org/10.1037/sah0000135>

Substantial research has established that the public holds inaccurate negative beliefs about those with mental health conditions (e.g., Farina, 1982; Link, Phelan, Bresnahan, Stueve, & Pescosolido., 1999; Pescosolido et al., 2010; Rabkin, 1974). The pervasive negative public beliefs about mental health conditions, in turn, create an environment that impedes both treatment seeking and recovery (Corrigan, 2004; Link, 2006; Thornicroft, 2006; Thornicroft, Brohan, Rose, Sartorius, & Leese, 2009; Wahl, 1999; Wahl, 2012).

It is likely that these negative beliefs and attitudes are acquired gradually over a lifetime and that their roots are established in childhood (Chandra & Minkovitz, 2007; Corrigan et al., 2005; Corrigan & Watson, 2007; Shah, 2004; Wahl, 2002; Wahl et al., 2012). Children who acquire negative stereotypes about mental health conditions become adults with negative perceptions that are difficult to change. Moreover, negative attitudes about mental health conditions among youth also directly affect the millions of youth who experience mental health problems. For psychiatrically labeled children and adolescents acutely attuned to the judgments of their peers, misunderstandings and negative attitudes about mental health conditions among those peers may be particularly painful. Ostracism, rejection, teasing, and damage to self-esteem, as well as reluctance to seek or accept mental health treatment, are among the possible consequences (Crocker & Major, 1989; Milch & McAninch, 1992).

As a result of observations such as those above, efforts are being made to teach children about mental health conditions and to encourage both help-seeking and acceptance of those who manifest such conditions. It is hoped that, by educating children about mental illnesses before (or as) their conceptions about mental health problems are formed, we may be able to prevent the formation of negative attitudes and foster more accurate understanding and acceptance of people with psychiatric disorders. Research evaluating these educational efforts, usually carried out in schools,

has shown that educational programs can be successful in moderating students' negative beliefs and increasing their understanding and acceptance of mental health conditions.

Rickwood, Cavanaugh, Curtis, and Sakrouge (2004), for example, reported on an evaluation of a Mental Illness Education (MIE) program used in Australia. The program involved a single 50-60-minute session for high school students that involved presentations by people who had personally experienced mental illnesses. Rickwood et al. compared the responses of 309 students who received the MIE program with the responses of 148 students who had not had the program presentation. They reported a strong impact of the program on knowledge of mental illness and a moderate reduction of stigma responses, but only a weak impact on help-seeking intentions.

In the United States, Watson, Otey, Westbrook, Gardner, Lamb, Corrigan, & Fenton (2004) looked at the effectiveness of a mental health education curriculum developed by the NIH Office of Education as a supplement for middle school science classes. The Science of Mental Illness curriculum combined information about scientific discoveries with actual case examples and interactive activities to help students better understand mental illnesses and their causes and treatments. A total of 1566 students from middle schools in 16 states received the five designed lessons from their teachers and completed pre and post measures of knowledge and attitudes about mental illnesses. The researchers reported significant improvements in knowledge and attitudes about mental illnesses, particularly in the perception that a person with mental illness may be dangerous.

Wahl, Susin, Lax, and Zatina (2011) also evaluated a curriculum designed for delivery by teachers, the Breaking the Silence (BTS) program created by parents and teachers from NAMI-Queens/Nassau. The program involved standardized modules delivered over the course of 2-3 class periods and had been in use in schools for over 10 years. Wahl et al.'s study focused on

middle school students and included assessment immediately before the program, immediately after the program, and six weeks following the program. Results showed significant and sustained improvements in knowledge and attitudes for students receiving the program and little change for students not receiving the program. The authors noted, however, that knowledge showed greater change than attitudes, especially social distance preferences.

Painter, Phelan, DuPont-Reyes, Barkin, Villatoro, & Link, B. G. (2017) expanded research on school mental health programs to a younger age group—sixth grade students—and used a wider variety of assessment tools, including vignette-based tools. They also compared the education-based curriculum with a contact intervention, combined curriculum and contact intervention, and no intervention control. All interventions led to knowledge and attitude improvements while control conditions did not, with the contact intervention showing more positive outcomes on the vignette-based measures.

Many of these efforts, however, involve programs or presentations that, however effective, are not widely used or disseminated. A youth education program that is being widely utilized is NAMI (National Alliance on Mental Illness) Ending the Silence (ETS), estimated to have been provided to over 160,000 students in 27 different states since its introduction in 2014 as a NAMI signature program. NAMI is a national grassroots organization, with hundreds of state and local affiliate chapters, that is, according to its website, “dedicated to building better lives for the millions of Americans affected by mental illness” by providing support, education, and advocacy.

NAMI ETS is a standardized presentation designed for middle school- and high school-age youth that is being used by NAMI and its affiliates. The stated goal of NAMI ETS is “to create a generation of students who are well-positioned to end the silence and stigma surrounding

mental illness.” It consists of a 50-minute presentation with multiple components, including a standardized PowerPoint presentation, that provides facts about youth mental illness, describes warning signs of mental health conditions, discusses what one should do in response to such warning signs, encourages acceptance of mental health conditions, and urges action to reduce stigma. The NAMI ETS presentation also includes brief videos made by youth to encourage acceptance and support for peers with mental illness and a presentation by a young adult who discusses his/her own personal experiences with a mental health condition. Thus, NAMI ETS contains both education and contact components, consistent with research that shows that these interventions, particularly contact, are effective strategies for reducing stigmatizing beliefs (Corrigan, Morris, Michaels, Rafacz, & Rusch, 2012; Watson & Corrigan, 2005).

All presenters for this program undergo standardized training and receive a detailed training manual of the presentation goals and procedures to be followed. The training manual includes key messages to be delivered. These messages include: Mental illness is a medical illness like any other physical illness. There are specific, observable early warning signs of mental health conditions. If you notice these warning signs in yourself or a friend, it is important to tell a trusted adult as soon as possible. Recovery is possible. To date, more than 300 individuals have completed NAMI ETS presenter training.

NAMI ETS is a relatively recent introduction to NAMI’s standardized public education programs, but, as noted, it is already widely used. It is likely that it will continue to be used and that the number of students exposed to this program will grow given NAMI’s national reach and its commitment to improved understanding of mental health conditions. The importance of youth education and the growing use of NAMI ETS, then, makes it critical to determine whether or not the program accomplishes its goals. The current research addresses that issue. It is hypothesized

that students given the NAMI ETS presentation will show improvements in knowledge and attitudes and help-seeking intentions than students who do not receive the presentation.

Method

Participants

High school students were chosen as participants for this study, as the NAMI ETS presentation was seen as best suited for this population. Participants were primarily ninth and tenth grade students recruited from schools in five different areas of the United States—Arizona, California, Florida, Illinois, and Texas. Recruitment began through identification of NAMI affiliates that had expressed interest in participating in the research and that were judged to have the resources to carry out the data collection. Each of the five NAMI affiliates recruited two high schools in its area to participate in the study; thus, the research was carried out in ten different schools.

The participating schools were socioeconomically, ethnically, and racially, as well as geographically, diverse. Mean school enrollment was 1940, but there was a wide range of size of the schools, from 299 students to 2653. Some schools were predominantly Caucasian (72.9%) while others had Hispanic students as a majority (52%). African-American enrollment ranged from one percent to 45 percent. For several of the schools, more than half the students were eligible for free or reduced cost lunch; for others, fewer than 15% of the students qualified.

The research was reviewed and approved by the University of Hartford Human Subjects Committee. Permissions from school principals and, where required, school research review boards were obtained for each site. There was additional review and approval required and obtained in one of the five sites where the research was conducted.

Procedure

Six classes at each of the 10 participating schools were identified for participation in the research, a total of 60 classes. Three classes at each school (the ETS group) completed the research questionnaires and received the NAMI ETS presentation. The main measure of knowledge and attitudes was administered the day before the NAMI ETS presentation, immediately after the presentation, and approximately 4-6 weeks after the presentation. The other three classes (the Non-ETS group) completed the research questionnaire on the same schedule as the ETS classes but did not receive the NAMI ETS presentation. Students in both groups filled out a demographic questionnaire with the first administration of the main measure. Classes were assigned to ETS or Non-ETS conditions by schools and teachers, based on the needs and limitations of their schedules.

Data collection was carried out by volunteers from the NAMI affiliates represented. Those volunteers participated in a webinar training on procedures for the study, received a written summary of Frequently Asked Questions related to the procedures, and were provided with written directions for each administration of the questionnaire. One person for each NAMI affiliate carried out all the data collection; in addition, that person attended all NAMI ETS presentations and completed a Fidelity Assessment checklist.

Measures

The main research measure was a brief paper-and-pencil questionnaire developed to assess attitudes and knowledge that might be affected by a NAMI ETS presentation. Selection of items was based on a lengthy process during which the first author reviewed NAMI ETS presentation materials, including the NAMI ETS presenter training manual, and attended a presenter training to identify key messages and goals of the NAMI ETS presentation. The author also reviewed instruments and items used in other research to study stigma and stigma reduction

(e.g., Kobau, Dilorio, Chapman, Delvecchio, & SAMHSA/CDC Mental Illness Stigma Panel Members, 2010; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999; Link, Yang, Phelan, & Collins, 2004; Martin, Pescosolido, & Tuch, 2000; Wahl, Susin, Lax, & Zatina, 2011). Feedback from NAMI partners was obtained for initial drafts of the questionnaire and modified according to input received.

It was necessary to keep the questionnaire brief so that it could be added to the NAMI ETS presentation within a single 50-60-minute class period. The final instrument, therefore, contained just 12 items. Three of the items were intended to assess specific knowledge gained from the facts presented in NAMI ETS about mental health conditions. Three items were related to common attitudes or misconceptions about mental illness (e.g., potential for violence). As desire for social distance is a common and important component of stigma, three items addressed this element. Finally, since one of the goals of the NAMI ETS presentation is to encourage help-seeking, three items involved attitudes about seeking help or encouraging help-seeking for mental health conditions.

Items were presented as statements, with respondents asked to indicate their degree of agreement or disagreement with each, using a five-point Likert-type scale from “strongly disagree” to “strongly agree.” Some of the items taken from previous studies with adults were modified to be more relevant to a student population, such as asking about comfort dating (rather than marrying) a person with a mental health condition. In addition, a Microsoft Word assessment of reading level of items and instructions was obtained to insure that the items could be easily read and understood by the target high school population; this assessment showed that items had a seventh grade reading level. To reduce potential response bias, items were presented in randomized order, with six of the items reverse scored so that correct knowledge or positive

attitudes would be reflected by disagreement with the statement. The 12 items used are shown in Table 2.

Each item on the main measure was scored 1-5, corresponding to agreement ratings on the Likert-type scale, with items scored so that higher scores represented more accurate knowledge and/or more positive attitudes. As noted above, six items were reversed scored so that strong disagreement yielded the highest score and strong agreement earned the lowest. The scores on the 12 individual items were summed to yield an overall score with a possible range of 12-60, again with higher scores indicating more accurate knowledge and/or more positive attitudes. When one or two item responses were missing on an otherwise completed questionnaire, the average of the remaining items were used as the scores for the missing ratings.

Test-retest reliability of the study questionnaire was assessed by correlation of pre and post scores for the Non-ETS group, which completed the questionnaire two days in a row with no ETS presentation. Results indicated high reliability ($r = .801, p < .01$). We also examined internal consistency with the combined ETS and Non-ETS sample for the first (Pre) administration. Cronbach's alpha was .619, suggesting moderate internal consistency.

Two additional instruments were developed and used. A brief demographic questionnaire asked for information about gender, age, and racial/ethnic background. To assess whether the NAMI ETS presentation was uniformly delivered at each research site, a Fidelity Assessment measure was also developed. It consisted of a checklist of 11 essential components (e.g., "Both a lead presenter and a young adult presenter were present") and 12 key messages of the NAMI ETS presentation (e.g., "There are specific, observable early warning signs of mental health conditions"), as specified in the training manual and other materials describing NAMI ETS. In only one of the 30 classes receiving the NAMI ETS presentation was an element not

provided. For that class, one of the videos was not shown; all other elements were included. Thus, 100% fidelity was achieved in 29 of the 30 ETS classes and 96% in the one remaining class. It appears, then, that the NAMI ETS presentations followed the standardized format and contained the key elements required.

Data analysis

Not all students responded to all demographic questions. Table 1 shows the characteristics of the students who provided responses. As expected from the selected 9th and 10th grade sample, the vast majority of responding students (88%) were ages 13-15; mean age was 14.7 years, with a range of 13-18. Slightly more than half of the responding students (55%) identified themselves as female, while 42% identified as male. Student responses to demographic questions indicated that the respondents were reasonably diverse. Approximately half (51%) chose White/Caucasian as their race. Sixteen percent indicated they were Black or African-American, seven percent Asian, and eleven percent multiracial. In addition, 35 percent indicated they were Hispanic or Latino. Fourteen percent of the responding students chose “Other” for race. The most common “Other” categories reported by respondents for race were Hispanic¹ (36 students), Mexican¹ (24 students), White/Hispanic¹ (12), and Asian/White (11).

As can be seen in Table 1, ETS and Non-ETS samples were similar in their characteristics. Mean age was 14.7 for each group. Both groups had more females than males (59% to 40% for Non-ETS classes and 55% to 44% for ETS classes) and had similar representation of students identifying as Hispanic/Latino (36% for Non-ETS classes and 35% for ETS classes). Racial identification was also similar for the two groups: The Non-ETS sample was 52% Caucasian, 16% African-American, and 7% Asian; for the ETS sample, the figures

were 50% Caucasian, 15% African-American, and 8% Asian. Thus, there seemed little difference in the two samples with respect to demographic characteristics.

Impact of the NAMI ETS presentation was evaluated primarily by means of a repeated measures analysis of variance of overall scores and individual item scores. In terms of this analysis, it is hypothesized that there will be significant interaction effects between time of questionnaire administration (pre-, post-, and follow-up) and intervention group, with the ETS group showing greater change than the Non-ETS group.

Results

Only students who completed all necessary consent forms and questionnaires at all three sessions (pre, post, and follow-up) were included for data analysis. Questionnaire completion was defined as having omitted two or fewer items on the main study measure and as having used more than one rating point on the scale (e.g., not rating every item as “unsure”). Nine hundred thirty-two high school students completed the main measure for all three evaluation sessions, 530 students from classes receiving the NAMI ETS presentation (ETS classes) and 402 students from classes that did not receive the presentation (Non-ETS classes).

These numbers come from a larger sample of students who participated in some ways but did not complete all necessary materials for inclusion. Altogether, 547 students who completed some portion of the protocol were not included (265 from ETS classes and 282 from Non-ETS classes). The most common reason for non-inclusion was failure to complete measures at all three assessment points; this was true for 435 students. Other reasons for non-inclusion included problems with documentation of consent (38), rating all items the same (32), and omitting more than two items on any administration of the research measure (15). An additional 27 students did not meet inclusion criteria in multiple ways.

It is noteworthy that students whose data were not used in the study for the reasons indicated above had demographic characteristics similar to the students who completed all the necessary components. Fifty-one percent were female (vs. 55% of those who completed all components), 37% were Hispanic (vs. 35%), 44% were Caucasian (vs. 51%), 9% were African-American (vs. 16%), and 7% were Asian (vs. 7%). In addition, exclusions were relatively evenly divided between Control classes (282) and ETS classes (265).

Change Following NAMI ETS Presentation

Mean scores for overall score and for individual items for each group (NAMI ETS and Non-ETS) at each administration (Pre, Post, and Follow-up) are shown in Table 2. As noted above, scores were analyzed using a repeated measures Analysis of Variance to determine change related to the NAMI ETS presentation.

The main statistic of interest is the significant interaction effect ($p < .01$) between administration times (Pre, Post, and Follow-up) and presentation condition (ETS or Non-ETS). The group with the NAMI ETS presentation showed changes; the Non-ETS group did not. There was a small, but statistically significant difference between NAMI ETS and Non-ETS overall scores at the pre administration, with NAMI ETS students showing more positive attitudes and greater knowledge than Non-ETS students even before they received NAMI ETS information. As is apparent in Table 2, however, Non-ETS group scores remained essentially the same across the three administrations of the research measure ($M = 41.93, 41.79, \text{ and } 41.83$ for Pre, Post, and Follow-up, respectively) while there was a significant increase in overall score at the second administration for the ETS group (from 42.72 to 49.06). Calculation of the effect size for the Pre-Post difference yielded a d of 1.30, which falls into Cohen's (1992) classification as a large effect. The mean ETS group score dropped (to 46.52) at Follow-up but still remained

significantly higher than the score for the ETS Pre administration. Effect size was again large ($d = .78$). It appears that the NAMI ETS presentation did improve knowledge and attitudes and that the improvement was sustained (although not fully) over the 4-6-week follow-up period.

Without the NAMI ETS presentation, student knowledge and attitudes remained unchanged.

A similar pattern of results was found with each of the 12 items. As can be seen in Table 2, item scores for Non-ETS classes changed little across the three administrations while increases in item scores occurred consistently for students receiving the NAMI ETS presentation, leading to a significant interaction effect for each of the 12 items. In addition, repeated measures analyses of overall scores were completed for each of the 10 schools individually. All schools showed a similar pattern of scores and a significant interaction effect. Post and Follow-up scores were greater than Pre scores for the ETS students but not the Non-ETS students. The same pattern and interaction effect was found when results for male and female students were examined separately. Similarly, there were similar interaction effects for separate consideration for those self-designating as Hispanic, as White/Caucasian, as Black/African-American, as Asian, and as multiracial.

To get a further idea of what items/ideas were changed most by the NAMI ETS presentation, we examined the individual items in terms of magnitude of immediate Pre to Post change and magnitude of sustained change (Pre vs Follow-up). Table 2 shows the differences between Pre and Post scores and Pre and Follow-up scores, organized according to the magnitude of the Pre-Post improvement among ETS students. The item showing the greatest Pre to Post change ($\Delta M = 1.20$) involved knowing the warning signs of mental health conditions. Prior to the NAMI ETS presentation, this item had the lowest mean score ($M = 2.94$), and became the second highest mean score ($M = 4.14$) after the presentation, thus suggesting that

students gained confidence in their ability to recognize warning signs following exposure to the presentation. The second largest Pre to Post change occurred on the item having to do with knowledge of what to do to help oneself if experiencing a mental health condition. Again, this item yielded one of the lowest scores prior to the NAMI ETS presentation and became one of the higher ones following the presentation, suggesting that students improved greatly in their knowledge of how to help themselves. In addition, these two items also showed the greatest sustained improvement (Follow-up minus Pre scores being .84 and .73).

Smaller change was evident for items having to do with attitudes and acceptance. Scores moved, on average, less than half a scale point from Pre to Post for comfort working with ($\Delta M = .33$) or inviting ($\Delta M = .16$) a student with a mental health condition. Similar smaller change occurred regarding embarrassment at having a mental health condition ($\Delta M = .30$), belief that people with mental health conditions are dangerous ($\Delta M = .31$), and confidence that people with mental health conditions could go to college and get jobs ($\Delta M = .29$). It is important to remember that all of these items were scored in a positive direction even before the NAMI ETS presentation and did change significantly in a positive direction, just not as much as other items. The two items showing least Pre to Post change (involving ability to get jobs and reluctance to invite someone to one's home), however, returned almost to Pre assessment levels by Follow-up.

Discussion and Conclusions

Results indicate that NAMI Ending the Silence is effective in improving knowledge and attitudes of ninth and tenth grade students about mental health conditions. Significant overall change and change in individual items occurred with, but not without, the NAMI ETS presentation. Moreover, there is evidence that this effect is robust. The NAMI ETS presentation involved different schools in different parts of the United States, different size classes, different

presenters, and different personal stories at the different schools. But the same interaction effects occurred for each of the ten schools involved despite those differences; positive change occurred with NAMI ETS but not without it. That consistency may be due to the fact that the core elements remained consistent across schools and classes, as indicated by fidelity assessments. In addition, the NAMI ETS presentation effect appears not to be limited to one particular type of student. The same pattern of change with, but not without, NAMI ETS occurred for males and females and for students with different ethnic/racial backgrounds.

One of the criticisms of previous studies of school-based mental health education efforts has been that follow-up has often been lacking to establish that improvements are not just short-lived gains (Corrigan, Michaels, & Morris, 2015; Mellor, 2014). For the current study, improvements in knowledge, attitudes, and help-seeking intentions were sustained over a four- to six-week period. Although scores dropped at follow-up for NAMI ETS students, they remained significantly improved over their attitudes prior to the NAMI ETS presentation. Gains, then, appear to be not just an immediate response to the NAMI ETS presentation but to be lasting, at least over a moderate period of time.

The study is not without its limitations, of course. One limitation, for example, is that students and classes were not randomly assigned to ETS and Non-ETS conditions. Demographic comparisons show that the two sets of classes were nevertheless very similar. However, it is possible that teachers/school officials selected classes for NAMI ETS presentation that they believed would be more likely to benefit from the presentation. Apparent improvement could have been enhanced by that selection/assignment. We do not believe that this occurred, particularly because of the consistency of results across schools and teachers, but the possibility remains.

The study also did not employ an active control condition, a condition in which students received an alternative presentation, perhaps even an alternative mental health presentation. Results indicate that greater improvements in knowledge and attitudes occur with the ETS presentation compared to a no-intervention group. It remains possible, however, that other kinds of mental health information might have produced similar changes. Future research that includes comparisons with other kinds of programs or presentations would be helpful to determine which are the most effective.

In addition, the research sample was restricted to high school students. It would be desirable to reach students at younger ages and to enhance knowledge and understanding of mental health conditions as early in development as possible. Whether NAMI ETS may have a similar effect with younger populations is unknown. Future research, some of which is already being carried out by the authors, may wish to assess NAMI ETS effectiveness at earlier grade levels.

Another limitation is the number of students from the overall pool of students whose data were not included in the analysis. Although the main reason for exclusion was absence at one of the three assessment sessions, and such absences were expected and unavoidable, the large number of students excluded introduce the possibility of sampling bias, with more reliable school attenders as our participants. It is important to note, however, that there were similar numbers of and reasons for exclusions for ETS and Non-ETS groups and that the demographics of the two groups were likewise similar after the exclusions.

A further methodological limitation is that the research measure involves a very limited number of items, due to the time constraints of school classes. A more detailed set of items would give more information about a wider range of student understanding and attitudes. In

addition, the assessment of knowledge and attitudes, like most evaluation studies, relies on self-report questionnaires. Whether the expressed attitudes are reflected in actual behavior is unknown. Research is needed that includes assessment of student behavior directed toward peers with mental health conditions. Furthermore, while it is promising to see the changes sustained for 4-6 weeks, that is still a relatively brief follow-up period. Whether gains would be sustained over longer periods of time is unknown. It seems likely that, for gains to be sustained, other supporting activities and follow-up activities are needed. One hope is that the NAMI ETS presentation not only changes knowledge and attitudes among its audiences, but also provides a spur for continued thought and discussion about mental health conditions. Future studies may wish to verify whether this occurs and whether NAMI ETS effects last beyond a short period.

One needs to be cautious also about interpretation of differences between groups at post and follow-up. The ETS group showed more positive attitudes and knowledge than the Non-ETS group even prior to the NAMI ETS presentation. Thus, it is not surprising that they showed differences at Post and Follow-up, as well. It is the interaction effect that is most meaningful: The ETS groups changed significantly; the Non-ETS group did not.

The current study also did not obtain information about the mental health experience of its student respondents—either their own experience of a mental health condition or their exposure to it through family or friends. It is possible that such experience may have influenced responses and/or receptivity to the NAMI ETS presentation messages. Future studies may wish to explore the relationship between mental health experience and impact of programs such as NAMI ETS.

Although findings indicate that similar significant interaction effects for overall score occurred in separate consideration of gender and ethnic/racial groups, analyses did not look

specifically at potential moderating effects of these demographic variables. The current study was focused on assessing overall impact across diverse classroom populations to whom NAMI ETS is typically provided. Nevertheless, it may be helpful to know more about which, if any, gender or ethnic/racial groups benefit more from the ETS presentation. Additional analyses, with a focus on demographic group differences and potential moderating influences, would be helpful in addressing this question.

It should also be noted that the NAMI ETS presentation seemed to generate some changes better than others. Although all changes were statistically significant, knowledge seemed most amenable to improvements, consistent with past studies (e.g., Wahl, Susin, Kaplan, Lax, and Zatina, 2011). Students reported a much better understanding of the warning signs of mental health conditions and a better understanding of what to do to help themselves after the NAMI ETS presentation. Attitudes and social distance preferences did not change as much. Comfort inviting someone with a mental illness to one's home, for example, showed the smallest change. Also, the negative stereotype of people with mental illness as violent and dangerous showed relatively small change. The greater improvement in knowledge may be because knowledge is, in fact, easier to change than attitudes; knowledge can be added to while attitudes must be overcome. Alternatively, the greater knowledge change may be a result of a greater emphasis on factual information, such as warning signs and help strategies, within the NAMI ETS presentation, with less direct messaging about violence or a need for social acceptance.

Nevertheless, the results suggest that NAMI Ending the Silence is a valuable tool for youth education about mental health conditions. A single, standardized 50-minute presentation produced measurable improvements in knowledge and attitudes, and those gains occurred for many different schools and students and were sustained beyond the immediate end of the

presentation. Such a program holds promise for helping to create a generation of individuals who are more accepting and understanding of mental health conditions.

References

- Chandra, A., & Minkovitz, C. (2007). Factors that influence mental health stigma among 8th grade adolescents. *Journal of Youth and Adolescence*, 6, 763-774.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.
- Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, 59, 614-625.
- Corrigan, P. W., Lurie, B. D., Goldman, H. H., Slopen, A. M., Medasani, K., & Phelan, S. (2005). How adolescents perceive the stigma of mental illness and alcohol abuse. *Psychiatric Services*, 56, 544-550.
- Corrigan, P., Michaels, P. J., & Morris, S. (2015). Do the effects of antistigma programs persist over time? Findings from a meta-analysis. *Psychiatric Services*, 66, 543-546.
- Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rusch, N. (2012). Challenging the public stigma of mental illness: A meta-analysis of outcome studies. *Psychiatric Services*, 63, 963-973.
- Corrigan, P.W., & Watson, A. C. (2007). How children stigmatize people with mental illness. *International Journal of Social Psychiatry*, 53, 526-546.
- Farina, A. (1982). The stigma of mental disorders. In A. G. Miller (Ed.) *In the eye of the beholder* (pp.305-363). New York: Praeger.
- Kobau, R., Dilorio, C., Chapman, D., Delvecchio, P., & SAMHSA/CDC Mental Illness Stigma Panel Members (2010). Attitudes about mental illness and its treatment: Validation of a generic scale for public health surveillance of mental illness associated stigma. *Community Mental Health Journal*, 46, 164-176.
- Link, B.G., & Phelan, J. C. (2006). Stigma and its public health implications. *Lancet*, 367, 528-529.
- Link, B. G., Phelan, J. C., Bresnahan, J., Stueve, A., & Pescosolido, B. (1999). Public conceptions of mental illness: Labels, causes, dangerousness, and social distance. *American Journal of Public Health*, 89, 1328-1333.
- Link, B. G., Yang, L. H., Phelan, J. C., & Collins, P. Y. (2004). Measuring mental illness stigma. *Schizophrenia Bulletin*, 30, 511-54.
- Martin, J. K., Pescosolido, B. A., & Tuch, S. A. (2000). Of fear and loathing: The role of “disturbing behavior,” labels, and causal attributions in shaping public attitudes toward people with mental illness. *Journal of Health and Social Behavior*, 41, 208-223.
- Mellor, C. (2014). School-based interventions targeting stigma of mental illness: Systematic review. *Psychiatric Bulletin*, 38, 164-171.

- Milch, R., & McAninch, C. B. (1992). Effects of stigmatizing information on children's peer relations: Believing is seeing. *School Psychology Review, 21*, 400-409.
- Painter, K., Phelan, J. C., DuPont-Reyes, M. J., Barkin, K., Villatoro, A. P., & Link, B. G. (2017). Evaluation of antistigma interventions with sixth-grade students: A school-based field experiment. *Psychiatric Services, 68*, 345-362.
- Pescosolido, B. A., Martin, J. K., Long, J.S., Medina, T.R., Phelan, J. C., & Link, B. G. (2010). "A disease like any other"? A decade of change in public reactions to schizophrenia, depression, and alcohol dependence. *American Journal of Psychiatry, 167*, 1321-1330.
- Rabkin, J. G. (1974). Public attitudes toward mental illness: A review of the literature. *Schizophrenia Bulletin, 10*, 9-33.
- Rickwood, D., Cavanagh, S., Curtis, L., & Sakrouge, R. (2012). Educating young people about mental health and mental illness: Evaluating a school-based programme. *International Journal of Mental Health Promotion, 6*, 23-32.
- Shah, N. (2004). Changing minds at the earliest opportunity. *Psychiatric Bulletin, 28*, 213-215.
- Thornicroft, G. (2006). *Shunned: Discrimination against people with mental illness*. New York: Oxford University Press.
- Thornicroft, G., Brohan, E., Rose, D., Sartorius, N., Leese, N., and the INDIGO Study Group (2009). Global pattern of experienced and anticipated discrimination against people with schizophrenia: a cross-sectional survey. *Lancet, 373*, 408-415.
- Wahl, O. F. (1999). *Telling is risky business: Mental health consumers confront stigma*. New Brunswick, N.J.: Rutgers University Press.
- Wahl, O. F. (2012). Stigma as a barrier to recovery from mental illness. *Trends in Cognitive Sciences, 16*, 9-10.
- Wahl, O. (2002). Children's views of mental illness: A review of the literature. *Psychiatric Rehabilitation Skills, 6*, 134-158.
- Wahl, O. F., Susin, J., Kaplan, L., Lax, A., & Zatina, D. (2011). Changing knowledge and attitudes with a middle school mental health education curriculum. *Stigma Research and Action, 1*, 44-53.
- Wahl, O. F., Susin, J., Kaplan, L., Lax, A., & Zatina, D. (2012). Knowledge and attitudes about mental illness: A survey of middle school students. *Psychiatric Services, 63*, 649-654.
- Watson, A. C., & Corrigan, P. W. (2005). Challenging public stigma: A targeted approach. In P. W. Corrigan (Ed.) *On the stigma of mental illness: Practical strategies for research and social change* (pp. 281-295). Washington, D.C.: American Psychological Association.
- Watson, A. C., Otey, E., Westbrook, A.L., et al. (2004). Changing middle schoolers' attitudes about mental illness through education. *Schizophrenia Bulletin, 30*, 563-572.

Footnotes

¹Those who indicated Hispanic, Mexican, or White/Hispanic in the Other category of race also responded affirmatively to the separate question of Hispanic background and therefore were not added again to the Hispanic category.