Association Between Stigma and Depression Outcomes Among Chinese Immigrants in a Primary Care Setting

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ABSTRACT

Objective: Stigma has been proposed to be a major underlying factor contributing to lower rates of mental health service utilization among racial/ethnic minorities in the United States. Yet, surprisingly little research has specifically explored associations between stigma, race/ethnicity, and psychiatric morbidity. This study aims to assess the impact of stigmatizing attitudes on depression outcomes among a psychiatrically underserved, immigrant Chinese population.

Methods: Between 2009 and 2012, 190 Chinese immigrants with major depressive disorder as diagnosed by the Mini International Neuropsychiatric Interview were enrolled in a trial of culturally sensitive collaborative care for depression. Participants' self-reported stigma regarding their symptoms was assessed at study entry using the Explanatory Model Interview Catalogue, and depressive symptoms were assessed with the Hamilton Depression Rating Scale (HDRS) at baseline and follow-up. Hierarchical linear regression was used to assess the association between baseline stigma score and change in HDRS score, adjusting for potential confounders.

Results: Higher stigma scores at baseline were significantly associated with attenuated improvement in both HDRS score and quality of life at 6 months ($P < .05$ for both).

Conclusions: Stigma has a directly harmful effect on depression outcomes, even after individuals have been accurately diagnosed within a culturally sensitive community health center and agreed to treatment. These results support further research into interventions targeting stigma to improve mental health outcomes among minority populations.

Trial Registration: This study is a secondary analysis of prospectively collected data from the randomized controlled trial registered by ClinicalTrials.gov identifier: NCT00854542

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Globally, a large mismatch exists between those who need versus receive psychiatric treatment, despite the availability of effective therapies.[1] Major depressive disorder (MDD) has one of the largest treatment gaps of any mental illness, and this gap is exacerbated among minority populations.[2] In particular, Asian Americans have among the lowest rates of mental health service utilization of any racial/ethnic group in the United States, even after adjusting for lower reported rates of depression in this population,[2–4] and this pattern of underutilization has not changed in over a decade.[5] Furthermore, when Asian immigrants do utilize mental health services, they are more likely than other groups to rate those services as unhelpful.[3] Such treatment-related factors present a major challenge for the US mental health service delivery system because Asian Americans recently surpassed Hispanics as the fastest-growing racial/ethnic group in this country, and this growth is driven primarily by immigration rather than childbirth.[6]

Previous research has identified a variety of factors that contribute to lower rates of mental health service utilization among immigrant groups. Chief among these, stigma has become a construct of increasing interest for mental health service researchers and has been described as an important underlying factor that directly affects the experience, disclosure, and treatment of psychological problems.[5] Some scholars have even proposed that stigma be broadly considered a fundamental cause of health inequalities, similar to other social determinants of population health such as education and socioeconomic position.[7] Stigmatizing beliefs have been linked to a range of health conditions, including HIV/AIDS, mental illness, epilepsy, physical disability, leprosy, and tuberculosis.[8]

The sociologist Erving Goffman proposed a widely cited definition of stigma as a phenomenon whereby an individual with an attribute that is deeply discredited by his or her society is rejected as a result of the attribute. In other words, stigma is a process by which the reaction of others "spoils" normal identity."[9] Goffman's definition of stigma primarily emphasizes negative attitudes and beliefs held by society at large toward individuals possessing the stigmatizing characteristic, representing a sociologic orientation toward this construct. Other stigma researchers, including Patrick Corrigan and Scott Burris, have drawn a distinction between social stigma and self-stigma, which can be conceptualized as the internalization of stigmatizing societal beliefs.[10,11]

While social stigma and self-stigma are related, self-stigma is of particular interest to mental health researchers because of its negative impacts on self-esteem and self-efficacy. Self-stigma regarding mental illness can lead to delaying or refusing care, with epidemiologic studies suggesting that 50% to 60% of individuals with mental distress do not seek treatment as a result of stigma,[12] and stigma is also associated with negative personal and public health consequences including reduced educational and employment opportunities, treatment nonadherence, and obstruction of public health programs and interventions intended to combat disease.[9,13]

Clinical Points

- Although stigma is a major factor contributing to lower rates of mental health service utilization among racial/ethnic minority groups in the United States, surprisingly little research has specifically examined the association between stigma, race/ethnicity, and psychiatric morbidity.
- This study suggests that depressed Chinese immigrant patients who possess more stigmatizing beliefs about their illness do not respond as well to treatment as those with lower levels of self-stigma.
- Addressing stigma among depressed immigrant patients may help improve treatment outcomes.

Stigma regarding mental illness and treatment appears to be more common and severe among Asian populations, especially those possessing traditional beliefs.[14] Researchers note that in China, sufferers of mental illness and their families are stigmatized to an even greater extent than their counterparts in the West since "stigma in Chinese society quickly moves from the affected individual to his/her family, largely due to shared etiological beliefs about mental illness that assign a moral 'defect' to sufferers and their families."[15(p1529)] Key to this dynamic is the importance Chinese society assigns to the concept of "face" (*mianzi* or *lian*), which reflects an individual's or family's moral standing within the community. Loss of moral face, which can occur in the case of mental illness, directly leads to stigma by placing "the individual and the family in a despised and isolated position" within society.[16(p404)] Fear of "genetic contamination" that could jeopardize a family's lineage has also been identified as a contributor to mental illness stigma among Chinese Americans.[17]

Despite stigma's impact on the experience of mentally ill individuals and their families, particularly in minority populations, surprisingly little evidence exists regarding associations between depressed individuals' stigmatizing beliefs and psychiatric outcomes for any ethnicity. Progress in this area has been hampered by (1) a dearth of prospective data, which limits causal inference; (2) lack of research in minority populations; and (3) few studies selecting clinically relevant outcome measures such as depression severity scores.[18] Indeed, minority mental health experts have specifically highlighted the profound need for more and better quality mental health service outcomes research, especially among Asian Americans.[5]

Sirey and colleagues[19] performed one of the only prospective studies of stigma as a predictor of outcomes in depression. These investigators found that perceived stigma regarding mental illness predicted treatment discontinuation for an older subgroup of participants at 3 months, but they did not examine other psychiatric outcomes, and they utilized a predominantly white population.[19] In a study assessing the psychometric properties of 4 different stigma measures among a group of 200 low-income Latinos, Interian and colleagues[20] found that participants who reported greater social distance from people with depression were more likely to have been in recent psychological treatment and those with high stigma scores on 2 of the measures were less likely to be taking antidepressant medications. However, the cross-sectional study design makes the directionality of these associations difficult to infer.

Previous research by Chen and colleagues[21] suggests that between 1998 and 2012, the illness beliefs of Chinese Americans with major depression at South Cove Community Health Center in Boston, Massachusetts, shifted to become more consistent with Western biopsychiatric explanatory models and that this change was accompanied by an increase in self-reported stigma. One possible explanation for the observed rise in stigma is that depressive symptoms are more stigmatized by this group when viewed as manifestations of a psychiatric rather than a somatic illness. This conclusion mirrors Yang and Singla's[22] finding that stigma increases among Chinese American relatives of individuals with psychosis when their indigenous beliefs are replaced by a diagnosis of a psychotic disorder. We hypothesized that as Chinese American immigrants' beliefs about depression conform to Western models, stigma may consequently become an increasingly important target for addressing disparities in mental health service utilization.

The current study aims to test the hypothesis that Chinese American individuals with major depression who endorse more stigmatizing beliefs about their symptoms at a baseline visit, as quantified by the stigma instrument of the Explanatory Model Interview Catalogue (EMIC),[23] will have attenuated reduction in depression symptom burden over 6 months compared to those with fewer baseline stigmatizing beliefs. A secondary treatment outcome measure studied is improvement in quality of life. Finally, the impact of being randomized to a culturally sensitive collaborative care model on the proposed primary and secondary associations is assessed.

METHODS

Description of the Parent Study/Data Source

This study is a secondary analysis of prospectively collected data from a randomized controlled trial (ClinicalTrials.gov identifier: NCT00854542) of telepsychiatry-based culturally sensitive collaborative treatment (T-CSCT) for Chinese immigrants with major depression in primary care.[24] The specific purpose of this analysis is to test the hypothesis that self-reported stigma has a significant impact on treatment outcomes in depression. Yeung and colleagues[25] previously showed that culturally sensitive collaborative care (CSCT) greatly improved engagement of depressed Chinese immigrants into psychiatric treatment. CSCT was based on Katon and colleagues' collaborative care model and included the use of a culturally sensitive psychiatric consultation called the Engagement Interview Protocol, as well as close monitoring and coordination by bilingual/bicultural care managers.[26,27]

T-CSCT simply involves the addition of teleconferencing technology to CSCT, with the goal of increasing access to clinicians with appropriate linguistic and cultural expertise

for non-English–speaking immigrant patients. Subjects randomized to the T-CSCT arm of the study received a culturally sensitive telepsychiatry-based assessment by a bilingual psychiatrist using the Engagement Interview Protocol, a semistructured interview protocol developed by Yeung and colleagues,[27] but all subjects regardless of randomization arm were instructed to receive follow-up treatment from their primary care physician. Care managers played a central role in management of patients in the T-CSCT arm through the use of scheduled phone visits.[24] T-CSCT itself is not designed to address stigma or alter patients' illness beliefs.

Subject Recruitment and Description of Study Measures

Between 2009 and 2012, 24,181 first-generation Chinese immigrants 18 years or older who reported a primary language of Chinese (Mandarin or Cantonese) and who sought primary care at South Cove Community Health Center in Boston were screened for depression using the Chinese Bilingual version of the 9-item Patient Health Questionnaire (CB-PHQ-9).[28] Of the 950 individuals with CB-PHQ-9 scores ≥ 10, 520 declined to participate, 111 were ineligible because they were already receiving treatment for MDD, and 78 were disqualified for other reasons (not being of Chinese origin, active substance use disorder, etc). Of those remaining, 190 had a diagnosis of MDD confirmed via the Mini International Neuropsychiatric Interview and gave written informed consent to a Mandarin- or Cantonese-speaking study clinician after the study procedures had been fully explained. The study was approved by the Partners Human Research Committee, Boston, Massachusetts.

All 190 consented participants were randomized to receive either T-CSCT or usual care. Regardless of randomization arm, all participants at the baseline visit were administered the EMIC, a semistructured questionnaire designed to assess illness beliefs. The EMIC includes a stigma assessment tool comprising 12 questions on a Likert agreement scale that ask participants about their attitudes regarding their symptoms, with 1 reverse-coded item.[28] The EMIC has been previously validated in mentally ill populations in different cultural contexts, and the total numerical score can be considered a measure of the severity of perceived stigma.[29] Mental health outcomes were regularly tracked every 2 months for a total of 6 months, including the 17-item Hamilton Depression Rating Scale (HDRS) and Quality of Life Enjoyment and Satisfaction Questionnaire, Short Form (Q-LES-Q-SF). Both of these measures have been psychometrically validated among Chinese patients with depression.[30,31]

Statistical Analysis

In cases in which the primary outcome of interest (HDRS score at 6 months) was missing, the last observed HDRS score was carried forward as a conservative means of preserving power, since subjects on average in this study demonstrated improvement over time (n = 4).[32] In all other cases in which either the primary predictor or outcome of interest was missing, those individuals with missing data were removed from the database entirely (n = 22).[33] Baseline stigma score and HDRS and Q-LES-Q-SF scores at baseline and follow-up were retained as continuous variables. Univariate analyses of the association between stigma score and HDRS were performed. Following the guidelines of Miller and Chapman,[34] variables were retained as covariates in the model when they were significantly associated with HDRS scores and not stigma. These variables included gender, family history of depression, and marital status. Additionally, baseline HDRS was included in the model to assess change in depressive symptoms. Finally, in the main analysis, we controlled for randomized group differences as this study's primary aim is to assess outcomes based on initial stigma (see Yeung et al[24] for effects of group differences).

Hierarchical linear regression was used to test the hypothesized association between baseline stigma score and HDRS and Q-LES-Q-SF score at 6 months, while controlling for covariates. Additionally, hierarchical linear regression was used to assess whether treatment affected the relationship between stigma and depressive or quality of life outcomes using an interaction model.

Table 1. Descriptive Statistics

Variable	Mean (SD)	Minimum	Maximum
Age, y	50.5 (14.7)	19	84
Baseline EMIC stigma score	15.5 (7.8)	0	36
Baseline HDRS score	19.5 (4.3)	8	31
Follow-up HDRS score	12.9 (6.4)	0	26
Baseline Q-LES-Q-SF score	40.9 (6.6)	24	62
Follow-up Q-LES-Q-SF score	47.6 (8.4)	25	66
		n (%)	
Sex			
Female		104 (62)	
Male		64 (38)	
Level of education			
Less than high school		87 (52)	
High school graduate, some college		50 (30)	
2- to 4-year college graduate		31 (18)	
Marital status			
Married or cohabiting		93 (55)	
Single/divorced/widowed		75 (45)	
Employment			
Full-time, part-time, homemaker, student		115 (68)	
Unemployed/leave		53 (32)	
Insurance status			
Public or private		155 (95)	
Uninsured		9 (5)	
Family history of major depression			
Endorsed		38 (23)	
Denied		127 (77)	

Abbreviations: EMIC = Explanatory Model Interview Catalogue; HDRS = 17-item Hamilton Depression Rating Scale; Q-LES-Q-SF = Quality of Life Enjoyment and Satisfaction Questionnaire, Short Form; SD = standard deviation.

RESULTS

Table 1 presents descriptive statistics. A total of 168 participants were included in this analysis. The 22 individuals who were removed due to loss to follow-up did not differ significantly from those who completed the study on the

Table 2. Adjusted Effects of Stigma on Depression Symptom Severity[a]

	Main Effect			Interaction		
	β	SE	*t*	β	SE	*t*
Gender	−1.23	0.97	−1.27	−1.21	0.98	−1.24
Marital status	1.39	0.41	3.41**	1.41	0.41	3.41**
Family history	−0.58	1.10	−0.53	−0.61	1.11	−0.55
Baseline depression	0.28	0.12	2.33*	0.28	0.12	2.33*
Treatment arm	−4.02	0.90	−4.48***	−4.65	2.00	−2.31*
Baseline stigma	**0.13**	**0.06**	**2.04***	0.11	0.08	1.27
Stigma × arm	…	…	…	**0.04**	**0.12**	**0.35**

[a]Bolded numbers denote primary end points of interest in this study.
*P < .05.
**P < .01.
***P < .001.
Symbol: … = not applicable.
Abbreviations: β = regression β coefficient, SE = standard error.

Table 3. Adjusted Effects of Stigma on Quality of Life[a]

	Main Effect			Interaction		
	β	SE	*t*	β	SE	*t*
Gender	1.99	1.21	1.65	1.99	1.22	1.64
Marital status	−1.48	0.51	−2.88**	−1.47	0.52	−2.86**
Family history	0.42	1.38	0.31	0.42	1.39	0.30
Baseline quality of life	0.48	0.09	5.42***	0.48	0.09	5.35***
Treatment arm	3.35	1.15	2.92**	3.19	2.61	1.22
Baseline stigma	**−0.15**	**0.08**	**−2.00***	−0.16	0.11	−1.49
Stigma × arm	…	…	…	**0.01**	**0.15**	**0.07**

[a]Bolded numbers denote primary end points of interest in this study.
*P < .05.
**P < .01.
***P < .001.
Abbreviations : β = regression β coefficient, SE = standard error.

basis of age, sex, education level, baseline depression severity, stigma score, insurance status, or employment. All continuous variables were normally distributed. The mean age was 50.5 years (standard deviation [SD] = 14.7 years). The majority of participants were female (62%), had less than a high school education (52%), were married or cohabiting (55%), were employed (68%), had health insurance (95%), and denied a family history of major depression (77%). The mean EMIC stigma score was 15.5 out of a possible 36 (SD = 7.8), and the mean baseline HDRS score was 19.5 out of a possible 54 (SD = 4.3), indicating moderate to severe depression.[34] The outcome measure, HDRS score at 6-month follow-up, was normally distributed, with the average participant improving (mean change in HDRS score = −6.6, SD = 6.7, P < .0001 by 1-sample t test).

Hierarchical linear regression showed that baseline stigma was positively associated with higher levels of depression scores at 6-month follow-up (β = 0.125, t = 2.036, P = .044, ΔR^2 = 0.020, f^2 = 0.02), suggesting that those with higher baseline stigma scores did not evince as much reduction in depression scores compared to those with lower baseline stigma scores, even after controlling for the main effects of baseline differences in depression (Table 2).

In addition, the same model with the same covariates was used to assess whether baseline stigma was associated with attenuated improvement in quality of life. Results indicated that baseline stigma was associated with a lower increase in quality of life at 6 months (β = −0.154, t = −2.003, P = .047, ΔR^2 = 0.019, f^2 = 0.02), even after controlling for initial levels of quality of life, supporting the attenuating effects of stigma on outcomes on multiple levels (Table 3).

In the 2 aforementioned significant findings, the Cohen f^2 represents the change in regression effect when stigma is included after the covariates.[35]

Finally, to test whether the effect of stigma on outcomes was modified by assignment to the T-CSCT intervention, an interaction term for randomization arm and stigma score was included in the regression model. The first step of the model included demographic covariates (gender, family history of depression, and marital status) as in the prior model and baseline depression score. The second step included the randomized treatment arm and baseline stigma score. Finally, the last step included an interaction term between treatment and stigma to assess whether T-CSCT intervention differentially influenced the effects of stigma on depressive outcomes. Results found that treatment arm did not significantly moderate the relationship between baseline stigma and depression symptoms at follow-up (β = 0.04, t = 0.35, P = .72).

DISCUSSION

Our results suggest that stigmatizing beliefs among Chinese immigrants with major depression are significantly associated with attenuated improvement in both depression symptom severity and quality of life at 6 months, after controlling for appropriate covariates. Thus, stigmatizing beliefs appear to exert an independently harmful effect on depression outcomes. To our knowledge, this is the first study to prospectively assess the impact of self-stigma on psychiatric outcomes other than treatment discontinuation.

This is an important finding in terms of mental health service disparities research, as it suggests that self-stigma can have a direct negative effect on the course of depression, even after individuals have been diagnosed by providers at a culturally sensitive community health center and have agreed to intervention. Self-stigma is already known to contribute to delays in seeking treatment, posing a significant challenge for clinicians attempting to engage these populations in psychiatric care as well as for investigators attempting to carry out systematic studies. Given that racial/ethnic minorities in the United States tend to endorse more stigmatizing attitudes regarding mental illness than whites, one implication of these results is that members of certain minority groups may exhibit attenuated levels of improvement in depressive symptoms over time as compared to the racial/ethnic majority.

The clinical significance of small changes in HDRS and Q-LES-Q scores has not been well established[36] and the changes in R^2 and Cohen f^2 indicate only a small effect size for both of these outcomes.[35] Nonetheless, findings of an association between baseline stigma and depression symptom severity are bolstered by a parallel attenuation in improvement in perceived quality of life, which may be a more clinically relevant measure. Capturing a wider range of baseline stigma and HDRS scores in future studies may yield

more robust information regarding the relationship between stigma and depression outcomes. Nonetheless, the fact that perceived stigma at a baseline visit significantly predicted a change in HDRS score 6 months later, after controlling for significant covariates, is a striking result.

There was insufficient evidence to demonstrate that T-CSCT assignment significantly altered stigma's effect on depression outcomes, suggesting that culturally sensitive care alone is not enough to mitigate stigma's harmful effects. However, this study was likely underpowered to detect such an interaction. In addition, being younger, female, more educated, and insured and having a family history of major depression were all associated with β coefficients suggesting a protective effect, but none of these were statistically significant.

While our study suggests that addressing stigma may have directly beneficial effects on depression outcomes, it is important to raise the question of whether stigma is actually amenable to intervention. A recent Cochrane meta-analysis[37] found that mass media strategies may reduce prejudice, but there was insufficient evidence regarding effects on discrimination, costs, adverse effects, and other outcomes. One of the authors of that study, Graham Thornicroft, has argued that stigma research may be "beside the point" due to its focus on hypothetical rather than real situations and lack of "clear implications for how to intervene to reduce social rejection."[38(p191)] However, other studies have identified several promising approaches for self-stigma reduction.[39,40] More research is needed to determine what types of strategies, if any, hold promise for addressing disproportionately stigmatizing beliefs among racial and ethnic minority groups. For example, Yang and colleagues[22] have recently conducted a pilot intervention to reduce internalized stigma for Chinese immigrant relatives of individuals with psychosis.

These results must also be interpreted within the context of the study design, and several limitations may exist. There is the possibility of selection bias since 520 of the 950 positively screened individuals declined to participate. These individuals may have held more traditional or stigmatizing illness beliefs, been less acculturated, or otherwise differed from those who agreed to participate. The psychometric properties of the EMIC stigma instrument have not been well validated specifically among mentally ill Chinese populations.[30,41] Additionally, the EMIC's stigma instrument does not allow flexibility for culturally appropriate adaptation of items, eg, by incorporating the construct of "face." The fact that participants were all recruited from a single treatment facility may limit generalizability of the findings. This investigation was also limited by the lack of a different-ethnicity comparison group, which will be addressed in a future study. Stigma scores were not remeasured at 6 months, thus precluding analysis of whether self-stigma can change over time or with the addition of T-CSCT and how this construct interacts with depressive symptoms. Baseline information about subjects was limited to the categories described above and excluded several important potential characteristics such as number of years lived in the United States, comorbid medical conditions, and prior contact with individuals with mental illness, all of which could have affected both the experience of stigma and the course of depression and may confound the results. Additionally, while this study focused exclusively on first-generation immigrants, future studies would benefit from assessing generational effects on stigma and associated depression outcomes.

In sum, these findings provide some of the first evidence from a prospective treatment study for an association between stigma and depression outcomes within a psychiatrically underserved US ethnic minority population. Given that Asian Americans have been found to be a challenging group to recruit for research,[42,43] a major strength of this study is its collaboration with South Cove Community Health Center, one of the largest community health centers in the United States serving a predominantly Chinese American patient population. Another strength is the use of prospectively collected data from a randomized controlled trial, which is rare in minority health service research. Our findings suggest several promising directions for future research, including examining demographic factors and culturally based illness beliefs associated with higher levels of stigma, assessing whether stigma exerts similar effects in other ethnic and cultural groups, mixed methods studies designed to elucidate possible mechanisms underlying the observed association, and evaluating the effectiveness of interventions designed to improve health service utilization and depression outcomes by directly targeting stigma.

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