

Running Title: METACOGNITION AND STIGMA RESISTANCE

**Greater Metacognition and Lower Fear of Negative Evaluation: Potential Factors
Contributing to Improved Stigma Resistance among Individuals Diagnosed with
Schizophrenia**

Ruth L. Firmin, Lauren Luther, Michelle P. Salyers, Kelly D. Buck, Paul H. Lysaker

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Abstract

Background: Stigma resistance, one's ability to block the internalization of stigma, appears to be a key domain of recovery. However, the conditions in which one is most likely to resist stigma have not been identified, and models of stigma resistance have yet to incorporate one's ability to consider the mind of others. The present study investigated the impact of the interaction between metacognition, or one's ability to form an integrated representation of oneself, others, and the world, and fear of negative evaluation on one's ability to resist stigma.

Methods: Narratives of encounters with stigma shared by 41 persons with schizophrenia or schizoaffective disorders were first coded for spontaneous expressions of fear of negative evaluation from others. Two-step cluster analyses were then conducted in order to test the hypothesis that metacognition and fearing negative evaluation from others are important, interacting pathways which contribute to resisting stigma.

Results: Those with high ($n = 11$; 26.8%), intermediate ($n = 9$; 22.0%), and low metacognition ($n = 21$; 51.2%) significantly differed on stigma resistance ($F = 9.49$, $p < .001$) and the high metacognition group was most likely to resist stigma. Those with high and low metacognition did not express fear of negative evaluation, while those with intermediate metacognition did express fear of negative evaluation.

Discussion: Findings suggest that metacognition and fear of negative evaluation are important, interacting pathways influencing how individuals process and respond to stigma.

Limitations: These results are based on a relatively small, cross-sectional sample; findings should be replicated in a larger sample using a longitudinal design.

Conclusions: Results offer preliminary support for this novel model of stigma resistance and support the use of metacognitive therapies for facilitating stigma resistance.

Keywords: stigma, metacognition, schizophrenia, fear of negative evaluation

Stigma, the negative attitudes, beliefs, and actions toward those with mental illness, is frequently implicated in factors that hinder recovery for persons with mental illness, including discrimination in the workplace, differential treatment in the criminal justice system, increased barriers toward treatment seeking, and even the perpetuation of stigmatizing attitudes by mental health providers [1, 2, 3, 4]. Given the high prevalence of public stigma [2], a consequence for some individuals with mental illness can be self-stigma, the internalization of the negative beliefs and attitudes about mental illness [5]. Internalizing stigma has been conceptualized to involve awareness of public stigma, agreement with these negative attitudes and beliefs, and application of stigma to oneself [6, 7]. Moreover, internalizing stigma has been associated with poor outcomes regarding symptoms, empowerment, self-esteem, hope, and recovery beliefs among those with mental illness, and the relationships between having insight into having an illness and recovery outcomes are moderated by one's level of internalized stigma [8, 9].

The conditions that facilitate effectively resisting stigma have yet to be identified [10]. Indeed, not all individuals with a mental illness internalize public stigma attitudes and awareness of stigma can, at times, produce “righteous anger” or responses that are less strongly linked to decreases in self-esteem or self-efficacy [11, 12, 13]. After testing several models of internalized stigma, Drapalski et al. (2013) concluded that multiple pathways exist between internalized stigma and outcomes among persons with severe mental illness and that treatments should be multifaceted in their approach to helping people resist stigma [14]. Relatively little work to date, however, has examined the factors that impact how one resists stigma and factors that might be protective.

Accordingly, we propose a model of stigma resistance that accounts for two psychological factors that have been largely overlooked in the stigma literature to date:

metacognition and fear of negative evaluation. First, metacognition refers to one's ability to form an integrated representation of oneself, others, and the world and integrate that information in a way that allows a person to respond to psychological or social challenges [15]. Evidence suggests that metacognition plays an important role in functioning for persons with mental illness [16, 17, 18] and also may be a factor underlying how individuals perceive and respond to stigma. For instance, Nabors et al. [19] found that metacognition significantly predicted one's ability to resist stigma, even after controlling for symptoms and the degree to which one agreed with stereotypes about mental illness.

A second, related factor that may influence whether one resists or internalizes stigma is fear of negative evaluation from others -- one's "apprehension about others' evaluations, distress over their negative evaluations, and the expectation that others would evaluate oneself negatively" [20, p. 448]. Cognitive-behavioral models conceptualize fear of negative evaluation as central to social anxiety and associations have been found between fear of negative evaluation and lower self-esteem and fewer expectancies for success [21, 22, 23]. Given the impact that fear of unfavorable evaluations appears to have in the context of social anxiety, and that public stigma regarding mental illness often directly includes negative assumptions about likelihood of success [3], it seems likely that fears regarding negative evaluation may also be a type of response to stigma. Furthermore, it seems likely that deficits in one's ability to take the perspective of another into account would impact whether or not one fears negative evaluation in the context of stigma and, moreover, whether one experiences the negative outcomes often associated with stigma.

The current study builds on previous work by proposing a model of stigma resistance that accounts for the degree to which one considers the minds of others in an appraisal of stigma. We

examined metacognition and fear of negative evaluation as distinct, but interacting pathways, hypothesizing that participants would differ on stigma resistance depending on their profile regarding levels of metacognition and fear of negative evaluation of others. Specifically, we hypothesized that we would see individuals differ in their levels of metacognition and that responses regarding fear of negative evaluation would have a curvilinear relationship (i.e., highest and lowest metacognition would be associated with low fear of negative evaluation and intermediate metacognition would be associated with greater fear of negative evaluation). We further hypothesized that we would see group differences in stigma resistance, with those with high metacognition better able to engage in stigma resistance than those with lower levels of metacognition.

Methods

Participants

Data were obtained as part of baseline assessments for a randomized controlled trial of Illness Management and Recovery (IMR; [25]) and from semi-structured interviews with a subsample of those participants prior to any intervention. Participants with schizophrenia or schizoaffective disorders, confirmed by a structured clinical interview (SCID; [24]), were recruited from an urban, Midwestern VA Medical Center (N=18) and Community Mental Health Center (N=28) and received \$20 for completing the assessment and an additional \$20 for the interview portion. IRB approval was obtained, and all participants were consented prior to the start of the study. Originally, 46 individuals were interviewed at baseline, among which 41 participants shared encounters with stigma. For the purposes of our research questions for this study, we examined only narratives in which participants spontaneously discussed stigma.

Participants were primarily male ($n=35$, 76.1%) and Black ($n=29$, 63.0%) and had a mean age of 48.7 (8.7).

Measures

Metacognition was measured using the Metacognition Assessment Scale (MAS-A; [26]), a rating scale created to detect the ability of a person with mental illness to think about their own thinking, the thinking of others, to recognize that one is not the center of the world, and to use that knowledge to solve psychological problems. The MAS-A was scored by trained raters. We used a total score where higher scores indicated greater metacognitive capacity; inter-rater reliability in our sample was good ($r=0.91$).

Fear of negative evaluation was coded in qualitative descriptions of encounters with stigma shared by participants as part of a semi-structured interview, the Indiana Psychiatric Illness Interview (IPII; [27]). This tool has been widely used to elicit narratives regarding one's perception of their illness and its impact on their life. Interviews lasted between 20 minutes and 4 hours (with one participant going into much detail regarding their life story and taking several breaks). Consensus was reached among researchers regarding the presence or absence of this code in each participant transcript.

Symptoms were assessed using the total score of the Positive and Negative Syndrome Scale (PANSS; [28]), an interview-based rating of symptoms across five domains: positive symptoms, negative symptoms, cognitive symptoms, hostility symptoms, and emotional discomfort symptoms [29]. Prior to conducting interviews, raters were trained to an inter-rater reliability of least .80. The reliability of the PANSS in our sample was good ($\alpha = .88$).

Stigma Resistance was assessed using the Stigma Resistance sub-scale of the Internalized Stigma of Mental Illness Scale (ISMI; [30]), which has been widely used among

persons with severe mental illness. As documented elsewhere [31, 32] the stigma resistance subscale shows distinct psychometric properties from the other subscales of the ISMI and has shown evidence of being a distinct construct [33, 34]. The sub-scale had adequate reliability ($\alpha=.58$), which is consistent with the reliability of this subscale in other samples [30, 35].

Analyses

Analyses were conducted in five steps. First, we used directed content analysis [36] to examine sections of text where participants discussed encounters with stigma as part of their life narrative (IPII) for instances where participants expressed fear of negative evaluation from others. Coding was conducted using a team approach where multiple coders (blind to metacognition scores) read each description of an encounter with stigma and came to consensus to determine whether fear of negative evaluation was present. Transcripts and coding were organized using Atlas TI qualitative software. Second, we conducted two-step cluster analyses in order to test whether levels of metacognition and fear of negative evaluation influence stigma resistance. A two-step cluster analysis approach was selected because it identifies groupings of participants by accounting for continuous and categorical data, dividing the sample into groups that reflect low within group heterogeneity but high between group heterogeneity [37]. Next, we used t-tests and Chi-square tests to assess for group differences on background characteristics and symptoms. Controlling for any significant differences, we then examined group differences on stigma resistance using an ANOVA (or ANCOVA). Finally, if significant group differences were found on stigma resistance, we planned to conduct Tukey HSD Post-hoc analyses.

Quantitative analyses were conducted in SPSS version 23.

Results

Using participants' metacognition and fear of negative evaluation responses, we conducted two-step cluster analyses. This approach produced three distinct groups in our sample with an overall model quality that was $>.075$ on a 0-1.0 scale. We next generated labels that reference the properties of each group: 1) those with high metacognition who did not express fear of negative evaluation ($n=11$, 26.8%), 2) those with intermediate metacognition who did express fear of negative evaluation ($n=9$, 22.0%), and 3) those with low metacognition who did not express fear of negative evaluation ($n=21$, 51.2%). High and low cut-points for metacognition were determined using a median split (10.5) and the mean scores for each group are reported in Table 1. Demographic variables and overall symptoms were compared across the three groups (see Table 2), revealing no significant differences.

Next, we tested for group differences on stigma resistance. Significant group differences were found between groups ($F = 9.49$, $p < .001$) and Tukey HSD follow-up analyses revealed that those with high metacognition endorsed significantly higher levels of stigma resistance than those with low metacognition ($p < .001$) and intermediate levels of metacognition ($p < .001$). Stigma resistance was not statistically different among those with intermediate and low levels of metacognition ($p < .77$).

Discussion

Here we proposed a novel model of stigma resistance, anticipating that levels of metacognition and fear of negative evaluation would account for differences in stigma resistance. Specifically, we hypothesized that individuals would range from high to intermediate to low metacognition and that fear of negative evaluation would differ accordingly, with those with greatest and lowest metacognition expressing less fear of negative evaluation and those with

intermediate levels of metacognition being more likely to express greater fear of negative evaluation. We then hypothesized that those with high metacognition would be more likely to be engaged in resisting stigma. Consistent with our hypotheses, we found three groups that varied by metacognition and our first hypothesis was supported (i.e., the group with high metacognition and no expressed fear of negative evaluation had the highest levels of stigma resistance compared to both those with intermediate and low metacognition).

These findings offer preliminary support for an innovative model of stigma resistance that accounts for the factors of metacognition and fear of negative evaluation. Similarly, this study is the first to our knowledge to consider the combined impact of metacognition and fear of negative evaluation on whether one resists stigma. Results support our hypothesis that metacognition and fear of negative evaluation act as distinct, but interacting, factors that may contribute to stigma resistance. Further, those who appear most engaged in resisting stigma were those with high levels of metacognition who did not fear negative evaluation from others. While the correlational nature of our study precludes casual inferences, one possible explanation of these findings is that the high metacognition group is able to discern the minds of others and reject stigma (e.g., seeing them as separate and inaccurate beliefs). Alternatively, it is also possible that people who are better able to reject stigma are also better able to reflect the minds of others. Given the relationship between effectively resisting stigma and positive outcomes among persons with mental illness [32], the current findings shed light on two important factors that may influence whether or not individuals resist stigma. Stigma resistance has been largely under-studied, and conditions under which individuals are most likely to resist stigma have yet to be identified [10]. Our findings also support the conclusion that metacognition and fear of

negative evaluation may be important contextual factors that could independent, although interacting, influences on one's ability to resist stigma.

Our findings are consistent with and extend previous work in several notable ways. First, our results are consistent with past work linking metacognitive capacity and increased stigma resistance [19]. Second, these findings link metacognition with fear of negative evaluation, which has previously been discussed primarily in the literature on dysfunctional beliefs and social anxiety [21, 22, 23]. Although we did not have a measure of anxiety in this study, stigma and self-stigma have been associated with higher levels of anxiety among persons with schizophrenia [16]. It is possible that those who are more anxious have a greater predisposition for fear of negative evaluation in the context of stigma and may be at greater risk for internalizing stigma. Finally, these findings also seem to suggest that a capacity to form complex ideas about the thoughts of others and oneself and use this information to address psychological problems may influence not only how one processes stigma but also whether one views stigma as valid. Using Watson, Corrigan, Laron, & Sell's (2007) [7] model of self-stigma, metacognition may be one factor that assists individuals to differentiate between awareness of stigma and agreement or application of stigma to oneself. That is, the capacity to understand and differentiate the perspective of others from one's own thoughts may be an important process that assists some individuals to not fear negative evaluation when they encounter stigma from others.

While the current findings offer a novel perspective regarding factors that may help individuals with mental illness resist stigma, several limitations should be noted and addressed in future work. In the current study, we use verbalizations of fear of negative evaluation that participants spontaneously reported, and we may be missing important information and perspectives of those who did not bring up stigma and fear of negative evaluation. Given the lack

of existing research in this area, this mixed-methods study provided an opportunity to explore fear of negative evaluation regarding stigma as it naturally emerged. Future studies might examine fear of negative evaluation more directly and compare the present findings with participants who are directly asked about fear of negative evaluation. A second limitation was the relatively small sample size, particularly of individuals who expressed fear of negative evaluation. While it is notable that only twenty-two percent of the sample expressed fear of negative evaluation, this limited our ability to assess high and low levels of metacognition within this group, and future studies should investigate these interactions in larger samples. Finally, all participants were individuals engaged in treatment, and additional work should examine whether experiences with resisting stigma differ among those outside an intervention setting.

Finally, these findings may have several important implications for practice and policy. Clinically, these findings support the use of metacognitive oriented interventions to develop an enriched understanding of oneself and others as a protective factor in responding to stigma [18, 38]. For instance, it may also be that effectively resisting stigma involves developing the ability to differentiate negative evaluation by others from their own evaluation of themselves [39, 40]. These findings may also inform the development and refinement of interventions targeting greater stigma resistance, including support for focus on metacognitive capacity and cognitive beliefs. Finally, these findings highlight the need for individualized intervention targeting stigma resistance. For instance, individuals with high or low metacognition did not express fear of negative evaluation, while those with medium metacognition levels did express fear of negative evaluation. This suggests that the same intervention may not be appropriate across groups, particularly if the moderate metacognition group is aware of negative appraisals from others, while the low metacognition group is not aware of these appraisals to the same degree. The

profiles observed also suggest that when targeting metacognition as a mechanism to improve stigma resistance, there may be a period when one grows in awareness of stigma and negative evaluation from others (e.g., moderate metacognition). This trend may be similar to those observed between improvement in insight into one's illness and increases in both hopelessness and improved functioning associated with self-stigma [9].

Competing interests:

The authors declare that they have no competing interests.

Authors' contributions: [blinded for review]

[Author 1] lead conducting the analyses and writing the manuscript. [Author 2] assisted with qualitative coding and manuscript writing and editing, as well as providing conceptual input. [Author 3] assisted with qualitative coding, manuscript editing, and conceptual input. [Author [4] assisted with manuscript editing and conceptual input. [Author 5] assisted with manuscript writing and editing and provided conceptual input. All authors read and approve the final manuscript.

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Table 1. Groups Produced by Two-step Cluster Analysis

Group	<i>n</i>	MAS Mean (SD)	Fear of Negative Evaluation (1=present, 0=absent)
High Metacognition	11	16.55 (1.7)	0
Intermediate Metacognition	9	12.44 (2.9)	9
Low Metacognition	21	10.43 (2.1)	0

Table 2. Group Differences

	Overall Sample (N=41)	High Metacognition (n=11)	Intermediate Metacognition (n =9)	Low Metacognition (n =21)	Statistical Significance Test
Gender					0.29, $p=.75$
Male	31	9	6	16	
Female	10	2	3	5	
Race					1.26, $p=.30$
African American	26	5	9	12	
Caucasian	15	6	0	9	
Education					0.85, $p=.44$
Less than HS	15	3	4	8	
HS or beyond	26	8	5	13	
Employment					1.40, $p=.26$
Paid employment	5	1	2	1	
No paid employment	36	10	7	20	
Marital History					1.40, $p=.26$
Never married	15	7	2	6	
Currently/previously married	25	4	7	15	
Age (Mean, SD)	49.4 (7.8)	48.5 (7.7)	50.4 (5.4)	49.4 (9.0)	0.15, $p=.86$
PANSS Total (Mean, SD)	69.3 (15.9)	66.2 (17.3)	78.3 (13.0)	67.0 (15.4)	1.99, $p=.15$
Stigma Resistance (Mean, SD)	14.6 (2.2)	3.3 (0.4)	2.8 (0.3)	2.9 (0.3)	9.49, $p=.001$