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## The association of depression stigma with barriers to seeking mental health care: a cross-sectional analysis

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### ABSTRACT

**Background:** Stigma is one of several barriers to seeking mental health care. However, few studies have examined how stigma relates to other common barriers (e.g. attitudes about treatment, cost, time).

**Aims:** This study investigated whether depression stigma (internalized or perceived) was related to other treatment-seeking barriers (attitudinal, structural) and whether depression severity influenced the strength of the association.

**Methods:** We used multivariable-adjusted linear regression to model barrier outcomes as a function of internalized and perceived stigma in an undergraduate population ( $N = 2551$ ). We evaluated potential effect modification by depression severity using likelihood-ratio tests.

**Results:** Internalized stigma displayed a stronger association with overall barriers to care (including perceived need, negative treatment expectations, and structural barriers) than did perceived stigma. Higher internalized stigma predicted a stronger emphasis on each barrier to treatment measured. Sub-components of internalized stigma (e.g. alienation, stereotype endorsement) uniquely predicted a greater emphasis on distinct barriers.

**Conclusions:** Internalized stigma is strongly linked to greater perception of barriers to mental health care. It may be necessary to address stigma and barriers concurrently rather than independently.

### ARTICLE HISTORY

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### KEYWORDS

Depression; treatment barriers; stigma; depression severity

### Introduction

Improving people's willingness to seek treatment for depression is an urgent public health problem. In 2016, 37% of U.S. adults who experienced a major depressive episode did not utilize any form of mental health care (National Institute of Mental Health, 2017). Untreated depression is the leading cause of disability worldwide as well as a major risk factor for suicide, which is the 10th leading cause of death in the U.S. (Chesney, Goodwin, & Fazel, 2014; Murphy, Xu, Kochanek, Curtin, & Arias, 2017; World Health Organization, 2018). Numerous factors influence willingness to seek treatment, including attitudinal barriers (e.g. attitudes about treatment, perceived need for treatment; Abe-Kim et al., 2007; Alegria et al., 2007; Gonzalez et al., 2010; Vogel, Heimerdinger-Edwards, Hammer, & Hubbard, 2011), structural barriers (e.g. cost, transportation, time; Kouyoumdjian, Zamboanga, & Hansen, 2006; Kung, 2004; Mojtabai et al., 2011), and concerns with being stigmatized (Cooper, Corrigan, & Watson, 2003; Corrigan, Druss, & Perlick, 2014). However, it remains unclear how, if at all, these disparate barriers affect one another. The goal of this investigation was to determine whether stigma exacerbates

the effect of other barriers on respondents' intentions to seek mental health treatment.

Stigma, which refers to any attribute that reduces someone "from a whole and usual person to a tainted, discounted one" (Goffman, 1963), has highly negative outcomes for its targets (Major & O'Brien, 2005). Mental illness is one of the most stigmatized conditions a person can have (Hinshaw, 2015), and is associated with robust and pervasive bias (Corrigan, 2004). Stigma is often examined in two forms: perceived stigma, the individual's beliefs about the public's stigmatizing views, and internalized stigma, the self-application of these views if the individual has a mental illness (Corrigan & Watson, 2002). In a cross-sectional study including 1312 adults, Barney, Griffiths, Jorm, and Christensen (2006) found that while both types of stigma were associated with reduced likelihood to seek treatment for depression from professional sources, internalized stigma was a stronger predictor than perceived stigma. Similarly, in a systematic review of studies that examined stigma as a barrier to treatment, Clement et al. (2015) found that internalized mental-health-related stigma was negatively associated with help-seeking (mean Cohen's  $d$ :  $-0.23$ ), whereas perceived stigma was not (mean Cohen's  $d$ :  $-0.02$ ).

Internalized, but not perceived, stigma has also been associated with reduced help-seeking among college students (Eisenberg, Downs, Golberstein, & Zivin, 2009; Golberstein, Eisenberg, & Gollust, 2008, 2009). Together these studies suggest that although people with mental illness may be aware of the public's stigma, internalizing those beliefs may influence their decisions to seek treatment more.

In addition to internalized stigma, structural barriers – for example, cost of treatment, clinic location, – and attitudinal barriers – for example, perceived need for treatment and embarrassment if their help-seeking were discovered – have been widely shown to reduce individuals' willingness to seek mental health treatment (Busby & Sajatovic, 2010; Chakraborty, Avasthi, Kumar, & Grover, 2009; Mohr et al., 2010; Schomerus et al., 2012; ten Have et al., 2010). These barriers have primarily been examined independently. In so doing, these studies have shown that each barrier on its own reduces treatment-seeking, but it has yet to be explored whether these barriers interact with one another. Specifically, we examined whether internalized stigma magnifies the prominence of other barriers. Addressing this question could provide a more comprehensive picture of how stigma interferes with treatment-seeking.

There are several reasons to predict that stigma might magnify other barriers. First, individuals may be unaware of or unwilling to admit that stigma is affecting their treatment decisions. Indeed, individuals are often inaccurate in understanding and reporting the true causes of their behavior (Nisbett & Wilson, 1977). For many individuals, it may seem more acceptable for them to attribute their treatment decision to practical factors (structural, attitudinal) than with concerns about what others might think. Indeed, cognitive dissonance theory (Festinger, 1962) stems from the finding that people are compelled to resolve competing cognitions. For example, the desire to get better conflicts with the fear of being rejected and stigmatized. For many individuals, stigma may not seem a suitable justification to reject treatment, whereas not having the time or money might be. If this were the case, then we would expect stigma to negatively predict willingness to seek treatment by magnifying the relative importance of other barriers.

Related to this point, different aspects of internalized stigma may influence unique barriers. Widely used measures of internalized stigma, such as the Internalized Stigma of Mental Illness Scale (Ritsher, Otilingam, & Grajales, 2003), have identified distinct subcomponents of internalized stigma, including alienation (the extent to which individuals would feel socially rejected if they had mental illness), stereotype endorsement (the extent to which individuals agree with stereotypes about mental illness), and stigma resistance (the extent to which individuals reject negative stereotypes about mental illness). Because belonging is a fundamental human need (Baumeister & Leary, 1995), alienation might have a larger impact on other barriers to treatment than do stereotype endorsement or stigma resistance.

An important consideration in understanding how stigma might interact with other barriers to disrupt treatment-seeking is symptom severity. Previous studies have found that

symptom severity displays a significant positive relationship with both perceived and internalized stigma (Livingston & Boyd, 2010; Pyne et al., 2004). Mohr et al. (2010) noted that individuals with major depression were more likely to endorse barriers such as cost, availability of services, and negative evaluation of therapy as preventing them from seeking mental health care. However, it is important to note that depression severity is a strong predictor of seeking mental health care even after accounting for these factors (Aromaa, Tolvanen, Tuulari, & Wahlbeck, 2011; Golberstein et al., 2008). Understanding whether depression severity influences the relationship between depression stigma and other barriers to care could highlight important avenues of intervention to improve treatment-seeking prior to symptoms becoming severe.

This study examined three research hypotheses: (1) Extending prior work (Clement et al., 2015), internalized stigma will be a stronger predictor of barriers to seeking mental health care than perceived stigma, (2) Alienation will be a stronger predictor of barriers than other components of internalized stigma and (3) Depression severity modifies the relationship of depression stigma and barriers to care.

## Methods

### Study population

This study utilized survey data obtained from undergraduates enrolled in an introductory psychology course at a large Midwestern university in fall 2014 and 2016. Participants completed the survey in exchange for partial course credit. Complete data were obtained from 1298 students in 2014 and 1153 in 2016. Means and frequencies were similar across both years, so we combined the populations for a total sample size of 2551 students. Participants were predominantly female (62.8%; 37.2% male), White (74.8%; 9.2% Hispanic/Black, 9.1% East Asian, 7.0% Other Race), born in the U.S. (86.8%; born outside of the U.S. 13.2%), and from a Western cultural background (89.0% were born in the U.S. or identified as White or Hispanic; Non-western cultural background 11.0%) (Table 1). Before exclusions, 24.6% of the study population had a PHQ-9 score  $\geq 10$ , indicating moderate to severe depressive symptoms. The Indiana Institutional Review Board approved the protocol (#1207009056), and participants provided consent before completing the surveys.

### Assessment of depression stigma

Perceived stigma was assessed using the perceived devaluation and discrimination scale (PDDS) (Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001). This widely used 12-item questionnaire includes questions such as “Most people would willingly accept a former depressed individual as a close friend,” and “Most employers will pass over the application of a former depressed individual in favor of another applicant.” For this study, the scale was modified to refer specifically to depression. Reliability for the modified

**Table 1.** Means (SD) or *N* (%) of demographics, stigma levels and ratings of barriers to mental health care.

	2014	2016	Combined
Total	1398	1153	2551
Gender			
Male	544 (38.9%)	404 (35.0%)	948 (37.2%)
Female	854 (61.1%)	749 (65.0%)	1603 (62.8%)
Race			
White	1054 (75.4%)	853 (74.0%)	1907 (74.8%)
Hispanic/Black	125 (8.9%)	109 (9.5%)	234 (9.2%)
East Asian	129 (9.2%)	103 (8.9%)	232 (9.1%)
Other Race	90 (6.4%)	88 (7.6%)	178 (7.0%)
Born in the U.S.			
Yes	1227 (87.8%)	988 (85.7%)	2215 (86.8%)
No	171 (12.2%)	165 (14.3%)	336 (13.2%)
Cultural background			
Non-Western	144 (10.3%)	136 (11.8%)	280 (11.0%)
Western	1254 (89.7%)	1017 (88.2%)	2271 (89.0%)
English as a primary language			
Yes	1225 (87.6%)	979 (84.9%)	2204 (86.4%)
No	173 (12.4%)	174 (15.1%)	347 (13.6%)
Depression severity (categorical)			
Mild depression	787 (56.3%)	594 (51.5%)	1381 (54.1%)
Moderate depression	370 (26.5%)	316 (27.4%)	686 (26.9%)
Moderately severe–severe depression	241 (17.2%)	243 (21.1%)	484 (19.0%)
Depression severity (continuous) <sup>a</sup>	10.2 (4.73)	10.69 (4.91)	10.4 (4.82)
Internalized stigma score <sup>b</sup>	2.13 (0.38)	2.02 (0.41)	2.08 (0.40)
Alienation <sup>b</sup>	2.55 (0.46)	2.48 (0.55)	2.52 (0.50)
Stereotype endorsement <sup>b</sup>	1.95 (0.54)	1.81 (0.53)	1.89 (0.54)
Stigma resistance <sup>b</sup>	3.03 (0.56)	3.15 (0.59)	3.08 (0.58)
Perceived stigma score <sup>c</sup>	3.44 (0.75)	3.05 (0.85)	3.26 (0.82)
Overall barrier endorsement <sup>d</sup>	2.56 (0.63)	2.59 (0.66)	2.57 (0.64)
Low perceived need <sup>d</sup>	3.39 (0.74)	3.44 (0.79)	3.41 (0.77)
Negative help-seeking attitudes <sup>d</sup>	2.91 (1.02)	2.97 (1.04)	2.94 (1.02)
Negative treatment expectations <sup>d</sup>	2.25 (0.96)	2.13 (0.96)	2.20 (0.96)
Structural barrier concerns <sup>d</sup>	1.98 (0.92)	2.08 (0.93)	2.02 (0.92)

<sup>a</sup>Range: 1–27.<sup>b</sup>Range: 1–4.<sup>c</sup>Range: 1–6.<sup>d</sup>Range: 1–5.

SD: Standard deviation.

version was good (Cronbach's  $\alpha = 0.85$ ). Response options ranged from 1 (strongly disagree) to 6 (strongly agree). Internalized stigma was assessed using a version of the internalized stigma of mental illness scale (ISMI) (Ritsher et al., 2003), a widely used measure of internalized stigma. The scale was modified to refer to depression specifically and only included 18 items out of the original 29 including questions related to alienation (e.g. "I would be embarrassed or ashamed if I had depression"), stereotype endorsement (e.g. "People with depression tend to be violent."), and stigma resistance (e.g. "Living with depression makes people tough survivors."). Because participants in this study included individuals who were and were not depressed, we excluded the 11 items on the scale that would only be

relevant for individuals who identified as being depressed (e.g. discrimination due to depression). Reliability of the modified scale was good (Cronbach's  $\alpha = 0.84$ ). Response options ranged from 1 (strongly disagree) to 4 (strongly agree).

Overall scores were calculated for internalized stigma and perceived stigma by taking the average over all responses for each scale. Additionally, we calculated scores for the alienation, stereotype endorsement, and stigma resistance factors of the ISMI for exploratory analyses to determine whether specific aspects of internalized stigma were more strongly linked to barriers to seeking mental health care.

### Assessment of barriers to seeking mental health care

Barriers to seeking mental health care were assessed using the barriers to care checklist (BCC), a widely used 18-item scale that measures how much certain barriers factor into why an individual would not seek mental health treatment (Vanheusden et al., 2008). Vanheusden et al. (2008) developed the scale by compiling a list of barriers that were cited by patients as reasons why they did not seek mental health treatment (Hornblow, Bushnell, Wells, Joyce, & Oakley-Browne, 1990; Meadows, Harvey, Fossey, & Burgess, 2000; Wells, Robins, Bushnell, Jarosz, & Oakley-Browne, 1994). The BCC consists of items that address two key barrier domains: attitudinal barriers and structural barriers. Barriers examined by this scale included: "I wanted to solve problems on my own"; "I found it hard to talk about personal problems"; "I did not think treatment would help"; and "I could not afford treatment" (Full questionnaire in Appendix I). Participants were asked to score each barrier on a scale of 1 (not at all)–5 (very much). Reliability of the scale was good for our population (Cronbach's  $\alpha = 0.86$ ). Overall barrier scores were calculated by taking the average of all responses for each participant.

### Assessment of depression severity

Depression severity was assessed using the patient health questionnaire-9 (PHQ-9) (Kroenke & Spitzer, 2002). The PHQ-9 is one of the best-validated depression measures used in over 1000 research studies (Kroenke, Spitzer, Williams, & Lowe, 2010). The PHQ-9 consists of nine items measuring how often they were bothered by depressive symptoms over the past two weeks ("Little interest or pleasure in doing things") rated on a scale of 0 (not at all) to 3 (nearly every day). Total severity score was calculated by summing all nine responses.

### Demographics

Participants self-reported their gender, race and ethnicity, whether they were born in the U.S., and if English was their primary language.

## Exclusions

The initial sample included 5984 students. We restricted the analysis to students who reported at least mild depressive symptoms (PHQ-9 score of at least 5) which excluded 2945. (Kroenke & Spitzer, 2002). We excluded an additional 448 students who were missing data on stigma, barriers to seeking mental health care, or depression severity (see [Supplemental material](#)). Finally, 40 students were excluded due to missing data on their racial identity, gender, or whether they born in the U.S as stigma and attitudes vary by culture (Abdullah & Brown, 2011). The final analysis included 2551 participants.

## Statistical analysis

We used SAS version 9.4 for all analyses (SAS Institute Inc., Cary, North Carolina, USA). For this study, we wanted to further examine different types of attitudinal barriers (e.g. help-seeking attitudes, treatment beliefs, perceived need), so we conducted an exploratory factor analysis to isolate subcomponents of the Barriers to Care scale that loaded onto specific barriers. The factor analysis was carried out using varimax rotation with a 0.4 cutoff for factor inclusion, a minimum eigenvalue of 1, and Cronbach's  $\alpha$  was calculated to assess subscale reliability. Barrier subscale scores were calculated by taking average of all items in each factor.

We created a categorical variable for depression severity using the following score ranges: 5–9 for mild depression, 10–14 for moderate depression and 15+ for moderately severe to severe depression (see Kroenke & Spitzer, 2002 for cut-off validation).

Linear regression was used to examine the association of stigma and barrier outcomes. While the residuals deviated somewhat from the assumption of normality, with a sample size greater than 200 our models are still reliable (Statistics Solutions, 2013, Tabachnick & Fidell, 2013). We conducted several different linear regressions, including examination of internalized stigma and perceived stigma with each barrier outcome, and examination of how the ISMI sub-factors (alienation/stereotype endorsement/stigma resistance) related to overall barriers endorsement and each barrier subtype. Each multivariable-adjusted model additionally included gender, race, cultural background, English as a first language, and depression severity.

To evaluate whether depression severity modified the relationship between depression stigma and barriers, we used likelihood ratio tests to compare models including the interaction of PHQ-9 score and internalized stigma or perceived stigma with the main effect model (Kestenbaum, 2009). For models with significant interactions, we ran regression analyses that were stratified by depression severity level.

## Results

### Factor analysis

The factor analysis identified one structural barrier factor and three types of attitudinal barriers in the barriers to care that accounted for 63.0% of the total variance: low perceived need (e.g. "I wanted to solve problems on my own," 11.5% of variance), negative help-seeking attitudes (e.g. "I thought help-seeking was a sign of weakness," 16.2% of variance), negative treatment expectations (e.g. "I thought treatment could only make things worse," 14.9% of variance) and structural barriers (e.g. "I could not afford treatment," 21.4% of variance). Good subscale reliability (Cronbach's  $\alpha \geq 0.8$ ) was seen for structural barriers, negative help-seeking attitudes, and negative treatment expectations. Reliability of low perceived need was questionable (Cronbach's  $\alpha = 0.66$ ) ([Supplemental Table 1](#)).

### Correlation of depression stigma and barriers to seeking mental health care

Significant correlations between internalized stigma, alienation, stereotype endorsement, and perceived stigma were weak ( $r(2153) = 0.28$ ,  $p < 0.0001$ ;  $r(2153) = 0.23$ ,  $p < 0.0001$ ;  $r(2153) = 0.28$ ,  $p < 0.0001$ , respectively). There was a moderate correlation between negative treatment expectations and negative help-seeking attitudes ( $r(2153) = 0.51$ ,  $p < 0.0001$ ) as well as structural barrier concerns ( $r(2153) = 0.55$ ,  $p < 0.0001$ ) ([Supplemental Table 2](#)).

### Hypothesis 1: Internalized stigma will be a stronger predictor of barriers to seeking mental health care than perceived stigma

For this analysis, internalized stigma and perceived stigma were entered into the same models. Internalized and perceived stigma both had significant positive associations with the overall barrier endorsement ( $p < 0.0001$  for both) ([Table 2](#)). A one-point increase in internalized stigma was associated with a 0.3 ( $SE:0.03$ ) point increase in overall barrier endorsement, while a one-point increase in perceived stigma was only associated with a 0.07 ( $SE:0.02$ ) point increase. Internalized stigma was also significantly associated with low perceived need ( $B:-0.12$ ;  $SE:0.04$ ;  $p = 0.005$ ), negative help-seeking attitudes ( $B:0.24$ ;  $SE:0.05$ ;  $p < 0.0001$ ), negative treatment expectations ( $B:0.51$ ;  $SE:0.05$ ;  $p < 0.0001$ ), and structural barriers ( $B:0.46$ ;  $SE:0.05$ ;  $p < 0.0001$ ). Perceived stigma was significantly associated with negative help-seeking attitudes ( $B:0.13$ ;  $SE:0.02$ ;  $p < 0.0001$ ), negative treatment expectations ( $B:0.11$ ;  $SE:0.02$ ;  $p < 0.0001$ ), and structural barriers ( $B:0.05$ ;  $SE:0.02$ ;  $p = 0.03$ ).

Consistent with Hypothesis 1, the association for internalized stigma was stronger than it was for perceived stigma for several barrier types. Comparison of the standardized betas reveals that internalized stigma is a stronger predictor for overall barrier endorsement ( $\beta:0.30$  vs  $\beta:0.08$ ), negative treatment expectations ( $\beta:0.21$  vs  $\beta:0.10$ ) and structural barriers ( $\beta:0.20$  vs  $\beta:0.02$ ). Perceived stigma was a stronger

predictor than internalized stigma for negative help-seeking attitudes ( $\beta$ :0.11 vs  $\beta$ :0.09).

### **Hypothesis 2: Alienation will be a stronger predictor of barriers than other components of internalized stigma**

We next examined whether the subscales of the ISMI (alienation, stereotype endorsement and stigma resistance) relate to barriers to seeking mental health care overall. We also conducted an exploratory analysis to determine whether ISMI subscales uniquely predicted barriers to care subscales (Table 3). Alienation was associated with a 0.20 (SE:0.03;  $p < 0.0001$ ) point increase in overall barrier endorsement. Additionally, alienation was also significantly associated with low perceived need ( $B$ : -0.15; SE:0.03;  $p < 0.0001$ ), negative help-seeking attitudes ( $B$ :0.51; SE:0.04;  $p < 0.0001$ ) and negative treatment expectations ( $B$ :0.17; SE:0.4;  $p < 0.0001$ ). Stereotype endorsement was significantly associated with overall barrier endorsement ( $B$ :0.14; SE:0.03;  $p < 0.0001$ ), low perceived need ( $B$ : -0.14; SE:0.01;  $p < 0.0001$ ), negative help-seeking attitudes ( $B$ :0.09; SE:0.04;  $p = 0.04$ ), negative treatment expectations ( $B$ :0.30; SE:0.04;  $p < 0.0001$ ) and structural barriers ( $B$ :0.39; SE:0.04;  $p < 0.0001$ ). Finally, stigma resistance

was significantly associated with low perceived need ( $B$ :0.08 SE:0.03;  $p = 0.006$ ) and negative help-seeking attitudes ( $B$ :0.07; SE:0.04;  $p = 0.04$ ).

Comparison of standardized betas between alienation, stereotype endorsement, and stigma resistance revealed that alienation is a stronger predictor of overall barrier endorsement ( $\beta$ :0.16 vs  $\beta$ :0.12 vs  $\beta$ :0.03) and negative help-seeking attitudes ( $\beta$ :0.25 vs  $\beta$ :-0.05 vs  $\beta$ :0.04). Stereotype endorsement was the stronger predictor of negative treatment expectations ( $\beta$ :0.09 vs  $\beta$ :0.17 vs  $\beta$ :-0.02) and structural barriers ( $\beta$ :0.16 vs  $\beta$ :0.22 vs  $\beta$ :0.03). For low perceived need, alienation and stereotype endorsement were equally strong predictors in opposite directions ( $\beta$ :0.10 vs  $\beta$ :-0.10 vs  $\beta$ :0.03).

### **Hypothesis 3: Depression severity modifies the relationship of depression stigma and barriers to care**

Interaction terms for stigma and depression severity were not significant ( $p_{\text{interaction}} > 0.05$ ) (Supplemental Table 3).

**Table 2.** Regression results for the association of internalized stigma and perceived stigma with barriers to seeking mental health care.

	Internalized stigma	Standardized $\beta$	$p$ Value	Perceived stigma	Standardized $\beta$	$p$ Value
Overall barrier endorsement B (SE)						
Unadjusted	0.36 (0.03)		<0.0001	0.12 (0.02)		<0.0001
MV-adjusted <sup>a</sup>	0.30 (0.03)	0.18	<0.0001	0.07 (0.02)	0.08	<0.0001
Low perceived need B (SE)						
Unadjusted	-0.17 (0.04)		<0.0001	-0.05 (0.02)		0.01
MV-adjusted <sup>a</sup>	-0.12 (0.04)	-0.06	0.005	-0.02 (0.02)	-0.03	0.21
Negative help-seeking attitudes B (SE)						
Unadjusted	0.30 (0.05)		<0.0001	0.18 (0.02)		<0.0001
MV-adjusted <sup>a</sup>	0.24 (0.05)	0.09	<0.0001	0.13 (0.02)	0.11	<0.0001
Negative treatment expectations B (SE)						
Unadjusted	0.62 (0.05)		<0.0001	0.21 (0.02)		<0.0001
MV-adjusted <sup>a</sup>	0.51 (0.05)	0.21	<0.0001	0.11 (0.02)	0.10	<0.0001
Structural barrier concerns B (SE)						
Unadjusted	0.57 (0.04)		<0.0001	0.14 (0.02)		<0.0001
MV-adjusted <sup>a</sup>	0.46 (0.05)	0.20	<0.0001	0.05 (0.02)	0.02	0.03

<sup>a</sup>Full model included internalized stigma, perceived stigma, gender, race, cultural background, PHQ-9 score and English as a primary language. SE: Standard error.

**Table 3.** Regression results for the association of alienation, stereotype endorsement and stigma resistance with barriers to seeking mental health care.

	Alienation	Standardized $\beta$	$p$ Value	Stereotype endorsement	Standardized $\beta$	$p$ Value	Stigma resistance	Standardized $\beta$	$p$ -Value
Overall barrier endorsement B (SE)									
Unadjusted	0.33 (0.02)		<0.0001	0.25 (0.02)		<0.0001	-0.04 (0.02)		0.12
MV-adjusted <sup>a</sup>	0.20 (0.03)	0.16	<0.0001	0.14 (0.03)	0.12	<0.0001	0.04 (0.02)	0.03	0.11
Low perceived need B (SE)									
Unadjusted	0.05 (0.03)		0.08	-0.15 (0.03)		<0.0001	0.14 (0.03)		<0.0001
MV-adjusted <sup>a</sup>	0.15 (0.03)	0.10	<0.0001	-0.14 (0.03)	-0.10	<0.0001	0.08 (0.03)	0.06	0.006
Negative help-seeking attitudes B (SE)									
Unadjusted	0.56 (0.04)		<0.0001	0.11 (0.04)		0.003	0.08 (0.04)		0.03
MV-adjusted <sup>a</sup>	0.51 (0.04)	0.25	<0.0001	-0.09 (0.04)	-0.05	0.04	0.07 (0.04)	0.04	0.04
Negative treatment expectations B (SE)									
Unadjusted	0.41 (0.04)		<0.0001	0.45 (0.03)		<0.0001	-0.16 (0.03)		<0.0001
MV-adjusted <sup>a</sup>	0.17 (0.04)	0.09	<0.0001	0.30 (0.04)	0.17	<0.0001	-0.03 (0.03)	-0.02	0.42
Structural barrier concerns B (SE)									
Unadjusted	0.30 (0.04)		<0.0001	0.47 (0.03)		<0.0001	-0.14 (0.03)		<0.0001
MV-adjusted <sup>a</sup>	0.05 (0.04)	0.03	0.15	0.39 (0.04)	0.22	<0.0001	0.03 (0.03)	0.02	0.43

<sup>a</sup>Full model included alienation, stereotype endorsement, stigma resistance perceived stigma, gender, race, cultural background, PHQ-9 score and English as a primary language. SE: Standard error.

## Discussion

There were two key findings from this study. First, we extended prior work (Clement et al., 2015) by demonstrating that internalized stigma had a stronger relationship with other barriers to seeking mental health care than did perceived stigma. Second, we extended these findings by demonstrating that alienation served as a stronger predictor of overall barrier endorsement than did the stereotype endorsement or stigma resistance factors of the ISMI. Moreover, exploratory analyses revealed that higher alienation predicted a stronger emphasis on negative help-seeking attitudes, while higher stereotype endorsement served as a stronger predictor of negative treatment expectations and a greater emphasis on structural barriers. These findings provide greater insight into how internalized stigma functions as a barrier, as well as several important implications for clinicians and interventions.

### Stigma and barriers

Internalized stigma consistently displayed stronger associations with barriers to seeking mental health care compared to perceived stigma, particularly for negative treatment expectations and structural barrier concerns. This finding is consistent with prior work showing that internalized stigma more strongly predicts treatment-seeking than does perceived stigma (Clement et al., 2015). While we do not know whether greater internalized stigma leads to greater ratings of these barriers or vice versa, these two barriers are of note as concerns about cost and treatment effectiveness predict treatment dropout (Edlund et al., 2002; Olfson et al., 2009).

Another notable finding was that internalized stigma was negatively associated with low perceived need for treatment while prior studies found internalized stigma was positively associated with perceived need (Golberstein et al., 2008; Schomerus et al., 2012). For example, Golberstein et al. (2008) and Schomerus et al. (2012) directly asked if participants felt they needed professional treatment. In our study, instead we measured perceived need for treatment using items such as “I wanted to solve problems on my own” and “I did not think problems were serious.” As a result, our measure of perceived need may have focused more on preference for friends and family as a source of treatment and health literacy than their direct assessment of need for professional services.

Belonging is a fundamental human need and people will try to avoid circumstances that threaten their sense of belonging (Baumeister & Leary, 1995). Thus, it was not surprising that greater alienating beliefs were associated with greater overall barrier endorsement. It followed that alienation was also a strong predictor of low perceived need and negative help-seeking attitudes as these barriers concerned social support, rejection for seeking help, and downplaying symptoms. Stereotype endorsement included items painting individuals with depression as potentially violent, unable to make their own decision, and unable to contribute to society. This, it was not surprising that stereotype endorsement predicted greater perceived need and structural barriers, as

individuals endorsing stereotypes are not likely to downplay symptoms and may view normal treatment access as beyond the means for depressed individuals. Stereotype endorsement's association with greater negative treatment expectations was somewhat unusual given higher perceived need but could be due to viewing current treatments as ineffective for depression.

### Implications

While large campaigns such as *beyondblue* and *Time to Change* have had success in changing public opinion about mental illness, internalized stigma interventions have been focused on small populations with mixed success and have rarely addressed other barriers (Büchter & Messer, 2017; Henderson et al., 2012; Jorm, Christensen, & Griffiths, 2006). Our findings suggest that individuals expressing barrier concerns may also be holding a substantial level of internalized stigma. Thus, addressing the sub-barrier (e.g. structural barriers) on its own may not be effective unless stigma is also addressed. At the same time, reducing stigma may require also addressing these sub-barriers. For example, incorporating materials on what to expect from treatment as well as available resources into stigma interventions may be more effective than addressing them separately.

### Modification by depression severity

Contrary to hypothesis 3, we did not find evidence that depression severity modified the relationship between stigma and barriers to care.

### Strengths

Our factor analysis of the BCC was a novel approach. This enabled us to not only examine how internalized and perceived stigma related to barriers to seeking mental health care in general, but whether certain types of barriers had stronger associations with perceived or internalized stigma. As a result, we identified specific subtypes of barriers that interventions could target to reduce the negative impact of stigma. Another strength of our study was that we explored the relative contributions of the subcomponents of the internalized stigma scale (e.g. alienation, stereotype endorsement and stigma resistance), which provides an important extension on prior work that has identified internalized stigma as being a stronger predictor of treatment intentions than perceived stigma (Clement et al., 2015).

### Limitations

An important limitation to the study is that we were unable to examine how stigma and barriers interact to impact treatment-seeking. While both stigma and barriers have been linked to reduced treatment-seeking in past work, further research is necessary to determine whether stigma increases the negative impact of barriers on treatment-seeking or vice versa (Clement et al., 2015; Mojtabai et al., 2011; Mohr

et al., 2010). There is the potential for unmeasured confounding as we were unable to control for factors such as socioeconomic status or knowing someone with depression (Chen et al., 2013; Schomerus, Matschinger, & Angermeyer, 2009). Moreover, although the measure of prior mental health treatment we collected from the 2016 respondents found that having sought treatment did not affect perceived barriers (see [Supplemental materials](#)), it is important to note that our measure did not distinguish between types of treatment (e.g. mental health professional versus primary care physician). Future research may benefit from examining whether perceived barriers facing those who have never sought treatment from a mental health provider are the same as the barriers facing those who have.

An additional limitation to the current study is that we may have excluded individuals who have depression because the PHQ-9 only measures depression symptoms over the past two weeks; we did not ask whether participants had ever been diagnosed with depression. Furthermore, our measure of perceived need had questionable reliability, and was more indirect than those used in previous studies (Golberstein et al., 2008; Schomerus et al., 2012). Finally, our findings cannot be applied to the general population as our sample only consisted of university students taking an introductory psychology course.

## Conclusions

Our findings highlight that there is an important relationship between internalized mental health stigma and other barriers to seeking treatment. While further research is needed to determine the extent to which this relationship impacts treatment-seeking behavior, it does provide further insight into how stigma functions as a barrier. Depression stigma is a major impediment to seeking care for those who suffer from the disease and addressing the additional barriers it is strongly tied to could be an important component in successfully combating its negative impact on those who suffer from depression.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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## Appendix 1

We want to know **reasons you may have not sought out mental health services anytime you were faced with a decision to in your lifetime**. Please write the number that best describes how much you agree or disagree with each reason below based on this scale:

1 ... .. 2 ... .. 3 ... .. 4 ... .. 5

Not at all    A little            Some            A lot            Very much

1. I wanted to solve problems on my own. \_\_\_\_\_
2. I did not think problems were serious. \_\_\_\_\_
3. I thought problems would go away. \_\_\_\_\_
4. I had enough support in my social network. \_\_\_\_\_
5. I found it hard to talk about personal problems. \_\_\_\_\_
6. I thought help-seeking was a sign of weakness. \_\_\_\_\_
7. I was afraid of what people might think if I sought help. \_\_\_\_\_
8. I thought help-seeking was too self-indulgent. \_\_\_\_\_
9. I did not think treatment would help. \_\_\_\_\_
10. I did not trust mental health services. \_\_\_\_\_
11. I thought treatment could only make things worse. \_\_\_\_\_
12. I have had a bad experience with mental health services. \_\_\_\_\_
13. I did not know how to get help. \_\_\_\_\_
14. I could not afford treatment. \_\_\_\_\_
15. I could not arrange to get a consultation timely enough. \_\_\_\_\_
16. I did not have time to seek help. \_\_\_\_\_
17. Services were too far away or difficult to reach. \_\_\_\_\_
18. I sought help, but did not receive it. \_\_\_\_\_
19. Other: If applicable, write reason below and write number \_\_\_\_\_