The Stigma Resistance Scale: A multi-sample validation of a new instrument to assess mental illness stigma resistance

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Abstract

Although associated with key recovery outcomes, stigma resistance remains under-studied largely due to limitations of existing measures. This study developed and validated a new measure of stigma resistance. Preliminary items, derived from qualitative interviews of people with lived experience, were pilot tested online with people self-reporting a mental illness diagnosis (*n*=489). Best performing items were selected, and the refined measure was administered to an independent sample of people with mental illness at two state mental health consumer recovery conferences (*n*=202). Confirmatory factor analyses (CFA) guided by theory were used to test item fit, correlations between the refined stigma resistance measure and theoretically relevant measures were examined for validity, and test-retest correlations of a subsample were examined for stability. CFA demonstrated strong fit for a 5-factor model. The final 20-item measure demonstrated good internal consistency for each of the 5 subscales, adequate test-retest reliability at 3 weeks, and strong construct validity (i.e., positive associations with quality of life, recovery, and self-efficacy, and negative associations with overall symptoms, defeatist beliefs, and self-stigma). The new measure offers a more reliable and nuanced

assessment of stigma resistance. It may afford greater personalization of interventions targeting stigma resistance.

1. Introduction

Mental illness stigma consists of negative attitudes, beliefs, and actions toward those with mental illness (Link and Phelan, 2001; Wahl, 2012), which frequently leads to negative experiences for people with lived experience of mental illness (Corrigan, 2007). Given the high prevalence of public stigma (Corrigan, 2004; Lyons and Ziviani, 1995), an additional challenge for people with lived experience of mental illness is self-stigma—the awareness of public stigma, agreement with these attitudes, and application of these beliefs to oneself (e.g., "I'll never get better," "I can't hold a job"; Corrigan and Rao, 2012). Self-stigma has been linked to poorer recovery across key domains such as quality of life, symptoms, and hope (Livingston and Boyd, 2010; Ritsher et al., 2003); self-stigma also has been found to moderate the relationship between insight into one's illness and one's social functioning, hope, and self-esteem (Lysaker, Roe, and Yanos, 2007).

However, not everyone with lived experience of mental illness internalizes stigma. Recent attention has turned to the importance of understanding the conditions in which individuals apply stigma to themselves (Thoits, 2011; Thoits and Link, 2015). For example, stigma resistance, initially understood as the general process of not internalizing stigma (Ritsher and Phelan, 2004), has been strongly linked to several intrapersonal qualities including increased self-efficacy, hope, recovery attitudes, insight into one's illness, and self-stigma, as well as to

improved outcomes of increased quality of life and decreased symptoms (Firmin, Luther, Lysaker, Minor, and Salyers, 2016). Moreover, stigma resistance involves the application of diverse experiences across multiple levels. A qualitative investigation of stigma resistance from the perspective of people with lived experience pointed to stigma resistance being an active, ongoing process of using one's skills, knowledge, and experiences to fight stigma at the personal, peer, and public levels (Firmin, et al., 2017).

Stigma resistance has primarily been measured using the 5-item Stigma Resistance subscale of the Internalized Stigma of Mental Illness Scale (ISMIS; Ritsher et al., 2003). This subscale includes reverse-scored, positively-worded items to represent being unaffected by stigmatizing attitudes (Ritsher and Phelan, 2004). However, the subscale has demonstrated variable to poor internal consistency, which has led to its exclusion in some studies (Mashiach-Eizenberg, Hasson-Ohayon, Yanos, et al., 2013; Park, Bennett, Couture, et al., 2013). In a recent meta-analysis of 45 studies, the average Cronbach's alpha for the Stigma Resistance subscale was only .56 (Firmin, et al., 2016). A second measure that assesses a closely related construct of positive identity, with similar wording of items, is the 5-item Positive Aspects subscale of the Stigma Scale (King et al., 2007). The Positive Aspects subscale is less widely used and also demonstrated room for improvement across three extant studies (.64; Firmin, et al., 2016).

Although the construct of stigma resistance is linked to key recovery outcomes, and is frequently the target of calls for additional research (Nabors et al., 2014; Sibitz, Unger, Woppmann, Zidek, and Amering, 2011; Thoits, 2011), it remains under-studied due to psychometric limitations. Moreover, the extant measures may not fully reflect the construct of stigma resistance. Past theoretical work by Thotis (2011) and recent work establishing a model of stigma resistance grounded in the perspectives of people engaged in this process (Firmin et al.,

2017) both conceptualize stigma resistance as a multi-faceted process, not fully captured by either of these subscales. Thus, we sought to develop and validate a new measure of stigma resistance. We aimed to produce a measure with strong psychometric properties that reflects the multi-faceted conceptualization of stigma resistance grounded in the perspective of people with lived experience (i.e., a process that occurs at the personal, peer, and public levels). We utilized qualitative interviews regarding stigma resistance (Firmin, Luther, Lysaker, Minor, and Salyers, 2016) to generate potential items and refined the new measure through validation in two independent samples of people who self-report having lived experience with mental illness.

2. Method

2.1. Participants and Procedure

A pool of 54 items was generated from qualitative interviews with 24 individuals doing well in their recovery, including peer-providers ($n = 14$). Items reflected the theoretical model developed from these analyses (Firmin et al., 2017) and frequently used direct wording used by participants. Items were pilot tested in Amazon's MTurk survey platform with individuals who identified as having lived experience with mental illness. Eligibility criteria included being at least 18 years old, an English speaker, as well as reporting a mental health diagnosis. Participants were paid $0.50. Ten attention-check items were included to screen poor quality or inattentive responding (Chapman and Chapman, 1983). To incentivize careful responding, participants were given the opportunity to earn an additional $0.25 compensation bonus for providing quality responses (correctly answering at least six out of ten attention-check items). Participants could skip any questions they did not wish to answer. A total of 534 individuals participated in the on-line survey on MTurk. Of those, 31 were removed for answering fewer than 6 attention-check

items correctly (e.g., "At times when I was ill or tired, I have felt like going to bed"). One

participant was removed for indicating an age less than 18 years old. Thirteen participants were

removed because they attempted to participate more than once. The final MTurk sample was 489

adults.

After conducting the online pilot, 26 of the best performing items were selected (criteria

discussed below) and administered in person to participants at one of two state-wide annual

conferences for people with lived experience with mental illness living in the Midwestern U.S.

(Conference 1 n=96, Conference 2 n=106). We combined data from both, referred to as the

"conference sample" throughout. Eligibility criteria included being at least 18 years old,

speaking English, and reporting a mental health diagnosis. Participants also had the option to

complete the survey with individual assistance by a researcher. A $10 gift-card was provided to

participants for completing any part of the survey. Participants at Conference 1 were presented

the opportunity to complete a test-retest validation phase. Two weeks after the conference,

interested participants received a copy of the stigma resistance scale and a pre-addressed,

postage-paid envelope. Sixty-four re-test surveys were mailed and 45 (72%) surveys were

returned within 3 weeks of being mailed; participants who returned surveys were sent an

additional $10 gift-card for participation in the re-test phase. All procedures were approved by

the university IRB.

2.2. Measures

In addition to the stigma resistance items, conference participants provided age, gender,

race, education level, employment status (hours currently employed if working), marital status,

and mental health diagnoses. We also administered existing measures of stigma resistance to

assess construct validity. We assessed criterion validity by examining relationships with

outcomes previously linked to stigma resistance. Hypotheses were made in line with previous reviews of stigma-resistance (Firmin, Luther, Lysaker, Minor, and Salyers, 2016), assessing whether the new measure also demonstrated positive relationships with prior measures of stigma resistance and increased quality of life, self-efficacy, hope, recovery, and whether greater stigma resistance was associated with decreased overall symptoms and depressive symptoms.

Stigma Resistance.

Our measure of stigma resistance was compared to the 5-item subscale of the Internalized Stigma of Mental Illness Scale (ISMI; Ritsher et al., 2003). As in prior research (Firmin, Luther, Lysaker, Minor, and Salyers, 2016), the Stigma Resistance subscale of the ISMIS had variable reliability, with Cronbach's alpha of .66 in the MTurk sample and .81 in the Conference sample.

Positive Aspects of Mental Illness.

The 5-item Positive Aspects subscale of the Stigma Scale (King et al., 2007) was also used to assess construct validity. This subscale was only administered to the conference sample and the reliability was adequate (.66).

Self-Stigma.

The Internalized Stigma of Mental Illness Scale (ISMIS) was used to assess self-stigma (Ritsher, et al., 2003), with higher scores indicating greater self-stigma. Similar to others (Hasson-Ohayon et al., 2014; Sibitz et al., 2011), we calculated a total-score using the mean of items in the 4 subscales excluding the stigma resistance subscale. The ISMIS demonstrated good reliability (.95 in MTurk and Conference samples).

Perceived Public Stigma.

The 12-item Perceived Devaluation Discrimination Questionnaire (PDD) scale was used to assess perceptions of public stigma, with higher scores indicating greater perceived stigma (Link, 1987). Internal consistency was good in both samples (MTurk=.88, Conference=.82).

Recovery Assessment Scale.

We measured perceptions of global recovery using a brief, 20-item version of the Recovery Assessment Scale (RAS; Corrigan, Giffort, Rashid, Leary, and Okeke, 1999; Corrigan, Salzer, Ralph, Sangster, and Keck, 2004). The brief version of the RAS has been used previously in samples of people with serious mental illness to assess attitudes and beliefs about recovery and one's ability to make progress toward life goals. Higher scores reflect more positive recovery attitudes, and the total score reliability was good for both samples (Mturk=.89, Conference=.95).

Quality of Life.

We used an abbreviated version of the World Health Organization Quality of Life (WHOQOL-BREF; Skevington, Lotfy, and O'Connell, 2004) that has been widely used in mental health samples and linked with greater stigma resistance (Luther et al., 2015; Sibitz et al., 2011). Each item asks about subjective satisfaction regarding a life domain (e.g., physical health, social relationships) as well as overall life satisfaction. Higher mean scores reflect greater self-reported quality of life. The scale demonstrated good reliability in both samples (.93).

Overall Symptoms.

The Colorado Symptom Inventory was used as a self-report measure of overall psychiatric symptoms. This 14-item measure has been widely used in diverse samples of persons with mental illness (Conrad et al., 2001; Piland, Motl, Ferrara, and Peterson, 2003) and captures

a range of symptoms, including psychotic symptoms and mood symptoms. A total score

reflected greater self-reported psychiatric symptoms; the scale demonstrated good reliability in

both samples (MTurk=.89, Conference=.93).

Defeatist Beliefs.

We used the 15-item defeatist performance beliefs subscale of the Dysfunctional Attitude

Scale (DAS; Grant and Beck, 2009) to assess how participants believe they perform tasks most

of the time (e.g., "If I fail, it is as bad as being a complete failure"). Higher scores indicate

greater defeatist beliefs. We used the total score of the defeatist performance beliefs subscale.

The DAS demonstrated excellent reliability in both samples (MTurk=.93, Conference=.92).

Self-Efficacy.

The Self-Efficacy Scale (Schwarzer, Bäßler, Kwiatek, Schröder, and Zhang, 1997) was

used to assess beliefs about general self-efficacy. Participants respond to 10 statements that

reflect optimistic self-beliefs (e.g., "I can usually handle whatever comes my way") and indicate

how much they believe the statements are true. Higher scores reflect greater perceived self-

efficacy. Good reliability was observed in both samples (MTurk=.89, Conference=.92). This

measure has been used in diverse mental health samples and in prior studies assessing stigma

(Kleim et al., 2008; Schwarzer et al., 1997).

2.3. Analyses

Analyses were conducted in several steps. First, data was screened for normality and

outliers (study variables fell within acceptable ranges using Kline's (2011) guidelines). We

randomly selected a subsample of the MTurk sample (*n*=161) for item-level descriptive statistics

and exploratory factor analysis (EFA), not including a second sub-sample (*n=*328) of the initial

MTurk sample for confirmatory factor analyses (CFA). Poor-performing items were identified

and removed if they met the following criteria: (1) floor or ceiling effects (defined by less than 5% or more than 80% endorsed the highest or lowest category, respectively), (2) low factor loadings (<.7; Hair et al., 2006), or (3) low item-total correlations (<.4; Monahan, Lane, Hayes, McHorney, and Marrero, 2009). Similarly-worded items or items that assessed similar domains were compared and the better performing items within a broad domain were retained. Items were selected to fit the theoretical model previously identified (Firmin et al., 2017). EFAs were run using principal components with viramax rotation to determine the potential number of factors using scree plot loadings, with Eigenvalues greater than 1 considered (Jolliffe, 2002).

A series of CFAs were then conducted in the remaining MTurk sample ($n = 328$) and then in the conference sample, testing the potential models suggested by the EFA. The following guidelines were used to assess model fit: (1) standardized root mean square residual (SRMR) < .08 was acceptable and <.05 good; (2) root mean square error of approximation (RMSEA) <.08 was acceptable and <.05 good; and (3) comparative fit indices (CFI) >.90 were acceptable and <.95 were considered good (Browne and Cudeck, 1992; Hu and Bentler, 1999). Finally, in order to further refine the measure across a heterogeneous sample, we combined the MTurk sub-sample (n=328) with the conference sample (n=202) to test the CFA model with the strongest support in both the MTurk sample and the conference sample. Item performance was then assessed and redundant items removed to produce a parsimonious final measure with strong model fit.

Internal consistency of the final scale was examined for the total scale and each factor. For a subsample who completed the measure twice, test-retest reliability was assessed using Pearson correlation. Finally, construct validity was assessed by conducting bivariate correlations

between the new SR measure total, subscales, and each recovery-related domain assessed.

Analyses were conducted using SPSS version 22 and Mplus.

3. Results

3.1. Sample Characteristics

In the MTurk sample, 489 adults provided usable data. Participants were primarily White (n=435, 85.8%), female (n=362, 71.4%), employed (n=328, 64.7%; average hours=36.3, S.D.=10.5), and the mean age was 33.5 (S.D.=11.2). The most commonly reported mental health diagnoses included: depression (39.3%), anxiety (26.4%), Bipolar disorder (8.5%), ADHD (6.1%), and PTSD (5.9%). The second sample was obtained from the conferences (n=202). Conference participants were also largely White (n=128, 62.2%), female (n=135, 68.2%), employed (n=129, 64.5%; average hours=27.4, S.D.=12.7), and the mean age was 47.9 (S.D.=11.7). The most commonly reported mental health diagnoses included: depression (39.3%), anxiety (26.4%), Bipolar disorder (8.5%), ADHD (6.1%), and PTSD (5.9%) Because the final stage of measure refinement would benefit from a large, diverse sample, we combined the sub-sample from MTurk and the conference sample. See Table 1 for demographics of each of the samples.

3.2. Item Selection and Preliminary Factor Structure

The initial 54 items were administered online using MTurk. Data from a random subsample (30%, n=161) were selected for initial item analysis. Items were removed for restricted range of responses (3 items removed) or for low item-total correlations (<.40, 11 items removed). The remaining items were grouped into one of the three originally conceptualized theoretical domains (i.e., personal, peer, and public stigma resistance) and similarly-worded

items were compared to select the best performing items representative of the theoretical

domains. An EFA revealed several potential factor structures could be statistically appropriate

for the remaining 26 items, including a 1, 3, or 5 factor model (see Figure 1 for the Scree Plot of

Eigen values greater than 1). Each of these models were tested in subsequent CFAs.

3.3. Confirmatory Factor Analyses and Measure Refinement

The preliminary 26-item measure was then administered to 202 conference participants.

CFAs were conducted independently in the conference sample and in the MTurk sub-sample

(n=328). As shown in Table 2, fit indices indicated that the 5-factor model demonstrated the

strongest fit in the MTurk data (SRMR=0.07, RMSEA=0.08, CFI=0.85, χ^2(299)=1330.1,

p<0.001) and in the conference data (SRMR=0.06, RMSEA=0.09, CFI=0.86 χ^2(289)=723.4,

p<0.001). To further refine the measure, the samples in which independent CFAs were

conducted were combined for a total sample of 530 participants. Using all 26 items, a new CFA

confirmed that a 5-factor model demonstrated good fit in the combined sample (SRMR=0.05,

RMSEA=0.07, CFI=0.91, χ^2(289)=938.6, p=0.001).

In order to produce a parsimonious measure with strong psychometric properties, we

selected the best performing items using the following steps. Six items were selected for removal

for having lower factor loadings and redundancy with other items within a factor. The final scale

demonstrated strong fit (SRMR=0.04, RMSEA=0.06, CFI=0.94, χ^2(160)=484.6, p=0.001) and

consists of 20 items organized into 5 factors. The final factors reflect five domains of stigma

resistance: (1) self-other differentiation (3 items reflecting the ability to separate the stigmatizing

thoughts and attitudes of others from one's own perspective), (2) personal identity (4 items on

meaning one finds in life outside their mental illness), (3) personal cognitions (3 items on

cognitive strategies employed in challenging negative thoughts regarding mental illness), (4)

peer stigma resistance (5 items reflecting a desire to use one's experience to help others with stigma), and (5) public stigma resistance (5 items on ways people challenge public stigma). Item performance in the combined sample for the final 20 items is listed in Table 3.

3.4. Reliability

The Cronbach's alpha for each of the subscales demonstrated acceptable to good reliability: Self-other differentiation=.71, Personal Identity=.85, Personal Cognitions=.82, Peer=.75, Public=.88. Forty-five participants from Conference 1 participated in the test-retest phase, and the 20-item measure had adequate to good reliability over a 3 week period for most subscales (Self-other differentiation r=.58; Personal Identity r=.67; Personal Cognitions r=.59; Public=.61); lower test-retest reliability was observed for the Peer domain (r=.46). Internal consistency for the total measure was excellent (α=.93), and test-retest over 3 weeks was also good (r=.74).

3.5. Construct Validity

Finally, using the combined sample, associations were assessed between the new measure, related constructs, and recovery-related domains (Table 3). The total Stigma Resistance Scale score was associated in expected directions with each construct assessed at the p<.001 level. First, the Stigma Resistance Scale demonstrated a positive association with being able to see the positive in having a mental health diagnosis (r=.47). Although the new measure was negatively related to the overall ISMIS (r=-.39), a weaker relationship was observed with the stigma resistance subscale of the ISMIS (r=.16).

Significant positive relationships were also observed between stigma resistance and self-efficacy, recovery attitudes, and quality of life, as well as significant negative associations with perceived public stigma, symptoms, and defeatist beliefs. At the subscale level, personal-level

stigma resistance factors also demonstrated construct validity with significant correlations in meaningful domains. Notably, greater personal identity was associated with greater recovery attitudes and self-efficacy (r=42 and .54), and the personal cognition subscale was associated with lower defeatist performance beliefs (r=-.44).

4. Discussion

This study developed a new, reliable, and valid measure of stigma resistance that overcomes limitations of previous measures and is grounded in a theoretical understanding of stigma resistance derived from the perspectives of people with lived experience. Using a systematic, developmental approach, the Stigma Resistance Scale is a 20-item measure demonstrating a 5-factor structure, reflecting distinct, but related, domains of resisting stigma: (1) self-other differentiation, (2) personal identity, (3) personal cognitions, (4) peer stigma resistance, and (5) public stigma resistance. Internal consistency was adequate for each subscale (.72-.88), and the overall measure (.93). The measure also demonstrated good consistency over a 3-week period.

The Stigma Resistance Scale demonstrated moderate to strong construct validity, significantly associated in the expected direction with each hypothesized construct. The strongest associations (moderate to large effect sizes) were observed between overall stigma resistance and self-efficacy (r=.54), defeatist beliefs (r=-.47), and seeing the positive aspects of mental illness (r=.47). The magnitude of associations observed in this study are consistent with effect sizes reported in a recent meta-analysis of associations between another measure of stigma resistance (ISMIS) and psychiatric and psychosocial outcomes (Firmin, Luther, Lysaker, Minor, and Salyers, 2016). While additional research is needed to confirm these associations, our initial

findings suggest the Stigma Resistance Scale reflects a construct that is central to several key aspects of recovery.

Some observations between the Stigma Resistance Scale and other measures were smaller than hypothesized. For example, the associations with the new measure and the ISMIS stigma resistance subscale was smaller than expected (r=.16, p<.001). One potential explanation for the weaker than expected associations observed may be due to differences in content covered across the two scales. In particular, public stigma beliefs, which do not necessarily assess stigma directed toward the self, are reflected in two of the five ISMIS subscale items (e.g., "I feel comfortable being seen in public with an obviously mentally ill person" and "People with mental illness make important contributions to society"). Thus, content assessed by the stigma resistance subscale of the ISMIS may overlap partially with content covered by the new measure, but we suggest it does not map as well onto domains reported as key by people with lived experience (Firmin et al., 2017).

The new Stigma Resistance Scale improves upon the stigma resistance subscale of the ISMIS in several ways. First, the internal consistency of the new measure's total scale (.93) is much better than the internal consistency of the ISMIS subscale in this study (MTurk sample alpha=.66, Conference sample alpha=.81) and in prior studies, where values ranged from .03 - .76; Firmin, Luther, Lysaker, Minor, and Salyers, 2016; Ritsher et al., 2003; Ritsher and Phelan, 2004). Furthermore, the new Stigma Resistance Scale assesses multiple domains of stigma resistance. This conceptualization of the construct was critical given that prior work found stigma resistance is a multidimensional construct (Thoits, 2011; Firmin et al., 2017).

Specifically, the Stigma Resistance Scale was developed from a conceptual model of stigma resistance involving (1) Personal stigma resistance, (2) Peer stigma resistance, and (3)

Public stigma resistance (Firmin et al., 2017). However, a 5-factor model, initially suggested by the EFA and confirmed through CFA, consistently outperformed the 3-factor model. Two domains of stigma resistance from the qualitative study (i.e., Peer and Public) are directly reflected in the current factor structure. The third domain, the Personal stigma resistance, was better structured with 3 subcomponents: Self-other differentiation, Personal identity, and Personal cognitions. Thus, while the final scale reflects 5-factors, we believe it remains consistent with the broad domains of the 3-factor model of stigma resistance on which it was developed.

This study has several limitations highlighting future research opportunities. First, the MTurk and conference participants were primarily White and female. Future work should examine how the intersection of multiple identifies, particularly disadvantaged identities, may interact as these impact one's experiences with stigma and stigma resistance (Grollman, 2014; Gary, 2005). A relatively small number of participants from each sample had a psychotic disorder; given work suggesting stigma may be particularly poignant and worse for people with these experiences (Corrigan, 2007), future work should example whether/how stigma resistance may differ for this sub-sample. Second, all measures used were self-report, and future work could use assessment tools that reduce shared method variance, such as clinician-rated diagnoses, functioning, or symptoms. Third, additional assessments are needed to further examine the discriminant validity and construct validity of domains that emerged in this work. For example, meta-cognition was not formally assessed but has been associated with stigma resistance (Nabors et al., 2014). A fourth limitation is that we did not specifically ask about participants' level of peer involvement and formal advocacy; assessing these variables in the future could provide additional criterion-related validity and help inform whether the factors are developmental – for

example, do individuals first engage in personal stigma resistance, then peer, and then public. A final limitation is that the new measure focuses on positive activities associated with stigma resistance, and we did not investigate potential negative reactions or ways people resist stigma (e.g., avoidance, anger).

Findings from this study suggest several possible clinical applications, including the potential to inform intervention targets and guide treatment. It may be that someone who scores low on the Self-other differentiation subscale may be particularly well suited for metacognitive therapy or self-stigma interventions such as Narrative Enhancement and Cognitive Therapy (Roe et al., 2014; Yanos et al., 2011). Similarly, individuals who score lower on the Personal Cognitions subscale may be good candidates for CBT-oriented therapies that address self-stigma (Lucksted et al., 2011; Yanos, Lucksted, Drapalski, Roe, and Lysaker, 2015). Low scores on Peer Stigma Resistance might point to opportunities to work with peers (e.g., employment as a peer specialist or volunteer opportunities) as beneficial (Davidson et al., 2012; Firmin et al., 2015). For those scoring low on Public Stigma Resistance, advocacy training, experiences practicing sharing one's story, and support for decisions about personal disclosures (Corrigan et al., 2013; Rüsch et al., 2014) may assist individuals in this domain of stigma resistance. Having a tool that reflects distinct, and potentially sequential, facets of stigma resistance may allow clinicians to tailor appropriate interventions.

Conflict of interest:

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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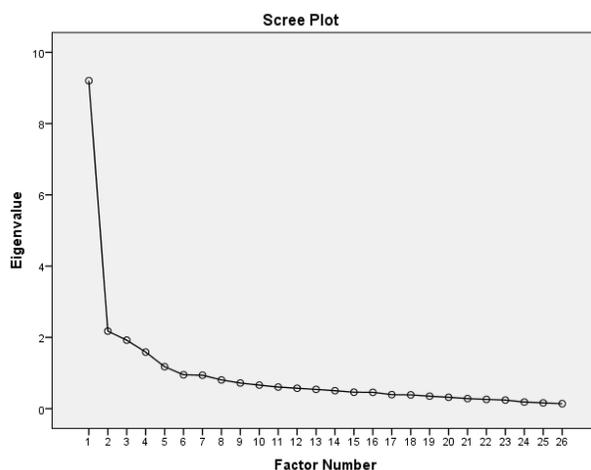Figure 1. Scree Plot for the EFA Run on a Sub-sample the MTurk Data (*n* = 161)

Table 1. Demographic Information and Comparison of MTurk and Conference Data Used for CFAs

	MTurk (*n*=328)	Conference (*n*=202)	Combined Sample (*N*=530)
Age (mean, SD)	37.4 (11.6)	47.9 (11.7)	39.3 (13.3)
Sex (*n*, % Female)	234 (71.3%)	135 (68.2%)	369 (70.2%)
Race (*n*, % White)	283 (86.3%)	128 (62.2%)	411 (77.5%)
Education (% with bachelor's degree or above)	134 (40.9%)	44 (21.8%)	178 (33.6%)
Employment (% currently employed)	115 (35.1%)	129 (64.5%)	244 (46.2%)
If employed, average hours per week (mean, SD)	36.2 (10.0)	27.4 (12.7)	34.7 (11.0)
Marital status (% never married)	169 (51.5%)	90 (44.6%)	259 (48.9%)
Mental health diagnosis			
Anxiety	91 (27.7%)	34 (16.8%)	125 (23.6%)
Depression	132 (40.2%)	45 (22.3%)	177 (33.4%)
Schizophrenia-spectrum	1 (0.3%)	51 (25.3%)	51 (9.6%)
Bipolar disorder	30 (9.1%)	36 (17.8%)	66 (12.5%)
Substance use	9 (4.5%)	5 (1.5%)	14 (2.6%)
Other (e.g., ADHD, personality disorder, PTSD)	19 (9.4%)	68 (20.7%)	87 (16.4%)
Final Stigma Resistance Scale: 20 item[a]	3.9 (0.4)	4.3 (0.7)	4.1 (0.6)
Self-other differentiation SR	3.8 (0.7)	4.2 (0.7)	4.0 (0.8)
Personal Identity SR	4.1 (0.7)	4.5 (0.8)	4.3 (0.8)
Personal Cognitions SR	3.7 (0.8)	4.1 (0.9)	3.9 (0.8)
Peer SR	3.9 (0.6)	4.4 (0.7)	4.1 (0.7)
Public SR	3.9 (0.6)	4.3 (0.8)	4.1 (0.7)
Old Stigma Resistance Subscale[b]	2.0 (0.4)	3.5 (0.7)	2.1 (0.9)
Positive Aspects[b]	--	3.0 (0.7)	--
Self-Stigma[b]	2.0 (0.6)	2.1 (0.8)	2.1 (0.7)
Perceived Public Stigma[b]	2.9 (0.5)	2.6 (0.5)	3.0 (0.7)
Recovery Assessment Scale[a]	4.8 (0.8)	4.1 (0.7)	4.5 (0.8)
Quality of Life[a]	4.2 (1.4)	3.6 (0.8)	4.0 (1.2)
Overall Symptoms[a]	3.9 (0.8)	2.3 (0.9)	3.3 (1.1)
Defeatist Beliefs[c]	3.5 (1.1)	3.1 (1.2)	3.3 (1.2)
Self-Efficacy[b]	3.0 (0.5)	3.1 (0.6)	3.0 (0.6)

Note: Missing values ranged from 3 -12 for all variables except for the RAS, QL, and DAS. Due to a copying error, those 3 measures were omitted from several surveys and missing values range from 31-35. N's varied from 319 -328 in the MTurk sample and 191 –202 in the Conference sample. [a]=Scales range from 1 to 5 with greater scores meaning more of the construct. [b]=Scales range from 1 to 4 with greater scores meaning more of the construct. [c]=Scales range from 1-7 with greater scores meaning more of the construct.

Table 2. Confirmatory Factor Analysis Data

Sample	Model	Total Items	Fit Indices			
			SRMR	RMSEA	CFI	χ^2
MTurk	Unidimensional	26	0.08	0.10	0.73	1330.08 (299)
MTurk	3 factors	26	0.07	0.09	0.79	1100.34 (296)
MTurk	5 factors	26	0.07	0.08	0.85	571.18 (289)
Conference	Unidimensional	26	0.06	0.10	0.81	897.04 (299)
Conference	3 factors	26	0.06	0.10	0.83	839.12 (296)
Conference	5 factors	26	0.06	0.09	0.86	723.36 (289)
Combined	**5 factors**	**20[a]**	**0.04**	**0.06**	**0.94**	**484.60 (160)**

Note: All χ^2 values were significant at the $p<.0001$ level. [a]Items 11, 18, and 23-26 removed.

Table 3. Item Performance of the Final 20 Items and 5-factor Model in Final Combined Samples (*N*=530)

Subscale	Item	Total Scale (20 items)		Subscales (5 factor model)	
		Item-Total Corr	Total Scale α if Item Removed	Item-Subscale Corr	Subscale α if Item Removed
Self-other differentiation	1. I can have a positive view of myself even when others don't have a positive view of me.	.63	.93	.55	.59
	2. When I encounter sigma, I can think of why these attitudes are wrong.	.64	.93	.56	.59
	3. Resisting Stigma means doing what I want to do, no matter what others think about me.	.52	.93	.48	.67
Personal Identity	4. I can have a good, fulfilling life, despite my mental illness.	.66	.93	.70	.80
	5. I have done meaningful things in my life since having a mental illness.	.63	.93	.69	.80
	6. I know there is more to me than my mental illness.	.66	.93	.73	.79
	7. My diagnosis does not define me.	.65	.93	.63	.83
Personal Cognitions	8. I challenge negative thoughts that I may have about myself related to having a mental illness.	.57	.93	.55	.87
	9. To resist stigma, I think about positive things about myself.	.62	.93	.63	.65
	10. I actively tell myself positive things to help resist stigma.	.65	.93	.60	.71
Peer Stigma Resistance	11. I encourage others who have a mental illness by showing them there is hope.	.72	.93	.72	.85
	12. My lived experiences with mental illness	.72	.93	.75	.84

	can help others with their recovery.				
	13. The way I live shows other people that stigma is wrong.	.69	.93	.65	.86
	14. I help others resist stigma by showing that person I believe in them.	.67	.93	.70	.85
	15. I help others see they should not be ashamed about mental illness.	.69	.93	.71	.85
Public Stigma Resistance	16. I share my story with others to let them know about mental illness and recovery.	.56	.93	.48	.72
	17. I question the misinformation I hear from others about mental illness.	.40	.93	.50	.70
	18. Resisting stigma means speaking up when others say negative things about mental illness.	.47	.93	.52	.70
	19. I advocate for better treatment for people with mental illness.	.59	.93	.54	.69
	20. I believe teaching others about mental illness is a way to fight stigma.	.58	.93	.54	.70

Table 4. Correlation Matrix in Combined Data of the 20-item Total and 5-factor Sub-scales

	1	2	3	4	5	6	7	8
1. SR-New Total	1.0							
2. Self-other differentiation SR	.81***	1.0						
3. Personal Identity SR	.84***	.59***	1.0					
4. Personal Cognitions SR	.78***	.64***	.59***	1.0				
5. Peer Stigma Resistance	.89***	.61***	.68***	.63***	1.0			
6. Public Stigma Resistance	.83***	.50***	.56***	.56***	.73***	1.0		
7. Positive Aspects	.47***	.40***	.40***	.42***	.43***	.39***	1.0	
8. Old SR (ISMIS subscale)	.16***	.12**	.08	.09*	.18***	.16***	.16*	1.0
9. ISMIS Total (24 item)	-.39***	-.26***	-.44***	-.34***	-.28***	-.30***	-.18*	-.15***
10. Perceived Discrimination	-.17***	-.21***	-.14***	-.16***	-.13**	-.09*	-.12	-.19***
11. Self-Efficacy	.54***	.47***	.54***	.51***	.43***	.33***	.49***	.05
12. Recovery Attitudes	.38***	.35***	.42***	.37***	.28***	.22***	.40***	.45***
13. Quality of Life	.38***	.36***	.38***	.40***	.24***	.30***	.31***	.10
14. Overall Symptoms	-.26***	-.18***	-.16***	-.17***	-.28***	-.25***	-.20*	-.63***
15. Defeatist Beliefs	-.47***	-.35***	-.45***	-.44***	-.37***	-.35***	-.27***	-.11*

Note: *=<.05, **=<.01, ***=<.001. The PA was only administered in the Conference sample (*n* = 195).

Highlights

- The new measure of stigma resistance has strong psychometric properties and demonstrates improved construct validity compared to previous tools

- Stigma resistance is linked to key psychometric and psychosocial outcomes

- The new measure may assist in greater personalization of stigma resistance interventions