

Depression Self-Stigma

A New Measure and Preliminary Findings

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Abstract: It is widely recognized that stigmatization of mental disorders leads stigmatized individuals to avoid treatment altogether or discontinue treatment prematurely. Literature suggests that the impact of stigma may differ by diagnosis; however, previous attempts to measure self-stigma have not been disorder specific. This study sought to develop the Depression Self-Stigma Scale (DSSS) and identify distinct constructs associated with depression self-stigma. Items for the initial administration of the DSSS were developed through careful review of existing measures and the literature on stigma and depression. Items were administered to undergraduates and community members with self-reported depression ($N = 391$). Results indicated 5 factors (general self-stigma, secrecy, public stigma, treatment stigma, and stigmatizing experiences) with good factor structure, internal consistency, and evidence for construct validity.

Key Words: Stigma, depression, Scale development.

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It is widely recognized that stigmatization of mental disorders leads stigmatized individuals to avoid treatment altogether or discontinue treatment prematurely (Corrigan, 2005; Satcher, 1999; Sirey et al., 2001). In fact, such recognition led the President's New Freedom Commission on Mental Health in 2003 to call for a national campaign to reduce mental illness stigma. Major governmental, activist, and advocacy organizations subsequently created and disseminated numerous antistigma programs around the country. A critical element behind research efforts to understand stigma, understand the relation between stigma and outcomes such as treatment seeking, and develop and evaluate effective antistigma programs that increase treatment seeking is the development of reliable and valid measures of stigma (Link et al., 2004) based on an empirical scientific theoretical model of

stigma. In this regard, several important issues need to be considered.

First, an important distinction should be made between public stigma (negative attitudes about mental illness and treatment held by the general public) and self-stigma (those same attitudes internalized and held by individuals with the stigmatized condition), although public and self-stigma are likely to interact with and augment each other (Corrigan and Watson, 2002). In particular, some have suggested that self-stigma may mediate the relation between public stigma and treatment seeking in that (a) public stigma leads to self-stigma, and (b) self-stigma leads to decreased treatment seeking through a variety of pathways, e.g., avoidance of the institutions (mental health settings) that mark one as a member of a stigmatized group in an effort to avoid or deny that status (Vogel et al., 2007). The relations between these variables, however, may be quite complex. For example, Corrigan (2005) has suggested that label avoidance, which stems from an individual's awareness of the public stigma and desire to avoid it, may be an additional variable influencing treatment seeking. Although most measurement attempts have focused on public stigma, several measures of self-stigma have been developed, including Link's measure of rejection experiences (Link et al., 1997), Link's measures of coping orientations and stigma-related feelings (Link et al., 1987, 2002), the Internalized Stigma of Mental Illness scale (ISMI) (Ritsher et al., 2003), and the Self-Stigma of Mental Illness Scale (SSMIS) (Corrigan et al., 2006).

Second, the problem of stigma, and its relation to treatment seeking, may differ by diagnosis (Corrigan, 2005). For example, it is known that higher levels of public stigma exist toward certain diagnostic groups, such as those with psychotic disorders, compared with other groups, such as those with anxiety or depression, and stigma is a large barrier to medication adherence for psychotic individuals (e.g., Angermeyer and Matschinger, 2003; Gaebel et al., 2006). That said, stigma nonetheless impedes adherence to medication treatment for depressed individuals as well (Sirey et al., 2001). However, previous attempts to measure self-stigma have not been disorder specific, and all have focused on chronically mentally ill populations, often with multiple diagnoses including severe diagnoses such as psychosis or bipolar disorder.

Furthermore, although this is quite obvious, different disorders are characterized by distinct etiologies, symptom profiles, prognoses and treatment implications, and anti-

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stigma programs may benefit from tailoring their messages to specific disorders. For example, one recent study found that an antistigma program on bipolar disorder reduced stigma toward bipolar disorder but this did not generalize to stigma reduction for schizophrenia (Rusch et al., in press).

Unipolar depression, given its prevalence, economic, and societal costs (Keller, 1994; Murray and Lopez, 1996) has been a major target of antistigma programs (e.g., Hickie, 2004; Rochlen et al., 2005). Efforts to understand self-stigma of major depression, however, have been limited. Thus, in this study, we developed the Depression Self-Stigma Scale (DSSS). With it, we hoped to identify and measure self-stigma specifically for unipolar depression and identify and measure related constructs such as public stigma. Thus, we developed an item pool that broadly represented the constructs of interest and conducted an exploratory factor analysis to empirically delineate self-stigma from related constructs and establish relations between these constructs. We also aimed to create a scale that would be sensitive to changes in stigma that may result from exposure to antistigma programs.

We explored the relation between self-stigma and depression severity, and expected positive relations between these constructs as suggested by previous research (Pyne et al., 2004). We included several well-used measures of public stigma—the Attribution Questionnaire-27 (Corrigan et al., 2003) and the Social Distance Scale (Bogardus, 1928; Link, 1987)—both adapted for depression, to allow for initial determination of divergent and convergent validity with these measures. We predicted that these measures should be moderately correlated with our measure of self-stigma because of expected relations between public and self-stigma (e.g., public stigma contributes to self-stigma; Vogel et al., 2007).

We also included a measure of avoidant coping for a test of convergent validity of our measure. We predicted that individuals higher in depression self-stigma and related constructs would also be higher in avoidant coping. Specifically, the known relation between depression and avoidance (Ottenbreit and Dobson, 2004) may be mediated by self-stigma in that depressed individuals may avoid situations specifically because they feel that they cannot talk or show their depression to others as it may lead to more stigmatizing experiences. This relation between avoidant coping and stigma also has important implications for the development of models of how stigma impedes treatment seeking.

Finally, we assessed previous treatment experiences of participants to explore the relation between self-stigma, related constructs, and previous treatment experiences, specifically either antidepressant medication or psychotherapy. Specific hypotheses were not generated here, but we speculated that previous treatment experiences may increase stigma for some individuals.

Data on these predictions are presented below split by gender and ethnicity (specifically, white and African Americans). Regarding gender, previous research has been inconclusive (Angermeyer and Dietrich, 2006), with some research suggesting higher levels of stigma in women and other research suggesting higher levels in men (e.g., Farina, 1981; Wang et al., 2007). The majority of this research was not

focused solely on depression (Angermeyer and Dietrich, 2006), so it was deemed important to address this issue.

Regarding ethnicity, stigma related to depression may be particularly problematic for African Americans. Methodologically sound estimates of the prevalence of depression in African Americans suggest rates as high as 24%. However, only 4% of African Americans receive depression diagnoses (Riolo et al., 2005). When African Americans do seek treatment, they are more likely to use emergency and primary care settings (Hu et al., 1991; Snowden, 1999) and informal sources such as spiritual advisors or healers (Cooper et al., 2001; Cooper-Patrick et al., 2002) and are less likely to use specialized mental health services (Atkinson et al., 1998). Furthermore, after beginning treatment, African Americans terminate after fewer sessions than do whites (Sue and Sue, 1990). Many factors, including stigma, may be responsible for this health disparity.

Most stigma research has been conducted on predominantly white samples, so little is known about stigma in African Americans, including the relations between self-stigma, depression, and treatment seeking. The scant existing research suggests that stigma may play an important role in limiting help seeking among African Americans. Stigmatizing attitudes about mental illness clearly exist in African American communities (Cooper-Patrick et al., 1997; Neighbors and Jackson, 1984). Traditional cultural norms related to past abuses, oppression, and struggles seem to influence individuals to either fight through problems or to use informal therapeutic techniques (Cooper et al., 2001; Cooper-Patrick et al., 2002). Those who publicly acknowledge mental health problems and their families tend to experience rejection or social isolation (Marano, 2003). Thompson et al. (2004) identified several African American beliefs that are barriers to help seeking (e.g., "If I go to psychotherapy it means I am 'crazy'"), which are consistent with the concept of self-stigma. Thus, a final goal of this study was to present results for whites and African Americans, in an effort to stimulate research on stigma and depression in African Americans.

METHODS

Participants and Procedures

This research was approved by the Institutional Review Board of the University of Wisconsin-Milwaukee. Individuals with self-reported depressed mood were recruited from undergraduate psychology courses at the University of Wisconsin-Milwaukee and by advertisements in the Milwaukee community. Course extra credit points were provided for undergraduate study participation and \$20 was provided for community member study participation. Participants were provided the option to complete the survey packet online or paper-and-pencil (which was either provided to the participant during recruitment at the undergraduate course and returned to a drop box in the Psychology Department or mailed to the participant and returned by mail). In both cases, participants first provided informed consent and then completed the questionnaire packet (additional scales not relevant to the current study and not described below were also included).

The sample consisted of 391 participants, 168 undergraduate students and 223 community members. The mean age of undergraduate participants was 20.93 ($SD = 3.38$, range 18–42) years and 75.9% was female. Regarding ethnicity of the undergraduate sample, 77.6% was white, 3.6% African American, 4.8% Mexican American, 1.8% Native American, 9.4% Asian American, and 2.8% other. Regarding depression treatment history in the undergraduate sample, 52.8% had no history of depression treatment, 19.6% had a history of only therapy, 1.8% had a history of only antidepressant medication, and 25.8% had a history of both therapy and antidepressant medication.

The mean age of community participants was 38.00 ($SD = 13.76$, range 18–79) years and 67.6% was female. Regarding ethnicity of the community sample, 64.6% was white, 22.9% African American, 4.0% Mexican American, 1.8% Native American, 1.3% Asian American, and 5.4% other. Regarding depression treatment history in the community sample, 25.1% had no history of depression treatment, 13.7% had a history of only therapy, 7.3% had a history of only antidepressant medication, and 53.9% had a history of both therapy and antidepressant medication.

Scale Development

Items for the initial administration of the DSSS were developed through careful review of existing measures, the literature on stigma and depression, and discussion among the authors. The goal was to develop items that would not only represent negative attitudes about being depressed and being treated for depression held by depressed individuals but also items that would potentially be sensitive to changes that may result from exposure to antistigma campaigns and messages.

We paid particular attention to other measures of self-stigma. The ISMI (Ritsher et al., 2003), SSMIS (Corrigan et al., 2006), and the scales developed by Link and coworkers (1987, 1989, 1997, 2002) all assess the self-stigma of mental illness in general. Although the general content and themes of some of the items were appropriate to identify stigma associated with unipolar depression (e.g., experiences of discrimination, secrecy) and were used to inform item development, many of the specific items were too severe to be used directly for unipolar depression and instead we felt would be more appropriate to adapt for schizophrenia or bipolar disorder. For example, the items "Mentally ill people tend to be violent" from the ISMI, "Most people with mental illness are disgusting" from the SSMIS, and "Most people believe that former mental patients cannot be trusted" from Link et al. (1997) seem to target a chronically mentally ill group or individuals who have been hospitalized. For the DSSS, we were interested in stigma associated with a broad range of depressive profiles, not specifically stigma associated with chronic, severe depression or previous hospitalizations.

A final scale we considered was the Stigma Scale for Receiving Psychological Help for Depression (SSRPH) (Pyne et al., 2004), a 5-item scale assessing the stigma associated with treatment seeking for depression. These items appeared very relevant for our scale, and all 5 items were folded into the DSSS initial item administration.

This process produced an initial pool of 59 items. The scale began with the instructions, "Please answer the following questions using the scale below. Mark the number that most closely corresponds to how you feel." Respondents were provided a 7-point scale ranging from 1 to 7 with 1 labeled "Completely disagree," 2 labeled "Mostly disagree," 3 labeled "Somewhat disagree," 4 labeled "Neither agree nor disagree," 5 labeled "Somewhat agree," 6 labeled "Mostly agree," and 7 labeled "Completely agree."

Measures

Center for Epidemiologic Studies Depression Scale

The Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977) is a 20-item self-report measure that assesses severity of depressive symptoms. Participants rate each item on a 4-point scale with higher scores indicating greater severity of depression. The CES-D has demonstrated moderate test-retest correlations and high internal consistency (Radloff, 1977).

Depression Attribution Questionnaire-27

The Depression Attribution Questionnaire-27 (DAQ-27) is a modified version of the Attribution Questionnaire-27 (Corrigan et al., 2003), a well-used 27-item scale designed to measure stigmatizing attitudes about schizophrenia. In our prior research, we modified this scale to assess attitudes towards individuals with depression, resulting in the DAQ-27 (Rusch et al., in press b). Participants rate each item on a 9-point scale with higher scores indicating higher levels of stigma towards individuals with depression. The DAQ-27 demonstrated good internal consistency in prior research ($\alpha = 0.82$; Rusch et al., in press b) and in the current study ($\alpha = 0.82$).

Depression Social Distance Scale

The Depression Social Distance Scale (DSDS) is a modified version of the Social Distance Scale (SDS) (Link, 1987), a well-used 7-item scale designed to assess social distance towards individuals with mental illness. In stigma research social distance is used to assess behavioral intentions and discrimination against individuals with mental illness (Corrigan et al., 2001; Link et al., 1987; Reinke et al., 2004). In our prior research, we modified this scale to assess behavioral intentions and discrimination against individuals with depression, resulting in the DSDS (Rusch et al., in press a). Participants rate each item on a 4-point scale with higher scores indicating greater social distance. The DSDS demonstrated good internal consistency in prior research ($\alpha = 0.75$; Rusch et al., in press a) and in the current study ($\alpha = 0.86$).

Cognitive Behavioral Avoidance Scale

The Cognitive Behavioral Avoidance Scale (CBAS) is a 32-item self-report measure of avoidant coping (Ottenbreit and Dobson, 2004). Participants rate each item on a 5-point scale, with higher scores indicating greater use of avoidant coping strategies and higher frequency of avoidance behaviors. The CBAS has demonstrated good divergent and convergent validity (Ottenbreit and Dobson, 2004).

Treatment History

As part of the demographics questionnaire, participants' self-reported previous and current therapy and medication treatment (practical constraints precluded collecting this history in a more valid manner, i.e., chart review). Specifically, participants were asked "Have you ever been in therapy for depression? If yes, are you currently?" and "Have you ever taken medication for depression? If yes, are you currently?"

RESULTS

Initial data screening indicated no items with extreme skew, kurtosis, or restricted range so all items were kept for subsequent analyses without transformation.

Factor Analysis

We took an exploratory approach to identifying the number of factors to extract, carefully examining several factor models, and emphasizing the interpretability of the solutions. To estimate the number of factors to extract, a parallel analysis (as per Hayton et al., 2004) was conducted. A benefit of parallel analysis is that it eliminates the subjectivity associated with visual inspection of scree plots (Kaiser, 1970). Consistent with Hayton et al. (2004) recommendations, 50 random data sets involving the same number of items and participants as the actual data set were created and eigenvalues were extracted from these data sets using principal components analysis. These eigenvalues were averaged, displayed in a scree plot, and compared with the actual factored data collected for this study. The point at which the eigenvalues for the actual data dropped below the averaged eigenvalues for the random data sets indicated the number of factors to be extracted. This indicated a 9-factor solution. Traditional scree-plot analysis also indicated a 9-factor solution.

We then conducted an exploratory factor analysis using maximum likelihood extraction and promax rotation setting the number of factors to extract at 9, but we also examined a 7-factor and 8-factor model as well under those same conditions. The 9-factor solution resulted in the most interpretable factors. However, we then dropped 4 of these factors because they were either too small in number (e.g., consisted of 2 items) or appeared to measure a construct distinct from stigma (e.g., overlapped considerably with the symptoms of depression). To further reduce the number of items, pattern factor loadings of 0.40 or higher were considered meaningful so items with loadings of less than 0.40 on all factors were excluded. Items with secondary factor loadings above 0.30 were considered to have double loadings and were also excluded. Finally, items that diverged in content from other factor items or were redundant with other factor items were also excluded. This process resulted in 32 total items across 5 factors.

Table 1 presents the item factor loadings for these 32 items. The first factor was labeled General Self-Stigma (9 items) and appeared to represent negative stigmatizing attitudes held by the respondent, and perceived negative stigmatizing attitudes of others that have been internalized by the respondent, related to his or her own depression. The second

factor was labeled Secrecy (9 items) and appeared to represent a tendency of the respondent to hide his or her depression from others in a variety of contexts. The third factor was labeled Public Stigma (4 items) and appeared to represent negative attitudes held by the respondent about other depressed individuals (compared with him/herself as represented by the General Self-Stigma factor). The fourth factor was labeled Treatment Stigma (4 items) and appeared to represent negative stigmatizing attitudes about receiving treatment for depression. The fifth factor was labeled Stigmatizing Experiences (6 items) and appeared to represent past experiences of the respondent in which they felt stigmatized because of disclosing or experiencing depression.

Scale Properties

Table 2 presents total and subscale means and standard deviations for the total sample and split by gender and ethnicity. Total and subscale scores were computed as unweighted sums of items comprising the total and each subscale (item 7 was reverse coded). Only whites and African Americans are presented for ethnicity due to very small numbers in the other categories. Men compared with women demonstrated significantly higher scores on the DSSS total, $F(1, 386) = 6.15, p = 0.014$, and Public Stigma, $F(1, 386) = 7.88, p = 0.005$. African Americans compared with whites demonstrated significantly higher depression scores, $F(1, 298) = 6.69, p = 0.010$, and higher scores on the DSSS total, $F(1, 331) = 4.88, p = 0.028$, General Self-Stigma, $F(1, 331) = 8.74, p = 0.003$, and Public Stigma, $F(1, 331) = 6.73, p = 0.010$. After controlling for depression severity, however, differences on DSSS scales were no longer significant.

The internal consistencies of the DSSS total score and subscales were assessed using Cronbach's α . The total score demonstrated high internal consistency ($\alpha = 0.95$). The internal consistency for each subscale was also acceptable: General Self-Stigma $\alpha = 0.93$, Secrecy $\alpha = 0.80$, Public Stigma $\alpha = 0.86$, Treatment Stigma $\alpha = 0.79$, and Stigmatizing Experiences $\alpha = 0.92$. Item-total correlations were 0.64 to 0.79 for General Self-Stigma, 0.44 to 0.76 for Secrecy, 0.62 to 0.79 for Public Stigma, 0.47 to 0.71 for Treatment Stigma, and 0.66 to 0.83 for Stigmatizing Experiences.

Table 3 presents the correlations among the DSSS scales. All subscales correlated significantly with the total scale score and with each other. In decreasing order, the subscales most related to the total scale score were General Self-Stigma ($r = 0.87$), Stigmatizing Experiences ($r = 0.87$), Secrecy ($r = 0.77$), Treatment Stigma ($r = 0.64$), and Public Stigma ($r = 0.54$). Thus, given the high internal consistency of the total scale, we suggest that it does measure, primarily, self-stigma but also includes related constructs, all of which correlate moderately to highly with the total scale and General Self-Stigma subscale.

Construct Validity

Table 3 also presents correlations between DSSS scales and other scales. Initial construct validity was established through significant correlations in the expected directions between the DSSS total and the CES-D ($r = 0.467$) and CBAS ($r = 0.586$), suggesting that depression self-stigma is

TABLE 1. Pattern Factor Loadings for Depression Self-Stigma Scale Items (N = 391)

	Item	Factor				
		1	2	3	4	5
25	Others view me as unable to care for myself because I am depressed	1.07	-0.00	-0.16	0.00	-0.06
26	Others view me as unable to handle responsibility because I am depressed	0.96	-0.02	-0.19	0.01	-0.00
27	Others think I am not worth the investment of time and resources because I am depressed	0.86	-0.04	0.10	0.03	-0.10
24	Others view me as morally weak because I am depressed	0.69	0.03	0.02	0.08	0.03
31	People have told me that becoming depressed is what I deserve from how I live my life	0.59	-0.16	0.26	-0.08	0.19
28	People's attitudes about depression make me feel worse about myself	0.59	0.19	-0.09	0.14	-0.02
29	Some people who know I have depression have grown more distant	0.50	0.03	-0.15	0.08	0.21
30	Since becoming depressed, I worry about people discriminating against me	0.49	0.15	-0.03	-0.05	0.17
32	When people learned I was depressed, they looked for flaws in my character	0.48	-0.01	0.04	0.07	0.23
12	I am very careful about who I tell about having depression	-0.07	0.84	-0.05	-0.09	0.12
10	I work hard to keep my depression a secret	0.01	0.81	0.18	-0.08	-0.02
6	In order to get a job, I would have to hide my depression	0.12	0.72	-0.10	-0.03	-0.07
5	When I meet people for the first time, I make a special effort to keep the fact that I am depressed to myself	0.07	0.69	-0.03	-0.02	-0.06
9	Telling someone I have depression is risky	-0.01	0.68	0.05	0.05	0.04
8	In many areas of my life, no one knows I am depressed	-0.08	0.66	0.05	-0.15	-0.06
13	I worry that people may judge me when they find out I am depressed	0.00	0.61	0.16	0.11	0.12
7	There is no reason for me to hide the fact that I am depressed	0.16	-0.51	0.04	-0.06	0.06
11	It is easier to avoid new relationships than worry about telling someone that I have depression	0.04	0.42	0.09	0.01	0.14
23	Other people with depression are not worth the time and resources	0.05	-0.16	0.72	-0.03	0.08
22	Everyone can plainly see that other depressed people are inferior	0.14	-0.04	0.70	0.03	0.02
20	Other people with depression are morally weak	0.05	-0.03	0.67	-0.00	0.01
21	I do not want to live next door to another depressed person	-0.08	-0.06	0.59	-0.05	-0.02
2	People will see a person in a less favorable way if they come to know that he/she has received treatment for depression	0.07	-0.05	0.01	1.01	-0.04
1	Receiving treatment for depression carries social stigma	-0.09	-0.05	-0.02	0.62	-0.05
4	People tend to like less those who are receiving professional help for depression	-0.07	-0.01	0.15	0.62	0.01
3	It is advisable to hide from people that he/she has been treated for depression	0.03	-0.03	0.16	0.49	0.08
16	I regret having told some people that I am depressed	0.04	0.07	0.02	-0.01	0.85
17	As a rule, telling other people that I am depressed was a mistake	0.02	0.16	0.15	-0.03	0.77
14	I have been hurt by how people reacted to learning that I am depressed	0.10	0.07	-0.09	0.11	0.73
19	I have stopped socializing with some people because of their reactions to my being depressed	0.30	-0.14	-0.05	-0.04	0.67
15	I worry that people who know I am depressed will tell others	-0.14	0.37	0.12	0.05	0.57
18	People I cared about stopped calling after learning I was depressed	0.42	-0.09	-0.02	-0.06	0.54

TABLE 2. Means and Standard Deviations for CES-D and DSSS by Gender and Ethnicity

	Gender						Ethnicity			
	Total (N = 357-391)		Men (n = 110-112)		Women (n = 254-276)		Whites (n = 249-276)		African Americans (n = 51-57)	
	M	SD	M	SD	M	SD	M	SD	M	SD
CES-D	25.43	9.41	24.42	9.00	25.92	9.54	24.53 ^b	9.20	28.22 ^b	9.63
DSSS total	117.33	35.45	124.32 ^a	32.79	114.63 ^a	35.69	114.91 ^a	35.04	126.28 ^a	37.02
General self-stigma	28.58	13.26	30.58	12.42	27.81	13.52	27.62 ^b	12.78	33.32 ^b	15.37
Secrecy	42.64	11.52	44.29	10.35	42.08	11.15	42.19	11.43	44.02	12.74
Public stigma	8.88	5.49	10.09 ^b	6.11	8.38 ^b	5.15	8.27 ^b	5.14	10.30 ^b	6.41
Treatment stigma	14.53	5.58	15.37	5.24	14.24	5.67	14.59	5.57	14.23	5.85
Stigmatizing experiences	22.68	9.63	24.00	8.94	22.13	9.84	22.25	9.72	24.42	9.62

^aComparison $p < 0.05$; ^bComparison $p < 0.01$.

TABLE 3. Correlations Between DSSS Subscales and Other Scales

	1	2	3	4	5	6	7	8	9
1. DSSS Total	1								
2. General self-stigma	0.870**	1							
3. Secrecy	0.766**	0.459**	1						
4. Public stigma	0.543**	0.530**	0.138**	1					
5. Treatment stigma	0.639**	0.447**	0.450**	0.300**	1				
6. Stigmatizing experiences	0.867**	0.696**	0.638**	0.349**	0.434**	1			
7. CES-D	0.467**	0.431**	0.376**	0.191**	0.308**	0.380**	1		
8. CBAS	0.586**	0.539**	0.431**	0.376**	0.369**	0.467**	0.567**	1	
9. DAQ-27	0.217**	0.218**	0.067	0.353**	0.189**	0.110	0.181**	0.200**	1
10. DSDS	0.255**	0.169**	0.199**	0.281**	0.216**	0.172**	0.098	0.127*	0.590**

* $p < 0.05$; ** $p < 0.01$.

related to depression severity and avoidant coping. Correlations were smaller but significant between the DSSS total and other measures of public stigma that were developed for more severe mental illness but adapted for depression (DAQ-27 $r = 0.217$, DSDS $r = 0.255$), suggesting that the DSSS is related to but distinct from these other measures. As expected, the DAQ-27 and DSDS correlated highest with public stigma subscale (r 's = 0.353 and 0.281, respectively), but still only moderately, highlighting the distinction between disorder-specific public stigma from generic mental illness public stigma. Importantly, correlations between these other stigma measures and our measures of depression severity and avoidant coping were smaller than the correlations obtained between the DSSS and depression and avoidant coping, suggesting that the DSSS is more meaningfully related to these constructs than are the DAQ-27 and DSDS.

Predictors of Previous Treatment Experiences

Separate binary logistic regression analyses were run predicting whether the respondents were ever in therapy (= 1) versus never in therapy (= 0) and ever on medication (= 1) versus never on medication (= 0) as treatments for depression. Predictors included gender (female = 0), age in years, race (white = 0), depression severity, and scores on the 5 DSSS subscales. The results of these analyses are summarized in Table 4. The first model ($N = 345$), predicting ever being in therapy, correctly classified 66% of the respondents with a Nagelkerke R-square of 0.20. The odds of being in therapy were greater for females relative to males, increased slightly as age increased and as depression severity increased. Persons in the "Other" category for race were less likely to have ever been in therapy relative to whites, whereas no difference was noted between whites and African Americans. Scores on the 5 DSSS subscales were not significantly associated with therapy status.

The second model ($N = 346$), predicting ever being on medication, correctly classified 69.7% of the cases and had a Nagelkerke R-square of 0.25. The odds of being on medication were greater for females relative to males; increased as age, depression severity, and scores on the Treatment Stigma subscale increased; but decreased as scores on the Public Stigma subscale increased. The remaining predictors were not significantly associated with medication status.

TABLE 4. Summary of Logistic Regression Analyses for Variables Predicting Ever Versus Never in Therapy or on Medication ($N = 345$)

	<i>B</i>	<i>SE</i>	<i>p</i>	Adjusted Odds Ratio	95% CI
Dependent variable = ever in therapy (ever = 1)					
Gender ^a					
Female	-0.62	0.28	0.025	0.54	0.31-0.93
Age in years	0.05	0.01	<0.001	1.05	1.03-1.07
Race ^a					
African American	-0.40	0.33	0.232	0.67	0.35-1.29
Other	-1.58	0.38	<0.001	0.21	0.10-0.43
CES-D total score	0.06	0.02	<0.001	1.06	1.03-1.09
General self-stigma	0.01	0.02	0.637	1.01	0.98-1.04
Secrecy	-0.00	0.01	0.918	1.00	0.97-1.03
Public stigma	-0.03	0.03	0.233	0.97	0.92-1.02
Treatment stigma	0.00	0.03	0.960	1.00	0.95-1.06
Stigma experiences	-0.02	0.02	0.466	0.99	0.95-1.03
Dependent variable = ever on medications (ever = 1)					
Gender ^a					
Female	-0.80	0.29	0.006	0.45	0.26-0.80
Age in years	0.05	0.01	<0.001	1.05	1.03-1.07
Race ^a					
African American	0.44	0.35	0.212	0.65	0.33-1.28
Other	-0.51	0.36	0.160	0.60	0.30-1.22
CES-D total score	0.06	0.02	<0.001	1.06	1.03-1.09
General self-stigma	0.02	0.02	0.322	1.02	0.99-1.05
Secrecy	-0.00	0.01	.923	1.00	0.97-1.03
Public stigma	-0.08	0.03	.005	.92	0.87-0.98
Treatment stigma	0.06	0.03	.030	1.06	1.06-1.12
Stigma experiences	-0.02	0.02	.347	.98	0.94-1.02

^aBase category for gender was male and for race was white.

CES-D indicates Center for Epidemiological Studies-Depression Scale.

DISCUSSION

A critical element necessary to study depression stigma, understand the relation between stigma and treatment seeking for depression, and develop and evaluate antistigma programs for depression is the development of a theoretical model of depression self-stigma and a reliable and valid

measure of depression self-stigma (Link et al., 2004). Theory building should proceed through both exploratory empirical analyses and theory-driven analyses. The current project begins this effort with an exploratory empirical analysis of constructs related to depression self-stigma and initial development of a scale to measure these constructs. Exploratory factor analysis lends preliminarily support for a 32-item DSSS, resulting in 5 subscales with good fit and high internal consistency. Small but significant correlations with the Attribution Questionnaire-27 (Corrigan et al., 2003) and the Social Distance Scale (Link, 1987), both revised in previous research for depression (Rusch et al., in press a; Rusch et al., in press b), suggest that the DSSS measures a useful, distinct construct, and may be more useful as a specific measure of depression stigma than are revised versions of existing scales. The strength of this study is that individuals who perceived themselves to be depressed were recruited for participation; this resulted, however, in not all participants demonstrating elevated depressive symptoms using established measures. Future research would benefit from administering the DSSS to clinically depressed samples.

The DSSS subscales identify several related but distinct constructs that may be helpful in understanding depression self-stigma and theory building. Analyses suggest that depressed individuals endorse both public stigma (negative attitudes about other depressed individuals; the Public Stigma subscale) and self-stigma and that self-stigma is a complex construct with a variety of negative consequences associated with it. Regarding self-stigma, the subscale that accounted for the most variance and which correlated most highly with the total scale was labeled General Self-Stigma (although other subscales also correlated highly). The predominant model suggests that self-stigma develops through a process of internalizing public stigmatizing attitudes (Link and Phelan, 2001), and items on the General Self-Stigma subscale seem to represent this process. The high correlations between several of the subscales suggests that people with high self-stigma report experiencing a variety of negative stigmatizing experiences because of being depressed (the Stigmatizing Experiences subscale), work to hide their depression from others in a variety of contexts (the Secrecy subscale), and endorse negative attitudes and beliefs about receiving treatment for depression as well (the Treatment Stigma subscale).

This suggests that self-stigma and depression may work in a vicious cycle—as individuals become depressed, they experience stigma firsthand and internalize the public negative attitudes (which seem to be higher for men). They also work hard to avoid talking to others about their depression, resulting in increased social isolation, which counterproductively may increase depression (Joiner and Coyne, 1999). Finally, the ultimate consequence may be avoidance of seeking treatments for depression that may be effective in alleviating the condition. Evidence in support of this speculative model comes from significant correlations between DSSS subscales and other measures: As stigma increases, so does both the tendency to use avoidant coping strategies and depression severity. Future research may test this model of self-stigma and its consequences more specifically.

When examining the DSSS using only the data from the African American participants ($n = 65$) similar alpha levels emerged. Furthermore, African Americans demonstrated higher levels of total stigma, self-stigma and public stigma, and higher levels of depression severity. This again suggests the complex interplay between depression and stigma and highlights the importance of addressing these conditions in African Americans. It also is important to note that African Americans encounter unique obstacles that may, in turn, impact stigma differently in this population. For example, many African Americans assume the depression is a “White” disorder and a strong emphasis on religious coping results in less treatment seeking from mental health specialists (Marrano, 2003). The DSSS currently does not include questions related to religion and stigma, which may be necessary to include for a full assessment of stigma within the African American community. In addition, although the current study demonstrates high internal consistency for the subscales with African American participants, the sample was not sufficient to test the factor structure. Future research is necessary to modify and validate the factor structure with a depressed African American sample.

Interestingly, stigma was not related to having ever been in psychotherapy in this sample but was related to having ever taking antidepressant medications. Specifically, individuals who had ever taken antidepressant medications were more likely to report higher levels of treatment stigma (these individuals were also more likely to be female, older, and more severely depressed). The current study cannot provide any indication of the direction of causality of this relationship. It may be the case that taking antidepressant medications increases treatment stigma. In fact, previous research suggests that women who take antidepressant medications change how they view their depression to conform with medication’s underlying biological model (Gammell and Stoppard, 1999), and biological explanations of depression have been shown to increase stigma for some individuals (Rusch et al., in press b). On the other hand, it is plausible that those who believe seeking treatment for depression is more stigmatizing may be more likely to choose medication as the sole treatment option. Both causal relations also may be true. This analysis was exploratory and a priori hypothesis-driven replication of the current result is necessary. Furthermore, the analysis was limited by the single-item assessments of self-reported treatment seeking. Future research may attempt to establish temporal relations between treatment seeking and stigma in prospective research using more established measures of treatment seeking.

The current factor structure of the DSSS and construct validity relations are promising and indicate a reliable and valid measure of self-stigma of depression and related constructs. Additional research investigations, including confirmatory factor analyses, an assessment of test-retest reliability, additional examinations of convergent, divergent, and predictive validity are necessary. Furthermore, as the current study employed a self-report measure of depression severity, future research may include better attempts to ascertain the diagnosis of depression and related conditions.

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