Behavior and Social Issues, 18, 25-40 (2009).

THE RELATION BETWEEN PSYCHOLOGICAL FLEXIBILITY AND MENTAL HEALTH STIGMA IN ACCEPTANCE AND COMMITMENT THERAPY: A PRELIMINARY PROCESS INVESTIGATION

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ABSTRACT: The present study examined the relation between changes in psychological flexibility and changes in mental health stigma in the context of a 2.5-hour long Acceptance and Commitment Therapy group workshop for reducing mental health stigma. Of 27 college undergraduates who attended the workshop, 22 completed one-month follow-up assessment. Results revealed that mental health stigma was reduced significantly at post-treatment, and these reductions were maintained at one-month follow-up. Increased psychological flexibility from pre to follow-up was significantly correlated with the reduction in mental health stigma from pre to follow-up. Limitations of the current study and directions for future research are discussed.
KEYWORDS: Acceptance and Commitment Therapy (ACT), psychological flexibility, mental health stigma, stigma.

Over time, behavior analysis has paid greater attention to various social and cultural issues (e.g., Skinner, 1974). In recent years, Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001), a behavior analytic account of complex human behavior, has actively argued the process of stigmatization, prejudice, and social categorization (Dixon, Dymond, Rehfeldt, Roche, & Zlomke, 2003; Hayes, Niccolls, Masuda, & Rye, 2002; Weinstein, Wilson, Drake,

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& Kellum, 2008). Although a detailed explanation of RFT is beyond the scope of the present paper, it is important to cover a few key notes on its account of stigmatization, using mental health stigma as an example.

RFT conceptualizes stigmatization as a verbal operant of relating events both non-arbitrarily and arbitrarily. In stigmatization, another individual is verbally related to a certain network of verbal event (e.g., "mental illness" or "psychological disorder"). In the contemporary U.S. verbal community, terms such as "mental illness" and "psychological disorder" typically evoke aversive emotional reaction, such as discomfort and fear, and occasion avoidance and escape behaviors (e.g., Crisp, Gelder, Rix, Meltzer, & Rowlands, 2000; Kurzban & Leavy, 2001; Link & Phelan, 2001, 2006; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). A crucial point addressed by RFT is that, once a person is verbally related to these categories, the stimulus functions of these events, such as emotional discomfort and behavior-regulatory function, are transformed to that person without a direct history of conditioning.

Although derived learning and behavior regulated by it are adaptive and energy-saving, they are also problematic. According to RFT, they can be extremely insensitive to the nature and changes of actual contingencies in the environment where they occur (Hayes, 1989: Hayes et al., 2001). As a result, a person is responded to more so as an object or label based on his or her participation in a verbal evaluative category (e.g., label), as opposed to the unique features of that person (Hayes et al., 2002). Perhaps, the unnecessary avoidance of and negative emotional reaction to the stigmatized individual is learned indirectly in part by the derived and insensitivity nature of verbal process.

MENTAL HEALTH STIGMA AND STIGMA REDUCTION INTERVENTIONS

Mental health stigma is widespread, and it is linked to various negative outcomes on the stigmatized, such as unemployment, housing problems, substance use problems, and social adjustment (Link, 1987; Page, 1995; Penn & Martin, 1998; Perlick et al., 2001), as well as the underutilization of psychological services (Kushner & Sher, 1991), treatment delay (Scambler, 1998), and premature termination from treatment (Sirey et al., 2001). In response to these negative consequences, various stigma-reduction programs have been developed (Corrigan & Penn, 1999). According to Corrigan and Penn, stigma-reduction interventions are generally categorized into three groups: protest, education, and contact-based education. Protest is a confrontational approach designed to reduce or eliminate negative attitudes towards a particular group. Education provides relevant information to people in order to foster more informed views and behavior toward stigmatized groups. Contact involves exposing people to persons

with stigmatized characteristics. Contact is added to education in order to facilitate a more accurate view of stigmatized groups. Among those, education and contact-based education have been found to reduce stigmatizing attitudes (e.g., Brockington, Hall, Levings, & Murphy, 1993; Corrigan et al., 2001; Corrigan et al., 2002; Link, Cullen, Frank, & Wozniak, 1987; Morrison, 1980; Penn et al., 1994).

These education-based interventions are subject to limitations, however. Data on the long-term effects of these interventions are lacking (Corrigan, 2004). At the time of the present study, the longest follow-up period employed in stigma intervention research was one week (Corrigan et al., 2002). In Corrigan et al., the effect of contact-based education was found to be maintained at one week follow-up, but not that of education-alone condition. Another limitation reported by Corrigan (2004) was small intervention effect sizes. Finally, the mechanisms of change in these interventions are still unclear (Penn & Corrigan, 2002).

Investigation of the mechanisms of change in stigma reduction programs is important because basic research in social/personality psychology and behavior analysis challenges their fundamental premise (Corrigan & Penn, 1999). These interventions seem to assume that stigmatizing attitudes can be successfully removed from a person's repertoire. However, stigma and stereotypes have been found to be enduring (Devine, 1989; Haghighat, 2001; Hayes et al., 2001; Macrae, Milne, & Bodenhausen, 1994; Wilson & Hayes, 1996). Once developed, they tend to be better remembered (Bodenhausen, 1988), and ambiguous information tends to be construed as stereotype-confirming (Duncan, 1976). Stereotypes and stigma are also extremely difficult to disconfirm (e.g., Fyock & Stangor, 1994; Stangor & McMillan, 1992). Alternative information is resisted if it conflicts with older stereotypes (Moxon, Keenan, & Hine, 1993; Watt, Keenan, Barnes, & Cairns, 1991). Literature also suggests that new attitudes generated by a given psychosocial intervention can override the old ones, but not completely replace them (Wilson, Lindsey, & Schooler, 2000).

Furthermore, the literature shows that education-based intervention can be paradoxical (Corrigan & Penn, 1999; Wegner, 1994). In basic research, the very attempt at challenging and controlling unwanted private events is found to increase the frequency and intensity of these events (e.g., Marcks & Woods, 2005; Wegner, Schneider, Carter, & White, 1987; Wegner, Shortt, Blackes, & Page, 1990). In the area of stigmatization, Macrae et al. (1994) showed that participants who were instructed to suppress and control stereotypical thoughts about a white male skinhead were more likely to endorse negative characters of the person. This could mean that when people make direct attempts to control or fix stigmatizing attitudes toward individuals with a psychological disorder, stigmatizing thoughts

may actually gain strength (Corrigan & Penn, 1999). In sum, this line of thinking seems to suggest the utility of psychological methods that target the change in the *stimulus function* of stigma-related verbal events, without directly challenging their form or frequency (Hayes et al., 2002; cf., Corrigan & Watson, 2002).

ACCEPTANCE AND COMMITMENT THERAPY

Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) is well suited to this line of reasoning. ACT is a behavioral model and method of behavioral health, which is derived from RFT (Hayes, Barnes-Holmes, & Roche, 2001). Although evidence is still limited (Ost, 2008), preliminary findings have suggested that ACT is effective for individuals with a wide range of behavioral and health issues, including depression, anxiety, substance use problems, smoking, diabetes, chronic pain, epilepsy, and work-related stress (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). In practice ACT employs acceptance, mindfulness, and values-directed behavior change strategies in order to increase psychological flexibility, a process thought to be at the core of behavioral health (Biglan, 2009; Hayes et al., 2006). Research has shown that ACT produces positive clinical outcomes in part by increasing the process of psychological flexibility (Hayes et al, 2006).

According to Hayes et al. (2006), psychological flexibility is "the ability to contact the present moment fully as a conscious human being, and to change or persist in behavior when doing so serves valued ends" (p. 7). Like the process of stigmatization, a behavioral pattern described as greater psychological flexibility is under verbal control. However, while stigmatization is largely under the contingency of negative reinforcement characterized by verbal entanglement and avoidance, greater psychological flexibility is conceptualized to be under the contingency of positive reinforcement and sensitive to the nature and change of the environment (Wilson & Murrell, 2004). Regarding the issues of mental health stigma, if one's behavioral repertoire is flexible and sensitive, the literal impact of stigma-related verbal network is unlikely and an individual is experienced more as a unique human being as opposed to a collection of verbal categories or labels (Hayes et al., 2002).

Although data are still limited, several studies have investigated the effect of ACT on various forms of stigma, including substance abuse counselors' stigma toward their clients (Hayes et al., 2004), racial and ethnic prejudice among college students (Lillis & Hayes, 2007), self-stigma of individuals with obesity (Lillis, Hayes, Bunting, & Masuda, 2009), and self-stigma of individuals in substance abuse treatment (Luoma, Kohlenberg, Hayes, Bunting, & Rye, 2008). In regard to mental health stigma, one study has examined the effects of a 150-

minute ACT group workshop by comparing it to an education condition (Masuda et al., 2007). The study showed that, whereas both interventions were successful in reducing mental health stigma in those reporting high psychological flexibility, only the ACT group significantly reduced stigma in those reporting lower levels of psychological flexibility. These findings may suggest that psychological flexibility is an important process involved in the development and maintenance of stigmatization. A subsequent cross-sectional study supports this idea, reporting an inverse relationship between mental health stigma and psychological flexibility (Masuda, Price, Anderson, Schmertz, & Calamaras, in press).

PRESENT STUDY

Although preliminary evidence has suggested the link between mental health stigma and psychological flexibility, no study has examined whether or how changes in psychological flexibility are related to changes in mental health stigma in the context of a stigma reduction intervention. The present study investigated the nature of these relationships using pilot data of an ACT stigma reduction project (Masuda et al., 2007). The study was a single-group quasi-experimental design (i.e., pre-, post-, and one-month follow-up) examining the potential utility of ACT for reducing mental health stigma. College students were recruited as participants because the majority of studies on mental health stigma have been done with this sample, and because the present study was a theoretical investigation. Given its methodological limitations, such as the lack of comparison group and absence of random assignment of participants, the present study did not allow a thorough mediation analysis, such as the one suggested by MacKinnon, Fairchild, & Fritz (2007). However, the study was able to investigate whether and how changes in psychological flexibility from pre- to follow-up would predict changes of mental health stigma over the same period. Based on our previous findings (Masuda et al., 2007; Masuda et al., in press), it was hypothesized that increased psychological flexibility would be related to reduced mental health stigma.

METHOD

Participants and Setting

Twenty-seven college undergraduates (7 male and 20 female) were recruited from psychology courses. The majority of them were non-Hispanic Caucasians (i.e., 89%) with a mean age of 21 years old. They voluntarily participated in this study, completed informed consent documents prior to the ACT intervention, and received extra credit for their attendance. The size of group varied from two to

seven. Data analyses were conducted on 22 individuals (5 male and 17 female; mean age = 21.4), who returned to complete follow-up questionnaires.

Treatment Condition

ACT was delivered in a 150-minute workshop-format, and each group was led by the first and fourth authors (AM, KB). The present protocol was largely drawn from the original ACT manual (Hayes et al., 1999) and an ACT protocol for reducing substance abuse counselors' stigma toward their clients (Hayes et al., 2004). Modifications were made to reflect issues specific to mental health stigma. Emphasis was placed on the view that stigma was built into our daily linguistic practice. Specific exercises encouraged participants to notice how automatic, prevalent, and rigid this process is. Using the model of psychological flexibility, the ACT protocol conceptualized mental health stigma as a behavioral process of objectifying and dehumanizing another person associated with having a psychological disorder due to the process of arbitrarily applicable derived relational learning (Hayes et al., 2002). The major goal of the ACT intervention was, therefore, to *humanize* the stigmatized individuals. More specifically, the ACT intervention was designed to achieve this goal by highlighting characteristics (e.g., unique, diverse, human) that serve as alternatives to commonly described characteristics (e.g. crazy, disturbed) in order to transform the stimulus functions of stigmatized individuals as well as strengthening the participants' compassion and empathy toward them.

The ACT protocol began with group discussion on conventional problem-solving methods in the area of mental health stigma (e.g., "stigma is bad, so don't stigmatize others"). In this phase, the workability and the paradoxical effect of deliberate attempts to eliminate stigmatizing attitudes was discussed and revealed through various experiential exercises, such as the *Chocolate Cake Exercise* (Hayes et al., 1999, p. 124-125). In this exercise, participants were initially asked to imagine a chocolate cake, an emotionally neutral stimulus, for about 15 seconds. Then, they were instructed to not think of chocolate cake until a workshop facilitator asked them to stop the exercise. Participants were also instructed to pay attention to the actual workability of this control strategy while attempting to do so. After the exercise, the majority of participants reported their inability to suppress the image of chocolate cake, and the workshop facilitators suggested that the experience of futility could be applicable to the process of mental health stigma, and that it may be worthwhile to pursue another way to relate to mental health stigma. Acceptance exercises built on this experience by showing how one can experience a thought or emotion without having to get rid of it, and still make a choice to behave in a certain way.

In order to increase the sense of understanding and empathy toward those diagnosed with a psychological disorder, participants were then asked to notice the parallel between their reactions to the stigmatized individuals and reactions to their own psychological struggles (e.g., self-stigma) and the costs of stigmatization (e.g., sense of isolation, distress from deliberate attempts to eliminate psychological struggles). Following the normalization of the occurrence of psychological disorders and psychological struggles, participants learned psychological processes of acceptance and detachment of stigma toward others and self. One exercise employed in the context was the *Observer Exercise* (Hayes et al., 1999, p. 192-196).

In the Observer Exercise, participants were instructed to close their eyes and to imagine and observe private events that are relatively neutral one at a time. Once the repertoire of observing was fairly established, participants were prompted to imagine their own psychological struggle that evokes self-stigma and again to observe it and stigmatizing reactions to it one after another. While observing these events, participants also guided to acknowledge experientially that psychological struggles they experience may be universal and inevitable, that the very attempts to fix them causes further struggles, that they do not have to eliminate them completely, and that they are willing to gently and compassionately allow themselves to have these struggles (i.e., self-acceptance). Finally, participants were asked to see if they were willing to express gentleness and compassion toward people with a psychological disorder as they did so toward themselves and their own psychological struggles in the exercise.

At the end of ACT workshop, all participants were guided through the nature and importance of values and commitment to value-based actions. Then they went through public values declaration exercises, speaking out how they want to behave in interpersonal settings (functionally similar to Hayes et al., 1999, pp. 215-218).

Administration of Assessments

Participants were assessed at the beginning of the workshop (pre), at the end of the workshop (post), and at one-month follow-up. Participants filled out assessment packages across three assessment periods at the intervention site.

Instruments

Mental Health Stigma. The *Community Attitudes toward the Mentally Ill* scale (*CAMI*; 40 items; Taylor & Dear, 1981) is a 5-point Likert, self-report questionnaire that is designed to measure attitudes toward the mentally ill. The CAMI asks participants to rate their degree of agreement with each statement,

ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In order to make psychological disorders more applicable to college student samples, it was modified as follows. The term *mental disturbance* was replaced with *psychological disturbance*, *the mentally ill* was substituted with the term *a person with a psychological disorder* (e.g., severe depression, panic attacks, schizophrenia, eating disorder, alcohol or substance abuse disorder), *mental illness* with *psychological disorder*, and gender specific references (e.g., *a woman*) with *a person*. The CAMI has four subscales: (a) Authoritarianism, (b) Benevolence, (c) Social Restrictiveness, and (d) Community Approach. Consistent with previous research (Hayes et al., 2004; Masuda et al., 2007), to reach an overall attitude score (i.e., stigma toward people with psychological disorders), Benevolence and Community Approach were subtracted from Authoritarianism and Social Restrictiveness. Thus, possible scores ranged from -80 to 80, with higher scores indicating more negative attitudes toward people with psychological disorders. In the present study, the alpha coefficients of Authoritarianism, Benevolence, Social Restrictiveness, and Community Approach at pre-treatment were .44, .74, .71, and .91. Scale inter-correlations varied from .31 to .86 at pre-treatment.

Psychological Flexibility. The *Acceptance and Action Questionnaire-16* (*AAQ*; Bond & Bunce, 2003) assesses psychological flexibility. In the measure, psychological flexibility is divided into two major processes, willingness to accept one's own undesirable thoughts and feelings and acting in a way that is congruent with one's values and goals. Based on this conceptualization, the AAQ-16 consists of two subscales, Willingness/Acceptance and Action. The 7-item Willingness/Acceptance subscale is designed to measure one's willingness to experience negative thoughts and feelings fully as they are, and the 9-item Action subscale is designed to measure the degree to which one engages in value-directed actions. Each item is scored using a seven-point Likert scale ranging from 1 (*never true*) to 7 (*always true*). The total score of AAQ-16 ranges from 16 to 112, with higher scores depicting greater psychological flexibility. In a previous study conducted with non-clinical adult samples in work settings (Bond & Bunce, 2003), alpha coefficients for this measure were between .72 and .79. In the present study, the alpha coefficient at pre-treatment was .54, which was notably low. This may be in part due to the small sample size (n = 22).

RESULTS

Effects on Mental Health Stigma

The scores for all measures at different time periods are shown in Table 1. All variables were analyzed using a repeated measures design. A significant main effect for time was followed by pairwise comparisons with a Bonferroni correction to maintain an overall alpha of .05. A repeated measures analysis was conducted for the CAMI total. In CAMI total, a significant effect for time was found, F (2, 42) = 46.27, $p < .001$. As seen in Figure 1, subsequent pairwise comparisons showed that mental health stigma was significantly reduced at post-treatment (*Mdiff* = 14.23, $p < .001$), and the reduction was maintained at one-month follow-up (pretreatment vs. follow-up, *Mdiff* = 11.32, $p < .001$; post-treatment vs. follow-up, *Mdiff* = 2.91, $p = .136$).

Effects on Psychological Flexibility

No significant effects for time were found in the AAQ-16 total, F (2, 42) = 1.56, $p = .222$. No significant effect of time was found in the Action subscale, F (2, 42) = .22, $p = .807$. However, a trend of main effect of time was recognized in the Willingness/Acceptance subscale, F (2, 42) = 2.57, $p = .088$.

TABLE 1. MEANS AND STANDARD DEVIATIONS OF STUDY VARIABLES (N = 22).

	Pre	Post	Pre-post within *d*	Follow-Up	Pre-*F*-up within *d*
CAMI					
Total	- 30.64 (15.13)	- 44.86 (15.45)	1.78	- 41.95 (17.31)	1.56
AAQ-16					
Total	74.18 (7.77)	75.68 (8.39)	-.21	77.23 (10.83)	-.33
Action	44.50 (5.88)	45.09 (6.50)	-.16	44.91 (6.09)	-.08
Willingness/Acceptance	29.68 (5.41)	30.59 (5.06)	-.18	32.32 (6.52)	-.44

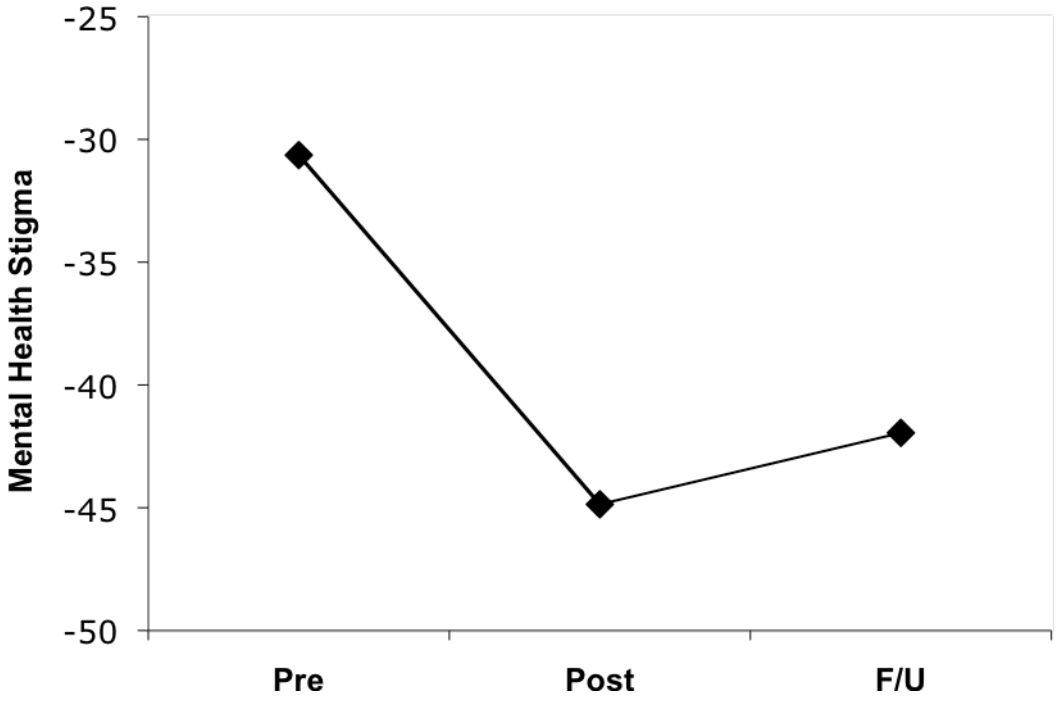

Figure 1. The mean scores of CAMI total at pre, post, and follow-up.

Process Analyses

As exploratory analyses, the correlations of change scores between mental health stigma and psychological flexibility in various time periods were investigated. Of those, the change score of mental health stigma (i.e., CAMI total score) and that of psychological flexibility (i.e., AAQ-16 total score) from pre-treatment to follow-up was of our primary interest, because the aim of the present investigation was to explore a longer-term link between the two variables. The change scores of the two measures were calculated using the formula of pre-treatment score subtracted from follow-up score.

Figure 2 delineates the correlation between the change score of mental health stigma and that of psychological flexibility of 22 participants. The *Y*-axis denotes the change score of mental health stigma, on a scale of -30 to 5 with lower scores indicating greater reduction in mental health stigma. Positive values on the *Y*-axis

suggest an increase in mental health stigma from pre to follow-up. The *X*-axis depicts the changes score of psychological flexibility, on a scale of -30 to 30 with greater scores denoting greater increase in psychological flexibility. Negative values on the *X*-axis suggest the reduction of psychological flexibility from pre to follow-up. A Pearson correlation revealed that the change of psychological flexibility (i.e., AAQ-16 total) was significantly and inversely related to the change of mental health stigma (CAMI total) (r = -.549, p = .008). Additional correlational analyses revealed the lack of significant association between the changes of the two variables from pre- to post- (r = -.328, p = .137) and from post- to follow-up (r = .002, p = .993).

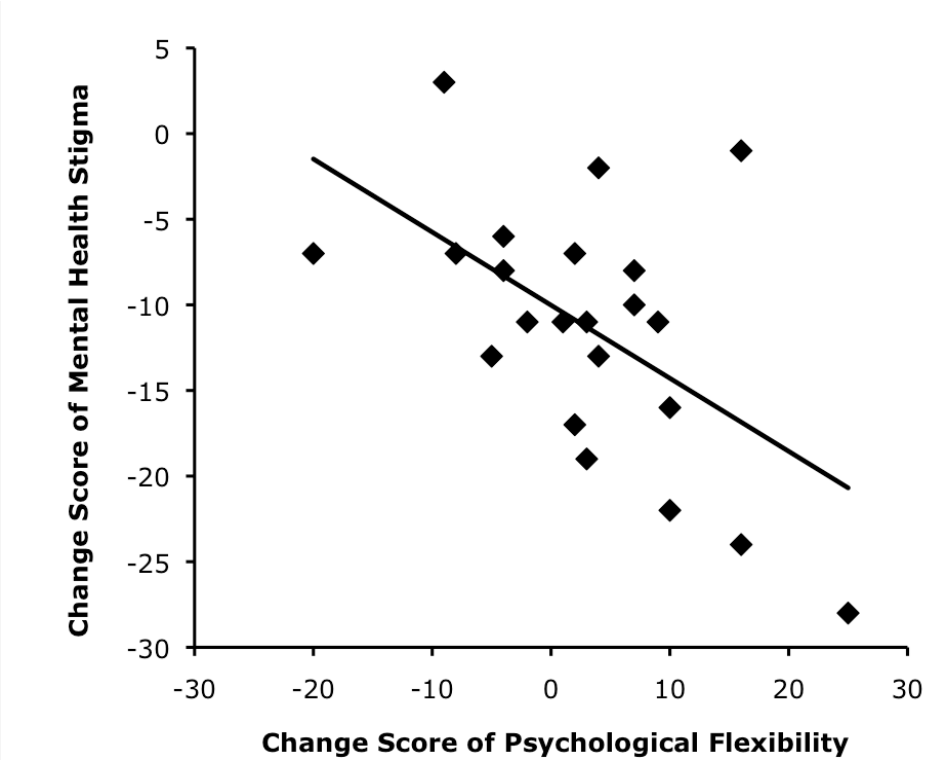

Figure 2. Scatter plot revealing the relation between the change score of mental health stigma and that of psychological flexibility.

DISCUSSION

The present preliminary study revealed that mental health stigma scores were reduced, and these changes were maintained at one-month follow-up. Unlike our prediction, psychological flexibility did not increase significantly either immediately or one-month after the intervention. However, as predicted, the present study also revealed that the change of psychological flexibility from pre to follow-up significantly predicted the change of mental health stigma from pre to follow-up. From pre-treatment to follow-up, improvement in psychological flexibility scores was associated with greater reduction in mental health stigma scores. This finding seems to suggest that psychological flexibility may be an important process related to the occurrence and maintenance of mental health stigma.

Given methodological limitations, such as lack of a control group and absence of random assignment, these favorable findings cannot be attributed solely to the ACT intervention. Nevertheless, the present study appeared to extend our understanding of mental health stigma and its relation with psychological flexibility. A previous cross-sectional study has shown the link between mental health stigma and psychological flexibility (Masuda et al., in press). Regardless of whether these positive changes are attributed to the ACT intervention or not, the present study provides preliminary data of the relationship between mental health stigma and psychological flexibility over a period of one month, suggesting that psychological flexibility may be a useful conceptual framework in understanding and intervening on problems related to mental health stigma. The present preliminary data also supports the ACT model of stigma (e.g., Hayes et al., 2002).

The present study has notable methodological limitations. First, it is important to stress that the present study was a single-group quasi-experiment. Because of the lack of methodological rigor (e.g., the lack of comparison group, the absence of random assignment of participants), the factors that led to the current results are unknown. For this reason, the present findings should be treated as preliminary, and exaggerated interpretation of present data should be avoided. Second, although an increasing trend of psychological flexibility was found in the present study, using the general, non-problem-specific AAQ-16 (Bond & Bunce, 2003), the improvement was not significant. This may have been in part because of small sample size, but the lack of statistical significance of non-specific ACT is often attributed to the insensitivity of AAQ, which may not fully capture the process of interest (e.g., Hayes et al., 2006). The development and use of an AAQ tailored to the issues related to mental health stigma is an alternative avenue for future research.

A third methodological limitation is the variation in the number of participants per group. The number varied from two to seven participants. The size of the group may have influenced the degree of active engagement in study participation, as well as changes in outcome and process measures. A fourth limitation is the lack of intervention adherence checks. Because the interventions were closely scripted, adherence was not formally assessed. It is important that future studies employ an adherence method, such as videotaped sessions.

Finally, a fifth notable methodological problem is that the present research exclusively relied on self-report measures. From an ACT perspective, stigma is often conceptualized as a behavioral process, where stigmatizing thoughts evoke particular negative behaviors, such as excessive avoidance. The CAMI only assesses the cognitive aspects of stigma, not its overall pattern of stigmatization. To date, the development and refinement of appropriate methods for capturing the behavior of stigmatization is in its infancy. However, the repeated behavioral assessment of stigma-related behavior and its competing behavior, such as pro-social behavior, are an alternative to self-report measures of stigma. Additionally, with respect to the issue of demand characteristics in the use of self-report measure, a behavioral task, such as the Implicit Association Test (IAT), is suitable to assess the levels of mental health stigma. Although the application of behavioral measurement seems to be difficult in this area, further efforts are warranted.

Despite these limitations, the present study seems to provide additional insight into stigma in terms of its relationship with psychological flexibility. As the current ACT study suggests, a lack of psychological flexibility may be an important factor involved in the occurrence and maintenance of mental health stigma, and an acceptance and mindfulness-based intervention that targets the improvement of psychological flexibility may offer a new avenue for stigma reduction. The present findings are encouraging, and further investigations into the role of psychological flexibility in the context of mental health stigma seem warranted.

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