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Examining Associations among Factor-analytically Derived Components of Mental
Health Stigma, Distress, and Psychological Flexibility

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Abstract

Mental health stigma can be detrimental not only for the recipient, but also for the stigmatizer. As mental health stigma is often conceptualized as a multidimensional construct, Study 1 first examined the factor structure of mental health stigma as assessed by the Stigmatizing Attitude-Believability (SAB; Masuda et al., 2009) ~~with the aim of potentially creating factor analytically derived subscales.~~ Study 2 investigated differential relations between the factor-analytically derived components of mental health stigma and psychological distress and psychological flexibility. Results of Study 1 revealed that mental health stigma consisted of two related, yet separable components: Exclusion and Course/Origin. The Exclusion component was characterized by negative emotions and cognition associated with an increased desire for social distance. The Course/Origin was marked by pessimistic views toward treatment prognosis and recovery. ~~Further,~~ Results of Study 2 suggested that these two components have differential associations with psychological distress and flexibility. The Course/Origin component of stigma, but not the Exclusion, was associated with psychological distress of the stigmatizer. Furthermore, this, and the association was fully mediated by lower levels of psychological flexibility. These findings suggest the importance of conceptualizing mental health stigma multidimensionally.

Keywords: Stigma; Mental Health Stigma; Psychological Distress; Psychological Flexibility

1. Introduction

Mental health stigma can be roughly defined as a multidimensional process of objectifying and dehumanizing a person because of being labeled as “having a mentally disorder”. Although its negative consequences on those with a mental disorder are well documented (Corrigan & Penn, 1999; Link & Phelan, 2001), its impact on the stigmatizer is relatively largely unknown. Interestingly, a recent study (Masuda, Price, Anderson, Schmertz, & Calamaras, 2009) has shown that having greater mental health stigma is associated with having greater psychological distress. The study also revealed that theis association is mediated by diminished psychological flexibility, the ability to experience whatever one is experiencing openly and fully, when doing so promotes value-directed activities (Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

To date, the study by Masuda et al (2009) represents the only examination of the association between mental health stigma and the well-being of the stigmatizer. Although interesting, their findings are subject to several conceptual limitations. First, the measure used by Masuda et al. (2009), the Stigmatizing Attitudes-Believability (SAB), treats mental health stigma unidimensionally. This conceptual approach may not be adequate as mental health stigma is often theorized to be multifaceted, involving features, such as fear and anxiety, perceived sense of “us vs. them,” treatability, course, and the locus of responsibility (Crisp et al, 2000; Jones et al., 1984; Kurzban & Leary, 2001). Additionally, it is still unclear whether the construct of mental health stigma in general, and the one measured by the SAB in particular, can be systematically grouped into subcomponents. If empirically derived components are found, it is also important to investigate the differential associations between the components of stigma and important

variables of interest, such as distress and psychological flexibility. The elucidation of these associations is crucial in understanding the potential mechanisms underlying the association that establish the link between mental health stigma and psychological distress within for the stigmatizer.

1.2. The current study

To begin to address these concerns, the present investigation consisted of two cross-sectional studies. Study 1 first examined the factor structure of mental health stigma as assessed by the SAB with the aim of potentially creating factor-analytically derived subscales. Study 2 further investigated these subscales by examining which components(s) of mental health stigma were associated with psychological distress and psychological flexibility, variables previously found to be associated with SAB scores. Furthermore, if significant associations between components of mental health stigma and psychological distress were found, the potential of psychological flexibility as a mediator of this association was examined.

2. Study 1

2.1. Methods of Study 1

2.1.1. Participants and Procedure

Participants were 591 undergraduates (448 females; $M_{\text{age}} = 20.3 \pm 4.4$) who participated in exchange for partial course credit. The ethnic composition of the sample was representative of the university with 42.6% ($n = 252$) identifying as “European American,” 30.6% ($n = 181$) identifying as “African American,” 13.5% ($n = 80$) identifying as “Asian American,” 6.6% ($n = 39$) identifying as “Hispanic American,” and

6.6% ($n = 39$) identifying as “bicultural” or “other.” All materials were administered online.

2.1.2. Measures

2.1.2.1. Mental Health Stigma.

The *Stigmatizing Attitudes-Believability* (SAB; Masuda et al., 2009) is an 8-item self-report questionnaire developed to measure stigmatizing attitudes toward people with psychological disorders. Participants are asked to rate a series of negative statements about individuals with psychological disorders on a 7-point Likert-type scale ranging from 1 (“*not at all believable*”) to 7 (“*completely believable*”). The scale has been shown to have acceptable internal consistency with a Cronbach’s $\alpha = .78$ (Masuda et al., 2009).

2.1.3. Analyses

Exploratory factor analyses (EFA) were used to elucidate potential second-order components of mental health stigma as assessed by the SAB. This analysis was intended to allow for subsequent examinations of differential relations between components of mental health stigma, assessed via factor-analytically derived subscales, and important outcomes of interest (e.g., psychological distress).

2.1.4. Results of Study 1

2.1.4.1. Exploratory factor analyses

Exploratory factor models were fit to the data using maximum-likelihood estimation. Models comprising between 1 and 6 factors were fit, with loading matrices rotated using a promax rotation. Eigenvalue Monte Carlo p values (e.g., parallel analysis; Horn, 1965) were derived in order to determine the optimal number of factors as parallel

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analysis has been shown to perform well in identifying the number of factors in an exploratory factor analysis (EFA) model (Hayton, Allen, & Scarpello, 2004; Zwick & Velicer, 1986). As shown in Table 1, these analyses suggested a two-factor solution best fit the data. Factor loadings for the best-fitting model are shown in Table 2. Although some cross-loadings were evident, inspection of the two-factor solution clearly shows two, coherent components. The first factor is reflected in items assessing respondents' beliefs that people with psychological disorders are *unpredictable, hard to talk to, dangerous to others, and different* from the respondent. Consistent with Kurzban and Levy (2001), we termed this factor Exclusion. The second factor was defined by items assessing respondents' beliefs that people with psychological disorders *will not improve even if they are treated, will not recover, cannot pull himself/herself together in order to appropriately function in society, and is the one to be blamed for his or her problems*. Consistent with the description of similar aspects of stigma developed by Jones et al. (1984), this factor was labeled Course/Origin. The two mental health stigma factors were moderately correlated with one another ($r = .51$).

2.1.5. Discussion of Study 1

Taken together, results of Study 1 indicate that mental health stigma, as assessed by the SAB, consists of two separable but related components: Exclusion and Course/Origin. The eExclusion-based mental stigma involves negative emotions and cognitions that increase the likelihood of avoiding the contact with those with a mental disorder. The eCourse/eOrigin-based stigma seems to reflect pessimistic views toward the causes, prognosis, and treatment of mental disorder. Although previous research (Masuda et al., 2009) has found mental health stigma to be associated with general

psychological distress and lower levels of psychological flexibility, the differential associations of various components of stigma have yet to be examined. If distress is associated with one aspect of stigma, but not the other, for example, such knowledge may inform potential basis for the link between stigma and distress. Additionally, if differential relations are found, it is important to examine the potential mediating role of psychological flexibility in the association between stigma and distress. Study 2 was conducted to answer these questions. Specifically, as noted above, Study 2 aimed to examine differential relations between the two factor-analytically derived mental health stigma scales and psychological distress and psychological flexibility.

3. Study 2

3.1. Methods of Study 2

3.1.1. Participants and Procedure

Participants were 573 undergraduates (424 females; $M_{\text{age}} = 20.4 \pm 4.1$) who participated in exchange for partial course credit. The ethnic composition of the sample was representative of the university and similar to Study 1 with 40.3% ($n = 232$) identifying as “European American,” 30.4% ($n = 175$) identifying as “African American,” 11.5% ($n = 66$) identifying as “Asian American,” 7.0% ($n = 40$) identifying as “Hispanic American,” and 10.7% ($n = 62$) identifying as “bicultural” or “other.” Consistent with Study 1, all materials were administered online.

3.1.2. Measures

In addition to the SAB, described above, participants in Study 2 completed measures of psychological distress and psychological flexibility.

3.1.2.1. Psychological distress.

The *General Health Questionnaire-12* (GHQ-12; Goldberg, 1978) is [one of the most widely used measures for detecting a measure of overall](#) general psychological distress [in community and non-psychiatric clinical settings](#). Participants are asked to rate frequency with which they experience common behavioral and psychological stressors. Using a Likert-scale format, items are scored on a 4-point scale, ranging from 0 (*not at all*) to 3 (*much more than usual*), with a total score derived from the sum of all responses. Total scores range from 0 to 36, with higher scores indicating poorer psychological health. Previous studies conducted in a work setting reported that the GHQ-12 has good psychometric properties ([Banks et al., 1980](#)). A recent study with a non-clinical college undergraduate sample has shown good internal consistency of .88 (Masuda, Price, Anderson, & Wendell, 2010).

3.1.2.2. *Psychological flexibility.*

The *Acceptance and Action Questionnaire* (AAQ-16; Bond & Bunce, 2003) was used to measure psychological flexibility for this study. The AAQ is a 16-item questionnaire designed to assess willingness to accept undesirable thoughts and feelings (e.g., “It is OK to feel depressed or anxious”), while acting in a way that is congruent with one’s values and goals (e.g., “I am able to take action on a problem even if I am uncertain of the right thing to do”). The measure employs a 7-point Likert scale, ranging from 1 (*Never true*) to 7 (*Always true*). Total scores range from 16 to 112, with higher scores indicating greater psychological flexibility. The AAQ has good psychometric properties. In a previous study conducted with a non-clinical sample (Bond & Bunce, 2003), alpha coefficients for this measure ranged from .72 to .79.

3.2. *Results of Study 2*

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3.2.1. *Interrelations among mental health stigma, psychological distress, and psychological flexibility*

Bivariate relations among study variables are presented in Table 3. Consistent with results from Study 1, the two stigma scales were moderately associated with each other as were psychological distress and psychological flexibility (negatively). When correlations between stigma and distress and psychological flexibility were examined, different patterns emerged. Exclusion was uncorrelated with distress and negatively correlated with psychological flexibility. Course/Origin, however, evidenced a significant positive correlation with distress and was more strongly negatively correlated with psychological flexibility. These findings were confirmed at the multivariate level with only Course/Origin ($\beta = .17, t = 3.51, p < .001$) associated with distress when both stigma scales were examined simultaneously in a regression analysis controlling for age, gender, and ethnicity. Parallel findings emerged when unique associations with psychological flexibility were examined ($\beta = -.25, t = -5.47, p < .001$).

3.2.2. *Psychological flexibility as a mediator between Course/Origin and psychological distress*

To test whether the association between Course/Origin and psychological distress could be explained by psychological flexibility, we conducted a **meditational** analysis controlling for age, gender, and ethnicity (Figure 1). We first regressed psychological distress on Course/Origin and the covariates and on psychological flexibility and the covariates ~~(noted above)~~. As noted above, Course/Origin was significantly associated with psychological distress (path *c*). Furthermore, Course/Origin was uniquely associated with psychological flexibility (path *a*) and psychological flexibility was uniquely

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associated with psychological distress (path *b*). Then, using the SPSS macro provided by Preacher and Hayes (2008), we conducted a bootstrapping test (n boots = 5,000) for the model. Bootstrapping has become the preferred method for mediation analyses as it overcomes limitations associated with sampling distribution assumptions, among others (Shrout & Bolger, 2002). Furthermore, ~~as~~ shown in Figure 1, results showed that, consistent with previous research (e.g., Masuda et al., 2009), the association between Course/Origin and psychological distress was fully mediated by psychological flexibility (path *c'*; 95% confidence interval [.09, .21]).

3.3. Discussion of Study 2

Results of Study 2 suggest that the two factor-analytically derived subscales of mental health stigma have differential relations with ~~psychological~~ distress and psychological flexibility; only Course/Origin was associated with these outcomes when both components were examined simultaneously. Furthermore, the association between Course/Origin and ~~psychological~~ distress was fully mediated by psychological flexibility. Taken together, these results suggest meaningful differences in the impact of different components of mental health stigma on the psychological distress of the stigmatizer with Course/Origin, but not Exclusion, representing a significant predictor ~~and Exclusion not emerging as significant~~.

4. General Discussion

The present study suggests that mental health stigma, as measured by the SAB, is best conceptualized as a multidimensional construct consisting of two related, yet distinct components which we termed Exclusion and Course/Origin. Further, ~~e~~Examining mental health stigma via factor-analytically ~~driven~~ derived components is crucial, as different

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aspects of stigma appear to be differentially associated with distress and psychological flexibility within of the stigmatizer. Furthermore, results of the present set of studies suggest that it was the pessimistic view toward the cause, prognosis, and treatment of mental disorder (i.e., Course/Origin) in mental health stigma that drives the its association between mental health stigma and with psychological distress. Furthermore, ~~Importantly, this~~ association was found to be fully mediated by lower levels of psychological flexibility.

Conceptually, consistent with the findings of Masuda et al. (2009), the present study suggests that psychological flexibility is a useful concept in understanding the association between mental health stigma and distress. Our study extends this literature by not only revealing differential associations between components of stigma and psychological distress, but also by ~~by~~ suggesting that psychological flexibility may reflect ~~is in fact an underlying mechanism, shared feature that that explains explains why the~~ association between the ~~driving component of stigma (i.e., Origin/Course/Course/Origin component of stigma) is associated with and~~ distress in the stigmatizer. The exclusion component, however, appears to be unrelated to psychological distress.

In general, the extant literature identifies mental health stigma solely in terms of its content (e.g., “they are dangerous” and “they are not going to recover”; Crisp et al., 2000). Given findings that psychological flexibility plays a major role in mental health stigma and its association with psychological distress, the present study suggests the importance of a functional or process based account of stigmatization (e.g., how an individual responds to or relates to stigmatizing attitudes). It appears that it is the rigid, judgmental, and avoidant aspect of stigma, not necessarily the specific form of stigma,

~~that likely accounts for the association with psychological distress. The importance of a process-based account suggested by the present study is also consistent with the work of Link and Phelan (2001, 2006) focusing on the function and psychological impact of stigma (e.g., evocation of avoidance behavior, excessive conviction of stigmatizing attitudes).~~

In addition to representing an important conceptual advancement, the present findings are also relevant to stigma reduction interventions. Our results suggest that, in addition to modifying the content of stigmatizing attitudes, it is important for stigma reduction interventions to also target the underlying processes that maintains~~address~~ the affect/behavior regulatory function of stigmatizing beliefs. This framework is consistent with the theoretical model of ~~recently developed stigma reduction interventions.~~ These interventions, which focus on undermining the rigid and judgmental patterns of responding to stigmatizing attitudes (e.g., taking a stigmatizing thought literally, and acting accordingly in a stigmatizing manner along with the content of what it says) ~~in function~~, not necessary on eliminating these attitudes all together~~in form or frequency~~ (Hayes, Bissett et al., 2004; Lillis, Hayes, Bunting, & Masuda, 2009; Masuda et al., 2007).

Given the lack of adequate measures of mental health stigma designed for use among the general public (Day, Edgren, & Eshleman, 2007), we did not have a wide range of mental health stigma instruments from which to choose for inclusion in the current investigation. Although the SAB has been shown to have adequate internal consistency and good convergent validity with other measures of mental health stigma, our use of the SAB alone limits the scope and generalizability of our findings. It will

therefore be important for future research to focus on potentially expanding the mental health stigma construct and to examine the appropriateness of including other aspects into the conceptualization of the construct. Additionally, the coefficient alpha of the AAQ, our measure of psychological flexibility, was relatively low. Although this problem is not unique to the present study, it seems important for scholars to pursue research to examine the reliability and validity of this measure across diverse populations. Furthermore, due to the cross-sectional, correlational nature of our data, causal conclusions are not possible. It is important for future longitudinal work to examine the prediction of psychological distress and psychological flexibility from mental health stigma prospectively. Also, although sex was covaried out in all analyses, the use of a predominantly female undergraduate sample may limit the generalizability of our findings to more diverse populations, including those that are less educated, more clinical and, potentially, more male.

5. Conclusion

Despite these limitations, the present series of studies provide new insights for mental health stigma and represents the first to date to examine associations between components of mental health stigma and psychological distress for the endorser. The present investigation suggests that, employing a factor-analytic method, mental health stigma, as assessed by the SAB, is the best conceptualized as a multi-faceted dynamic process, involving at least two distinct components: Exclusion and Course/Origin. These two components were found to have differential associations with psychological distress and psychological flexibility with the association between Course/Origin and psychological distress fully mediated by lower levels of psychological flexibility.

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Table 1.

Observed Eigenvalues and Monte Carlo p Values

	<i>Eigenvalue no.</i>					
	1	2	3	4	5	6
Observed Eigenvalue	3.484	1.373	0.724	0.650	0.557	0.443
Monte Carlo <i>p</i>	.000	.000	1.000	1.000	1.000	1.000

Note. $N = 591$. The *ps* were calculated by Monte Carlo methods as described in the text.

Table 2.

Promax Rotated Exploratory Factor Model

SAB Items	Exclusion	Course/Origin	h^2
<i>Unpredictable</i>	.78	.31	.47
<i>Hard to talk to</i>	.76	.45	.48
<i>Dangerous to others</i>	.75	.46	.47
<i>I am different from person with psych disorder</i>	.54	.26	.25
<i>Will not improve even if treated</i>	.34	.82	.43
<i>Will never recover</i>	.34	.63	.33
<i>Cannot pull self together to function in society</i>	.49	.61	.35
<i>Should be blamed for own problems</i>	.31	.60	.31

Note. $N= 591$; h^2 = unique variance. Highest loading for each item is shown in **boldface**.

Table 3.

Interrelations among mental health stigma, psychological distress, and psychological flexibility

	Exclusion	Course/Origin	GHQ	AAQ
Exclusion	.78			
Course/Origin	.49**	.77		
Distress (GHQ)	-.01	.12**	.88	
Psych Flexibility (AAQ)	-.10*	-.24**	-.42**	.65

Note. * $p < .05$; ** $p < .01$. Scale reliabilities (Coefficient alpha) are shown in boldfaced italics on the diagonal.

Figure Caption

Figure 1. Study 2: Psychological flexibility fully mediates the association between Course/Origin and psychological distress. Age, gender, and ethnicity are included as covariates in all models. $**p < .001$.

Figure 1.

