Original Research

Reducing Stigma toward Seeking Mental Health Treatment among Adolescents

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Abstract

Purpose: This study examined the effectiveness of an intervention to reduce explicit and implicit stigma-relevant attitudes toward mental illness and treatment-seeking and behavioral indicators of willingness to seek treatment.

Methods: Adolescents were randomly assigned to the experimental (education about mental illness and treatment involving psychoeducation and contact (via DVD) with an affected individual) or control intervention (education about tobacco).

Results: Findings suggest the stigma intervention was effective at reducing explicit but not implicit stigma-relevant attitudes. As hypothesized, participants receiving the experimental intervention reported less explicit stigma toward treatment and greater openness to personally seek treatment if they had also reported prior mental health treatment.

Conclusions and Implications: These findings support the potential for a brief educational intervention among adolescents to reduce negative attitudes toward mental health treatment, but raise questions about how to effectively address implicit stigma as well as the importance of translating stigma reduction into behavior changes.

Keywords: implicit and explicit attitudes, mental illness, stigma, treatment-seeking

Introduction

In any given year, an estimated 44 million adults in the United States will struggle with a mental illness (National Institutes of Mental Health, 2006). However, approximately 10.9 million of these adults fail to receive adequate treatment (Substance Abuse and Mental Health Services Administration, 2004). Results from epidemiologic studies suggest that 50–60% of individuals who could benefit from treatment do not seek care (e.g., Kessler et al., 2001), leaving millions of individuals in what Stefl & Prosperi (1985) refer to as the service gap. Perhaps even more concerning, an estimated 20% of children and adolescents struggle with a mental illness, yet 70% fail to receive adequate treatment (Surgeon General’s Report on Mental Health, 1999). Many factors contribute to this failure. We focus on one prevailing theory – that stigma toward mental illness may act as a significant barrier to seeking mental health care for both adults and adolescents (e.g., Amato & Bradshaw, 1985; Kushner & Sher, 1991; Cooper, Corrigan & Watson, 2003; Corrigan, 2004; Rickwood, Deane, Wilson & Ciarrochi, 2005; Rüsch, Angermeyer & Corrigan, 2005; Rickwood, Deane & Wilson, 2007).

Attitudes toward Mental Illness and Link to Treatment Seeking

While much of the previous research examining stigma has focussed on adults, children and adolescents are a group of particular concern, given their high rate of...
unmet treatment need and especially frequent encounters with stigma. For example, Pescosolido (2007) recently documented stigmatization by adults toward children with attention deficit hyperactivity disorder (ADHD) and depression, and more negative perceptions of children with depression than of adults with depression.

In a recent review, Corrigan (2004) posits that the threats of diminished self-esteem and identification as a stigmatized group member act as significant barriers to seeking treatment. Corrigan cites evidence for a non-specific labeling effect, whereby those labeled mentally ill, regardless of the specific mental illness diagnosis, are subject to more severe stigma than those individuals without a mental illness diagnosis (Weiner, Perry & Magnusson, 1988; Corrigan et al., 2000). Further, because mental illness is frequently concealable, affected persons may decide to avoid the stigma by denying their group membership (i.e., mental illness diagnosis) altogether, which is often accomplished by avoiding institutions that mark them as a group member, such as treatment facilities (Corrigan & Matthews, 2003). Turning this relationship around, persons reporting a prior history of mental health treatment also report more positive attitudes toward treatment (Halgin, Weaver, Edell & Spencer, 1987; Tijhuis, Peters & Foets, 1990). It is not clear whether this reflects more positive initial views among those who seek treatment, or a positive consequence of seeking treatment. In either case, this link is encouraging in that persons who have needed treatment in the past may be especially likely to need future care given the chronic nature of many mental illnesses (Yonkers, Bruce, Dyck & Keller, 2003).

Recent initiatives, such as the Presidential Task Force’s New Freedom Commission on Mental Health (2003), are attempting to address the negative association between stigma and treatment-seeking, and there has been some question about whether these initiatives are effectively reducing stigma. For instance, findings that stigma has declined in recent years (American Psychological Association, 2004) contrast with research indicating widespread stigma (Corrigan, 2004; Corrigan et al., 2002), and with mental health consumers’ self-reports (Wahl, 1999). One concern is that these stigma reduction initiatives may be making it less acceptable to openly derogate persons with a mental illness (Stier & Hinshaw, 2007). As such, an apparent decrease in stigma may not be due to an actual decline in negative attitudes, but rather, to a decline in the explicit reporting of such attitudes. However, it is also possible that stigmatizing attitudes reside outside of conscious awareness or control, and therefore, are less readily accessed via self-report measures (see recent evaluations of implicit mental illness stigma by Peris, Teachman & Nosek, 2008; Teachman, Wilson & Komarovskykaya, 2006). To consider this possibility, we will examine both explicit (consciously endorsed) and implicit (outside of conscious control or awareness) measures of stigma following a stigma reduction intervention with adolescents.

**Educational Interventions and Stigma Reduction**

While it is difficult to compare studies conducted in different countries with variable intervention and evaluation methods, previous research has yielded promising evidence for the effectiveness of educational interventions aimed at reducing stigma toward mental illness in various groups, including middle school, high school and college students, and medical professionals (e.g., Mound & Butterill, 1993; Corrigan et al., 2000; Pinfold et al., 2003; Cavanagh, Curtis & Sakrouge, 2004; Rickwood, Cavanagh, Curtis & Sakrouge, 2004; Watson et al., 2004; Essler, Arthur & Stickley, 2006; and see MindMatters, a more general national mental health initiative for Australian secondary schools; http://www.mindmatters.edu.au/default.asp).

Several studies have shown that participation in a brief educational program can be effective at reducing negative attitudes toward mental illness or increasing factual knowledge (e.g., Corrigan & O’Shaughnessy, 2007; Pinfold et al., 2003; Schulze, Richter-Werling Matschinger & Angermeyer, 2003). For instance, Rickwood et al. (2004) implemented a school-based program that consisted of a presentation delivered to high school classes by trained individuals who had experienced a mental illness. Presenters conducted a single 50–90-min session during which they discussed stigma and myths about mental illness. The control group consisted of students not participating in the intervention. Results indicated that the intervention had a strong impact on increasing general knowledge about mental health, a moderate impact on reducing negative attitudes toward mental illness, and a weak impact on reported intentions to seek treatment. However, because the control group consisted of a no intervention sample, we cannot be certain that positive changes in the intervention group were not due simply to non-specific factors, such as increased attention or contact.

Similarly, Schulze et al. (2003) examined the effect of an intervention designed for high school students in Germany, presented over the course of one week. The intervention aimed to instill a sense of competence in participants’ abilities to cope with crises and discussed schizophrenia as the result of multiple factors. The project used interactive discussions, information regarding mental illness, treatment and stigma, and contact with an adolescent struggling with schizophrenia. The control group consisted of students participating in a different project unrelated to mental health. However,
students were able to choose in which group they wanted to participate, thereby creating the potential for a self-selection bias. Unfortunately, this may have occurred because those in the experimental condition endorsed more positive pre-intervention attitudes toward people with schizophrenia. Notwithstanding, results indicated that the intervention was effective at improving negative stereotypes as well as willingness to engage socially with individuals with schizophrenia. We build on these promising early interventions by randomly assigning participants to intervention condition, including measures in addition to explicit self-report (e.g., implicit measures), and having an alternate treatment control group that focuses on a different health behavior (anti-smoking) to help control for non-specific intervention factors.

Educational interventions that aim to address false assumptions and misconceptions about stigmatized groups have used books, videos, slides, and other equipment to counter negative stereotypes (Smith, 1990; Corrigan et al., 2001; Pinfold et al., 2003). Interventions such as these are often augmented by interactive discussions because participants are more likely to remember accurate information and reject false assumptions when they are active in discussing and countering myths (Lynch, 1987; Penn et al., 1994; Corrigan & Penn, 1999). Several other factors have also been determined to be of particular importance in increasing the effectiveness of such interventions. For instance, previous research supports the idea that to maximize effectiveness, interventions should contain corrective information that challenges misconceptions (Corrigan et al., 2002). We include each of these factors in the current intervention.

Numerous studies also support the role of contact with someone with a mental illness in supplementing educational information (Pinfold et al., 2003; Schulze et al., 2003; Rickwood et al., 2004; Corrigan & O’Shaughnessy, 2007; Spagnolo, Murphy & Librera, 2008). Though it may vary somewhat by target audience, the nature of the contact is often most helpful when the contact person is moderately disconfirming of stereotypes (e.g., presenting a realistic view of the individual’s recovery from mental health struggles; Reinke, Corrigan, Leonhard, Lundin & Kubiak, 2004), and is an individual of equal status and similar age to the participants (who is therefore someone to whom participants can relate; Gaertner, Rust, Dovidio, Bachman & Anastasio, 1996; Secker, Armstrong & Hill, 1999; Corrigan et al., 2000; Reinke et al., 2004). Ideally, the contact is also institutionally supported (e.g., endorsement of the program by the participants’ organization; Williams, 1977; Adlerer, 1982). Consequently, our mental health treatment stigma intervention tries to maximize these contact components.

Despite establishing the effectiveness of programs designed to reduce stigma toward mental illnesses in general, few studies have considered interventions aimed specifically at reducing stigma toward seeking mental health treatment among adolescents. We hypothesized that such an intervention would reduce negative explicit and implicit stigma tied to mental illnesses and treatment, and increase indicators relevant to openness to treatment-seeking.

**Methods**

**Participants**

Participants were 159 local public high school students in central Virginia, recruited from mandatory physical education classes (so there was no selection bias on the basis of academic track). Three students were excluded due to questionnaire responses that indicated a failure to pay attention to study instructions, leaving a final sample of 156. The final Experimental group (n=80) was 60% female, mean age was 15.76 [standard deviation (SD)=0.68 range=15–19 years]; average socio economic status (SES) was reported as $40,000–$59,999 (parental income); and race/ethnicity was reported as 73.4% Caucasian, 12.7% African American, 1.3% Asian, 8.9% Hispanic, and 3.8% indicated ‘mixed’ or ‘other.’ The final Control group (n=76) was 54% female, mean age was 15.67 (SD=0.57; range=15–18 years); average SES was reported as $40,000–$59,999 (parental income); and race/ethnicity was reported as 72.4% Caucasian, 15.8% African American, 3.9% Hispanic, and 7.9% indicated ‘mixed’ or ‘other.’

**Development of Intervention Materials**

The experimental intervention consisted of a 35-min presentation (designed to fit into a traditional 45–80 min classroom period), comprised of an interactive powerpoint presentation covering basic information about mental illness in general, specific mental illnesses commonly diagnosed in adolescence, and treatment (presented from a biopsychosocial perspective); and a brief video presentation of an adolescent currently struggling with a mental illness. In line with previous research, the intervention contrasted myths about mental illness with corrective information (Corrigan et al., 2002). In addition, we presented the intervention in an interactive format (Lynch, 1987), so students became active participants in dispelling their own misconceptions (i.e., we elicited and discussed participating students’ own myths and misconceptions). Further, the presentation included pictures of famous individuals who had struggled with various mental illnesses to combat the myth that mental illnesses are rare.
Numerous studies support the role of contact with an individual who has personal experience with mental illness in helping to reduce stigma (Pinfold et al., 2003; Schulze et al., 2003; Rickwood et al., 2004; Pinfold, Thornicroft & Huxley, 2005), and research suggests that video contact can work as effectively as a live presentation (Reinke et al., 2004; see also Brown, Evans, Espenschade & O’Connor, 2010). Thus, we showed participants a video of a 19-year-old male who had been diagnosed (i.e., not an actor) with depression and ADHD. The video presented information that was moderately disconfirming of prior stereotypes by balancing the individual’s difficulties resulting from the mental illness, with his ability to live a normal life. Also, the video portrayed an individual of equal status by using a student of similar age as those receiving the intervention, and described his experience with mental illnesses that are highly prevalent in this age group. Further, the message that the intervention had institutional support was communicated by the school’s offering of the intervention.

The control intervention was a parallel 35-min educational presentation with content unrelated to mental health. This intervention involved showing a video with comparable amounts of information detailing the risks of tobacco smoking. Although the control intervention was not an exact match in administration style (i.e., the experimental intervention was delivered in a live interactive format, whereas the control intervention involved showing a video that contained interaction between the presenter and participants), the control intervention consisted of components comparable to those of the experimental condition (contrasting common myths with corrective information, and presenting contact with an individual struggling with tobacco smoking).

Both the experimental and control interventions were administered by ten trained graduate and undergraduate psychology students. Training included several stages. First, presenters underwent the intervention as mock participants. Following familiarization with all study materials, each presenter then administered the full protocol to the larger group of presenters, then to a smaller group, and finally to the first author. Presenters needed to demonstrate familiarity with the protocol script (i.e., an ability to deliver the full presentation without reading from the script), and maintain the standardized presentation format while delivering the script in an interactive style. During practice administrations (and pilot testing with first year college and high school students), presenters also had to show they could handle difficult questions from participants, in order that they would be able to administer both the experimental and control interventions.

**Measures**

Community Attitudes toward the Mentally Ill (CAMI – Social Restrictiveness Scale; Taylor & Dear, 1981): assesses explicit levels of stigma toward persons with a mental illness. In the interest of time, we used only the Social Restrictiveness subscale. This scale was selected based on a previous study finding that the Social Restrictiveness scale was the most highly correlated of the four subscales with participants’ reported willingness to seek mental health treatment (J.M. Saporito & B.T. Teachman, unpublished results). In the current study, Cronbach’s \( \alpha \) was 0.79.

Attitudes toward Seeking Professional Psychological Help (ATSPPH – short form; Fischer & Turner, 1970): assesses general attitudes toward seeking professional psychological help (as opposed to personal intentions to seek help). In the interest of time, we used the 10-item shortened version of the original 29-item scale. The shortened 10-item version has adequate psychometric properties (Fischer & Farina, 1995). Scores from the shortened scale correlate 0.87 with full-scale scores derived from the original scale, and were found to have comparable internal consistency at 0.84 (Cronbach’s \( \alpha \)) to the original scale. In the current study, internal reliability was 0.72. Notably, prior studies have found an association between higher ATSPPH scores and previously having sought mental health treatment (Cooper et al., 2003; Fischer & Turner, 1970), supporting the scale’s validity.

Implicit Bias Measures: To evaluate implicit attitudes, we assessed automatic associations in memory related to: 1) seeking mental health treatment, and 2) persons with mental illness. Associations are considered automatic in that they reflect attitudes that are outside of conscious control, and at times outside of conscious awareness. Specifically, the Implicit Association Test (IAT; Greenwald, McGhee & Schwartz, 1998) measures association strength between concepts and attributes. The task requires participants to categorize words as quickly as possible into superordinate categories. The IAT was developed for administration via computer, but has also been adapted for paper-pencil format (e.g., Teachman & Brownell, 2001), and Clerkin & Teachman (2010) found a significant positive relationship between the paper-pencil and computerized IAT, suggesting that the two versions reflect similar constructs. Likewise, Lemm et al. (2008, p 4), report that, The patterns of data obtained from paper-format IATs generally parallel those of conceptually similar computerized IATs. In the current study, we used a paper-pencil version to enable administration to the full class simultaneously.

Originally, the IAT was designed as a relative task, meaning that two target categories are compared for each task: the target category of interest and a
contrasting target category (e.g., comparing ‘Mentally Ill People’ to ‘Physically Ill People’). However, the results of extensive pilot testing for the current study suggested that a relative version of the paper–pencil IAT assessing automatic associations toward ‘Mental Health Treatment’ and ‘Mentally Ill People’ was not working effectively. Instead, we used a new, modified version of the IAT, called a ‘Brief IAT’ (Sriram & Greenwald, 2009), in which an explicitly labeled target comparison category is not needed.

To evaluate automatic associations toward mental health treatment, the category ‘Mental Health Treatment’ was paired with descriptor categories reflecting evaluations of seeking treatment as being either ‘Respectable’ or ‘Shameful.’ In this task, referred to as ‘IAT-Treatment,’ there were two category pairing conditions (known as blocks): one where the category ‘Mental Health Treatment’ was paired at the top of the page with the category ‘Shameful,’ and another block where the category ‘Mental Health Treatment’ was paired at the top of the page with the category ‘Respectable.’ Likewise, to evaluate automatic associations toward persons with mental illness, the categories ‘Mentally Ill People’ and either ‘Bad’ or ‘Good’ were paired (task referred to as ‘IAT–Mentally Ill People’). Thus, for each IAT task, one category pair was presented in the first block, and then the alternate category pair was presented for the next block. Prior to beginning each block, the words in each category were shown to participants so that they were not being asked to make a judgment call about where the word should be classified, but simply to complete the classification task as quickly as possible.

Participants were given 20 seconds to correctly categorize as many words as they could by circling the words that belonged to one of the two categories (e.g., ‘Mentally Ill People’ and ‘Good’) listed at the top of the page, and placing a slash through all other words. Sample words from each category included: Mentally Ill People (Depressed, Anxious), Good (excellent, great), Bad (horrible, awful), Mental Health Treatment (Counseling, Psychiatry), Respectable (proper, acceptable), Shameful (scandalous, disgraceful). The task is based on the idea that if the target and descriptor categories are closely associated in memory, participants will be able to categorize the words more quickly. IAT effects are determined by contrasting the average number of correctly classified word stimuli in one category pairing versus in the other category pairing, while taking into account the participant’s general response speed. The order of the IAT blocks within each task was counterbalanced, while the tasks themselves were presented in a fixed order (1. Practice task, 2. IAT-Treatment, 3. IAT-Mentally Ill People).

Semantic Differential Scales: assess explicit attitudes on a 7-point semantic differential scale toward ‘Mentally Ill People’ (1=′Bad’ to 7=′Good’), and ‘Seeking treatment for a mental illness’ (1=′Shameful’ to 7=′Respectable’), with higher scores indicating more positive attitudes toward the target category. The Semantic Differential Scales were administered pre- and post-intervention to evaluate change in attitudes.

Willingness to seek treatment (Saporito, Ryan & Teachman, 2007): This 5-item explicit measure assesses an individual’s reported willingness to personally seek mental health treatment on a 7-point Likert Scale. Specifically, the measure determines participants’ likelihood of seeking treatment for a mental illness (1=′Not at all likely’ to 7=′Very likely’), how helpful specific treatments are thought to be (1=′Not at all helpful’ to 7=′Very helpful’), and how likely one is to seek specific treatments (1=′Would definitely not use’ to 7=′Would definitely use’), with higher scores indicating greater willingness to seek mental health treatment. In the current study, Cronbach’s α was 0.80.

Treatment Information Checklist: To create a measure of potential interest in treatment, participants were asked to check either ‘Yes’ or ‘No’ to indicate whether they would be interested in receiving additional information about specific treatment-seeking topics (i.e., Accessing a local therapist, Accessing a psychiatrist, or Resources to quit cigarette smoking) and/or about specific mental illnesses (i.e., Anxiety, Depression, Eating disorders, ADHD). While not a direct measure of personal openness to treatment, this measure was used as a proxy to assess potential interest in treatment options.

Positive and Negative Affect Schedule (PANAS; Watson & Clark, 1994): The PANAS contains two 10-item subscales assessing current positive and negative affect. The PANAS was administered pre- and post-intervention to evaluate differential changes in affect due to the experimental and control interventions. In the current study, Cronbach’s α was 0.83 for the positive affect scale at pre-test, 0.87 at post-test, and 0.80 for the negative affect scale at pre-test, 0.82 at post-test.

Demographics Questionnaire: Standard demographic questions, such as age, gender, etc., were administered, and participants were asked to note current or past mental health treatment. Participants were also asked to note whether they had contact with a close friend or relative who had been diagnosed with a mental illness.

A series of smoking-relevant measures were also included, but are not reported here, because they were not relevant to the current hypotheses.

Procedure

Students were initially recruited from physical education classes. A letter was sent home to parents and students briefly describing the purpose of the study as
... exploring how adolescents respond to information specifically designed to have a positive impact on their attitudes toward health problems and their treatment. Parents and students were told that students would be provided with educational information either about mental health or about cigarette smoking, and they would receive information about available health treatments. Students and parents were not paid for participation.

All parts of the study were administered in a group setting in a large room (~5–10 students per group) within one 80-min classroom period. Students within a given class were randomly assigned to either the experimental or control intervention. Following informed parental consent and youth assent, participants in both groups were asked to complete the Semantic Differential Scales, and a measure assessing their current affect (PANAS). The intervention was then administered, followed by assessment of current affect (PANAS), the IATs, and then the Willingness to Seek Treatment questionnaire. All participants then completed measures assessing explicit attitudes toward mental illness and seeking mental health treatment (ATSPPH-short form, CAMI-social restrictiveness scale, Semantic Differential Scales) before providing demographic information. Measures were presented in a fixed order to minimize the effect of interference from previous measures on those outcomes most central to the hypotheses. Finally, participants were given the Treatment Information Checklist, as well as supplementary information on various mental health diagnoses, cigarette smoking, and treatment options, and fully debriefed.

Data Reduction

IAT data were scored according to the scoring algorithm developed by Lemm, Lane, Sattler, Khan & Nosek (2008) to address issues particular to the paper-pencil format. The square root of the difference between the numbers of items correctly classified between the two blocks was multiplied by the ratio of items correctly classified. Due to high error rates (i.e., greater than or equal to 30% on either block), eight participants had their data deleted on the IAT-Treatment task, and 17 participants had their data deleted on the IAT-Mentally Ill People task. We chose 30% as the error rate cutoff because this was at least two standard deviations from the mean number of correct items across tasks, and represented a natural cut point in the data for outliers.

Because the semantic differential items (both attitudes toward mentally ill people and toward seeking treatment) were extremely skewed and had a restricted range, these measures could not be used as sensitive indicators of change.

Results

Sample Characteristics and Comparison of Groups at Baseline

The Experimental and Control groups were compared to ensure that the groups did not differ on relevant variables at baseline. Independent-samples t-tests indicated no significant differences in the average age of the groups (t(154)=0.91, p=0.37, d=0.14), or SES (t(122)=0.48, p=0.63, d=0.09). Likewise, a $\chi^2$-test indicated no significant group difference in race/ethnicity ($\chi^2(4)=3.81$, p=0.43), gender ($\chi^2(1)=0.55$, p=0.46), or whether participants reported ever having struggled with a mental illness ($\chi^2(1)=1.43$, p=0.23).

Results of a $\chi^2$-test for reported contact with a friend or family member who has struggled with a mental illness indicated a significant group difference, such that more participants in the Experimental (versus Control) group reported having contact ($\chi^2(1)=4.47$, p=0.03). It should be noted that this measure was completed after the administration of the intervention. Therefore, it is not clear whether this is a true baseline difference in contact, or is the result of the intervention. It is possible that following the Experimental intervention participants had a better understanding of the variety of difficulties that may fall within the context of a mental illness or felt more comfortable disclosing, and therefore reported higher levels of contact. With this in mind, we reran all primary analyses with contact as a covariate in order to control for its potential effects and the results did not significantly change.

As expected, independent-samples t-tests indicated no significant pre-intervention group differences in average positive affect (t(153)=0.41, p=0.68, d=0.07) or negative affect (t(152)=0.72, p=0.47, d=0.12) on the PANAS. There were also no pre-intervention group differences in attitudes toward mentally ill people (t(150)=0.68, p=0.50, d=0.11) or toward seeking mental health treatment (t(151)=1.15, p=0.25, d=0.19) as measured by the Semantic Differential Scales. Table 1 reports the means and standard deviations for the pre- and post-intervention measures.
Effect of the Intervention

Change in Affect: To examine changes in reported affect before and after the intervention, two separate repeated measures analysis of variances (ANOVAs) were conducted, one for change in positive affect and one for change in negative affect. In each analysis, the intervention group was the between-subjects factor and time (pre- or post-intervention) was the within-subjects factor. In evaluating positive affect scores, there was a main effect of time, such that participants reported decreased positive affect from pre- to post-test (F(1, 153) = 12.48, p = 0.001, η² = 0.08). Further, the time by intervention group interaction was significant (F(1, 153) = 6.66, p = 0.01, η² = 0.04). Follow up paired samples t-tests for change in positive affect from pre- to post-test indicated that the Experimental group reported lower positive affect following the intervention (t(79) = 4.32, p < 0.001, d = 0.97), but there was no significant change for the Control group (t(74) = 0.68, p = 0.50, d = 0.16). Similarly, when evaluating negative affect scores, there was a main effect of time, such that participants reported increased negative affect from pre- to post-test (F(1, 152) = 7.69, p = 0.01, η² = 0.05). Further, the time by intervention interaction was significant (F(1, 152) = 8.61, p = 0.004, η² = 0.05). Follow up t-tests for change in negative affect from pre- to post-test indicated that the Control group reported higher negative affect following the intervention (t(74) = 3.36, p = 0.001, d = 0.78) though no significant change occurred for the Experimental group (t(78) = 0.15, p = 0.88, d = 0.03). Thus, both groups showed some type of affective change following the intervention, becoming either less positive or more negative. Given the group differences, change on the PANAS, positive and negative affect scales were used as covariates in subsequent analyses to examine effects of the intervention above and beyond the effects on affect, so that we can be more confident that the expected group differences in stigma are not simply due to a temporary affect manipulation.

Group Differences in Stigma-Related Mental Health Attitudes: We conducted a multivariate analysis of covariance (MANCOVA) to evaluate differences in the four indicators of stigma-related mental health attitudes: explicit attitudes toward treatment (ATSPPH), explicit attitudes toward mental illness (CAMI), implicit attitudes toward seeking treatment (IAT-Treatment), and implicit attitudes toward mentally ill persons (IAT-Mentally Ill People). The Intervention group was the between-subjects factor and change in the PANAS...
positive and negative affect scales were included as covariates.

As hypothesized, there was a main effect of the intervention, such that participants in the Experimental (relative to Control) group endorsed more positive attitudes toward mental health ($F_{(4, 120)} = 2.88, p = 0.03, \eta^2_p = 0.08$). Follow-up univariate tests indicated a significant intervention group difference on the ATSPPH, such that the Experimental group reported more positive attitudes toward treatment ($F_{(1, 120)} = 12.11, p = 0.001, \eta^2_p = 0.08$) and a nonsignificant trend on the CAMI such that the Experimental group reported more positive attitudes toward mental illness ($F_{(1, 149)} = 2.78, p = 0.10, \eta^2_p = 0.02$). There were no significant group differences on IAT-Treatment ($F_{(1, 140)} = 1.43, p = 0.23, \eta^2_p = 0.01$) or IAT-Mentally Ill People ($F_{(1, 134)} = 0.28, p = 0.60, \eta^2_p = 0.00$). Thus, results supported the hypothesis that participants receiving the experimental intervention would report more positive attitudes toward seeking treatment and mental illness, and findings indicated this effect was driven by the explicit rather than implicit measures.

Group Differences in Measures Related to Treatment Seeking: We then examined intervention group differences in measures tied to openness to treatment. Given that treatment-seeking interest is likely influenced by whether the participant is currently or has previously been in treatment, we included participants’ self-reported mental health treatment history as a moderator in the MANCOVA examining intervention group differences on the Willingness to Seek Treatment Scale and Treatment Information Checklist (again, PANAS positive and negative affect were included as covariates; mental health treatment history was added as an additional between-subjects factor). Results indicated the expected significant multivariate effect for the intervention ($F_{(2, 145)} = 3.53, p = 0.03, \eta^2_p = 0.05$) as well as nonsignificant trends for treatment history ($F_{(2, 145)} = 2.62, p = 0.08, \eta^2_p = 0.04$) and the intervention group by treatment history interaction ($F_{(2, 144)} = 2.38, p = 0.096, \eta^2_p = 0.03$). Follow-up tests indicated that the Experimental group reported significantly more willingness to seek treatment ($F_{(1, 146)} = 6.64, p = 0.01, \eta^2_p = 0.04$) and this was qualified by an intervention group by treatment history interaction ($F_{(1, 146)} = 4.72, p = 0.03, \eta^2_p = 0.03$). Unpacking the interaction with independent samples t-tests indicated that the intervention was effective at increasing reported willingness to seek treatment for those persons reporting a past or current treatment history ($t_{13} = 2.11, p = 0.04, d = 0.64$), but not for those reporting no history of mental health treatment ($t_{109} = 0.12, p = 0.91, d = 0.02$).

The follow-up tests for the Treatment Information Checklist indicated that only the main effect of treatment history was significant ($F_{(1, 146)} = 4.73, p = 0.03, \eta^2_p = 0.03$). Specifically, persons reporting a past or current treatment history requested more treatment information than did those reporting no history of mental health treatment.

Overall, results supported the hypothesis that participants receiving the experimental intervention would report less stigma, but effects were limited to the explicit measures. Further, the intervention was effective at increasing willingness to seek treatment, but only for those persons reporting a past or current treatment history. Finally, persons reporting a past or current treatment history requested more treatment information than did those reporting no history of mental health treatment.

Discussion

Every year, millions of children and adolescents in the United States struggle with and fail to receive adequate treatment for a mental illness. This study examined the effectiveness of an educational intervention aimed at reducing negative attitudes toward mental illness and mental health treatment-seeking, and increasing reported openness to and interest in treatment. Results were promising in that individuals receiving the Experimental versus Control intervention reported less stigma toward mental health treatment (though there were no significant intervention group differences on implicit stigma measures). Likewise, individuals in the Experimental (versus Control) group reporting past or current mental health treatment reported greater willingness to seek treatment, though the intervention did not significantly affect those with no treatment history. These experimental results provide some support for our hypothesis that the mental health intervention would reduce stigma, even when using a brief single-session intervention directed at adolescents’ attitudes toward mental health treatment and when including an alternate-health-intervention control group, but also leave open important questions about how to maximize the intervention’s translational potential.

Effects of the Intervention

As predicted, individuals in the Experimental (versus Control) group reported more positive attitudes toward mental health treatment, and these results appeared to be driven by the explicit rather than implicit attitudes. This presents an interesting discrepancy between attitudes and behavioral indicators, as the Experimental group reported more positive attitudes toward and willingness to seek mental health treatment, though did not actually request more materials on the Treatment Information Checklist. Wicker (1969) has suggested that level of specificity is a key component in predicting behaviors, such that general attitudes weakly predict specific behaviors.
In line with this theory, it may be that shifting participants’ general attitudes about mental health treatment were not specific enough to predict whether participants themselves wanted information on mental health treatment topics (which is more suggestive of one’s personal interest in treatment). As a result, the apparent attitude–behavior discrepancy may be partly due to different levels of specificity between the two measures.

In addition, in partial support of our hypothesis, the experimental intervention was effective at increasing expressed willingness to seek treatment, though only for those persons reporting a past or current treatment history. Similarly, persons reporting a treatment history requested more treatment information than did those reporting no history of mental health treatment. Previous research has found similar effects whereby past mental health service use (more than current clinical need) predicted utilization of psychiatric care (Friedman & West, 1987). Further, history of mental health treatment differentiated those who attended their initial scheduled psychiatric appointment from those who failed to attend (Hillis & Alexander, 1990). Likewise, positive past experiences with mental health treatment have been associated with greater intentions to seek future help for adolescents and young adults (Rickwood et al., 2005). Given this link between previous treatment utilization and more positive treatment attitudes (Halgren et al., 1987; Tijhuis et al., 1990), perhaps those with prior treatment exposure in the current sample had a greater openness to the messages in the Experimental intervention. After all, this group had already made the choice to associate with the mentally ill label, likely increasing their motivation to accept anti-stigma messages. While this is encouraging from the standpoint of potentially increasing treatment seeking among a sample at high risk for actually needing treatment (i.e., those who have required treatment in the past), it raises serious questions about how to effectively increase openness to treatment among persons reporting mental health difficulties who have less prior exposure to mental health treatment, a critically underserved group.

Effects of the Intervention beyond Stigma of Mental Illness

Interesting patterns emerged when examining group differences in positive and negative affect from pre- to post-intervention. Both groups reported a change in affect following the interventions, a finding that is not altogether surprising given that the study required adolescents to pay attention for an extended period and complete several measures. Notably, the Experimental group reported a decrease in positive affect following the intervention while the Control group reported an increase in negative affect. One explanation for this unexpected pattern may be that there are different correlates for the positive and negative affect scales.

Previous research has suggested that state negative affect scales are related to various health complaints and physical symptoms while positive affect scales are unrelated to these health issues (Beiser, 1974; Bradburn, 1969; Harding, 1982). On the other hand, social activity has regularly been found to correlate with positive affect scales, though it is largely unrelated to negative affect scales (Beiser, 1974; Bradburn, 1969; Clark & Watson, 1988). As a result, while both groups reported a change in affect following the intervention, the Experimental group’s decreased positive affect may be related to the social nature of the interactive mental health intervention. Likewise, the Control group’s reported increase in negative affect may be attributed to the primarily physical-health related content of the intervention (i.e., cigarette smoking).

Implicit versus Explicit Stigma

The intervention had the expected effect on explicit but not implicit stigma measures. Previous research has suggested that while both implicit and explicit attitudes are malleable, they can be influenced by different factors (see Gregg, Seibt & Banaji, 2006; Gawronski & Bodenhausen, 2007). For instance, Rydell & McConnell’s (2006) work suggests that because implicit attitudes are thought to reflect the sum of the evaluative information associated with a target, they may require more counter-attitudinal information than explicit attitudes in order to change. Lincoln, Arens, Berger & Rief (2008) offered a similar explanation for their lack of change on the IAT following a stigma-reduction intervention. They suggested that the length of their intervention may simply have been too short to produce noticeable changes in the IAT; a possibility that may also explain the null results in the current study. It will be helpful in future research to examine whether implicit attitudes will show more change in response to a lengthier intervention or one administered over a longer period of time (e.g., a weekly seminar series).

It is also important to note that although previous studies have supported the use of a paper–pencil IAT format as an alternative to computer administration (Lemm et al., 2008; Clerkin & Teachman, 2010), the use of the brief IAT employing a single target category is novel and its psychometric properties are not well established. As a result, it may be that the implicit–explicit discrepancy is due in part to the version of the IAT used. It does appear worth exploring alternate modifications of the brief IAT to assess treatment seeking attitudes in future research based on suggestive findings from Rüssch, Todd, Bodenhausen, Weiden & Corrigan (2009) that implicit attitudes specific to psychiatric medication (measured with a variant of the brief IAT) predicted degree of insight and perceived need for treatment in a diagnosed adult sample.
Clinical Implications

Given the multiple issues that contribute to treatment underutilization, addressing this problem will likely necessitate combining multiple interventions (e.g., stigma reduction, increased knowledge about and access to treatment, etc.). That said, results of the current study provide modest support for a brief intervention directly targeting attitudes toward seeking mental health treatment among adolescents. In designing the current intervention, we used various components found to be effective in previous studies (e.g., interactive discussions and contact with an individual with a mental illness), and we built on prior work by adding random assignment to an alternate health target for the control group, adding implicit measures, as well as using relatively large sample sizes. Consistent with previous research, results indicated that a brief intervention was effective in reducing stigma toward mental illness. In addition, the current study targeted misconceptions about mental health treatment specifically, extending previous findings to the treatment domain (rather than just mental illness more generally). This has potentially significant implications in that an effective intervention can be delivered within one class period, which has immediate effects on attitudes toward mental health treatment among a population (adolescents) that is traditionally under-treated. However, in order to fully assess the effectiveness of an intervention, such as the one used in the current study, a longitudinal follow-up is needed to consider whether the current findings translate to other indicators of reduced stigma, such as an increase in actual rates of treatment-seeking behaviors or fewer incidents of stigmatizing comments to other students. Likewise, a longitudinal study would enable us to consider the durability of the effects.

Limitations and Conclusion

Our findings need to be interpreted in light of the study’s limitations. The sample is a predominantly Caucasian, high school sample, limiting generalizability of the results. Notwithstanding, an attempt was made to improve the external generalizability of the sample by recruiting students from physical education classes that were required of all students. In this way, there was no selection bias on the basis of academic track. Further, because we randomly assigned students to the Experimental or Control group at the level of the individual student, rather than at the class level, we minimized differences between classes as a unit. An additional limitation of the sample is the limited age range, though this was considered necessary for this initial evaluation to increase internal validity. Further, we were limited in our choice of certain materials and measures due to logistical constraints. For example, the contact video in the Experimental intervention consisted only of a white male discussing his experience with depression and ADHD. Thus, although we attempted to maximize the match between the contact person and the students by filming an individual of similar age experiencing common mental illnesses, the contact’s personal background (i.e., gender, ethnicity, and mental health diagnosis) obviously did not match with all the students. An important next step will be to include additional contact representatives (e.g., male and female, varied ethnicities, different mental health diagnoses, etc.) to consider whether these features differentially affect the intervention depending on the student’s own demographic characteristics or mental health history. In addition, our use of a novel version of the IAT presented unique challenges as discussed above. Further, we were limited in our ability to examine treatment-seeking behaviors (assessing only whether individuals noted interest in treatment information). This difficulty in measuring treatment-seeking behaviors has also been a problem in previous stigma research, and presents an important challenge for future studies. Finally, the group administration was necessary due to time constraints, but this may have influenced results due to the lack of privacy (though efforts were made to insure that students’ responses were not visible to one another). Future studies might consider individual administration of the intervention or measures participants can complete at home to increase privacy.

Despite these limitations, the current study provides some promising empirical support for a stigma-reduction intervention aimed at adolescents. Using a brief, one-time intervention, we were able to significantly improve attitudes and willingness toward seeking mental health treatment in a population with largely unmet mental health treatment needs. Further, because of the short duration of the intervention and use of a video to enhance contact, implementing this intervention on a large-scale may one day be feasible, even within a busy classroom schedule.

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