



# Effects of Education and Cultural Beliefs on Chinese College Students' Perceptions of Mental Illness Stigma

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**Abstract** This cross-cultural analysis explored Chinese college students' attitudes towards people with mental illness. Students ( $N = 301$ ) from a public university on the east coast of China completed an online survey on their attitudes towards people with one of four mental illnesses: major depressive disorder (MDD), schizophrenia, alcohol use disorder (AUD), or gambling disorder. The results showed that Chinese young adults with more education endorsed more social acceptance towards people with MDD but less acceptance towards those with schizophrenia, AUD, or gambling disorder. On the other hand, students who had taken psychology, neuroscience, or other related courses preferred more social distance from individuals with these disorders. This result may be due to the respondents' biogenetic attribution to psychological problems. Moreover, consistent with Corrigan et al.'s (2003) stigma path model, participants who felt pity towards people with mental illness were more accepting of them. By contrast, those who expressed anger, fear, or avoidance expressed a desire for more social distance. Sex and age were not associated with participants' attitudes towards people with mental illness. In summation, this pilot study replicates results from Western samples, underscoring the need to understand how mental health issues are regarded by people from different cultural and societal backgrounds. Future research should continue to explore stigma related to mental illness in Chinese society.

**Index Terms**— stigma, public attitudes, Bogardus Social Distance Scale, Chinese college students, cross-cultural analysis

## INTRODUCTION

Stigmatizing beliefs towards people with mental health issues are prevalent in different cultures and constitute a social problem (Angermeyer & Dietrich, 2006; Vogel et al., 2019). Researchers have shown that perceived stigma and self-stigma negatively affect psychiatric patients' willingness to seek help (Vogel et al., 2007). For example, individuals whose nearest relatives hold stigmatizing beliefs towards their mental illness, such as schizophrenia, show an increasing level of stigma-internalization and depressive symptoms, which in turn, prevents them from seeking professional treatment (Krupchanka & Katliar, 2016). A recent study also demonstrated that college students with depression were less willing to seek professional help from their school's mental health service if help-seeking was stigmatized in their university culture (Kearns, Muldoon, Msetfi, & Surgenor, 2015). Furthermore, being stigmatized

sometimes brings more harm to people with mental illness than the disorders themselves. For instance, stigma was associated with more alcohol craving among sexual minority heavy drinkers when exposed to alcohol cues, consequently worsening their symptoms (Mereish & Miranda, 2019). Public stigma towards people with mental illness also significantly interferes with their various life dimensions, including work, housing, healthcare, and meaningful social interactions (Rüsch, Angermeyer, & Corrigan, 2005). In summary, stigma towards people with mental illness negatively affects their physical and mental health; more effort is needed to understand why these beliefs persist if they are to be changed.

While relevant literature has explored the negative influences of stigma on people with mental illness, fewer researchers have focused on the origin of stigmatizing beliefs. It is possible that stigma originates from public attitudes towards mental illness. In other words, the social interpretation of mental illness influences the patients' understanding of their mental health status; if the social

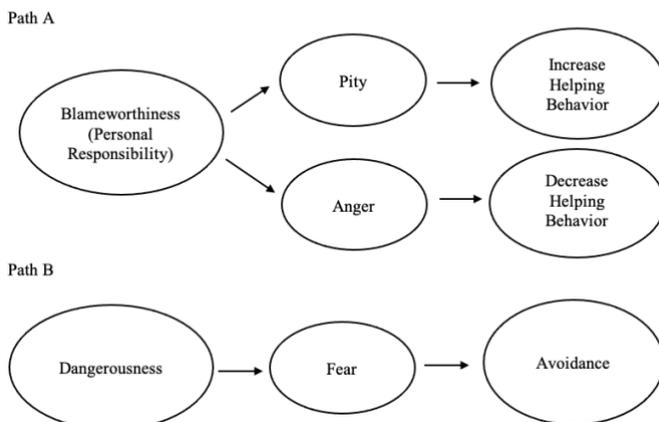
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interpretation is negative, it creates stigma (Corrigan & Watson, 2002). Cultural factors have shown to affect individuals' internalizing process of stigma (Kirmayer, 1989; Mak, Ho, Wong, Law, & Chan, 2015). There is a cultural value salient to the Chinese – face concern, which refers to a desire for maintaining a certain image or character set in front of others – which increases Chinese people's stigmatized internalization of having a mental illness (Hu, 1944). Corrigan and colleagues investigated stigmatizing beliefs towards people with schizophrenia. They found that people who believed individuals' mental health issues were their responsibility and considered individuals with mental illness to be dangerous expressed a greater desire for social distance from this population (Corrigan et al., 2003; Kashihara, 2015) (Figure 1).

Figure 1. Corrigan's Path Model of Public Stigma towards People with Mental Illness (Corrigan et al., 2002)



Asian Americans reported more stigma (e.g., social distance, blame, and anger) towards people with depression than European Americans (Cheng, 2015). This distinction may be due to the tendency to attribute mental health issues to individual responsibility (e.g., genetic explanations) in Asian cultural values (Yang et al., 2013). Therefore, public attitudes that are shaped by culture not only impact the patients' understanding of their own psychological states but also influence others' willingness to interact with them, consequently leading to the origin and development of stigmatizing beliefs among this population.

In addition to cultural influences, sociodemographic characteristics also influence the public attitudes towards people with mental illness. A wealth of research has suggested that gender, age, and education are associated with individuals' attitudes towards people with mental health issues. A recent study conducted on Chinese college students indicated that women overall had more implicit negative attitudes towards people with mental illness than men; however, there was no sex difference in their explicit

negative attitudes. That may be because men and women have different sensitivities to dangerousness and use distinct ways to express emotions (Wang, Huang, Jackson, & Chen, 2012). In addition, younger individuals were less likely to believe that psychiatric patients should be blamed for their psychological problems, compared to those who were older, suggesting a negative correlation between age and tolerance towards psychiatric patients (Chong et al., 2007). Moreover, many studies conducted across the globe showed improvement in public attitudes towards people with mental illness after sufficient exposure to knowledge about related disorders. This exposure included having relatives with mental illness, learning information about mental disorders on social media, or learning professional psychiatric knowledge at school (Betton et al., 2015; Bizub & Davidson, 2011; Singh, Baxter, Standen, & Duggan, 1998; Sousa, Marques, Rosário, & Queirós, 2012). Taken together, sociodemographic characteristics like gender, age, or educational background also need to be considered when understanding differences in public attitudes towards people with mental illness.

With the modernization of Chinese society and increased general levels of education, the stigmatization of mental illness may have decreased, especially among college students. Many colleges hold periodic lectures and workshops on mental illness education and provide resources like telephone hotlines or free psychological counselors that allow students to seek help (Chen & Tong, 2005; Fang, 2019). Nevertheless, misunderstandings about mental illness may persist and lead to implicit negative attitudes towards psychiatric patients. Wang et al. (2012) investigated stigmatization against mental illness among fifty-six Chinese college students and found no evidence of explicit stigma towards mental illness in the sample. Yet the students did express implicit stigma including negative cognitive evaluations (e.g., dangerous, abnormal, and fragile) and emotional reactions (e.g., scared, nervous, and disgust) for psychological disorders like depression, obsessive-compulsive disorder, phobia disorder, and schizophrenia. Thus, considering the nuanced differences between Chinese college students' explicit and implicit stigma, it is still unclear how effective educational programs in Chinese colleges are at decreasing stigmatization towards people with mental illness.

This study aimed to investigate the current picture of stigma and education in a Chinese college and to replicate results from the Western population with Chinese college students. Given the increasing exposure of knowledge related to depression and depressive disorders on Chinese social media in recent years, we hypothesized that participants would prefer less social distance from people with MDD compared to schizophrenia, AUD, or gambling



disorder. Correspondingly, their knowledge of depression would also encourage them to hold more positive attitudes and thus use positive words (e.g., help, pity, etc.) to describe people with MDD compared to the rest three disorders. Female participants would display a desire for more social distance than male students and the students' acceptance towards people with mental illness would decrease with age. Meanwhile, students' exposure to patients with mental health problems (e.g., having relatives with mental illness or having taken courses about psychological disorders) would be associated with a desire for less social distance. Additionally, participants who used more negative words to describe people with mental illness would report a preference for more social distance compared to participants who used more positive words. By analyzing Chinese college students' attitudes towards people with mental illness, we can better understand the current picture of stigmatizing beliefs towards patients with mental health problems in a Chinese cultural context.

## METHODOLOGY

### Participants and Procedures

Data were collected at a public university on the east coast of China. Approval from the Chinese institution was received prior to data collection; the sponsoring institution's Institutional Review Board approved the study procedures. A QR code redirecting to an online questionnaire was sent through WeChat, a social communication application in China, to students studying on the Chinese campus. In total, 314 questionnaires were returned, 301 of which were complete. Participants' ages ranged between 18 and 24 years. Females made up 53% of the sample ( $n = 160$ ) and males made up 47% ( $n = 141$ ). Demographic characteristics for this sample are summarized in Table 1. Class year of participants was as follows: first-year 26% ( $n = 77$ ), sophomores 31% ( $n = 94$ ), juniors 20% ( $n = 60$ ), and seniors 23% ( $n = 70$ ). Over one-third of the participants ( $n = 112$ ) came from an east Province of China, where this study was conducted.

### Measures

The measure used in this study to investigate participants' attitudes towards people with mental illness was the Bogardus Social Distance Scale. It is a seven-point scale that measures the level of closeness people desire towards members from different groups, with higher ratings indicating a lower level of desired closeness. As an old and widely used psychological attitude scale, the Bogardus

Social Distance Scale measures prejudice or underlying feelings between two distinct social groups (Wark & Galliher, 2007). In this study, the Bogardus Social Distance Scale was used to measure participants' attitudes towards people with one of the four representative mental illnesses: MDD, schizophrenia, AUD, and gambling disorder. Taking MDD as an example, seven statements were presented, and participants were asked to choose the closest degree of intimacy they would tolerate with a person diagnosed with MDD. The statements rank from as close as "willing to marry someone with MDD" (1.0) to as far as "willing to have someone with MDD be excluded from associating with your country in any way" (7.0). Specific items from the Bogardus Social Distance Scale are presented in the Appendix.

In addition to the quantitative data collected by the Bogardus Social Distance Scale, qualitative data also were collected to supplement our understanding of participants' attitudes towards people with mental illness. Specifically, participants were asked to provide words that they use to describe people with MDD, schizophrenia, AUD, or gambling disorder. The words collected were then categorized into three groups by the first author: positive attitudes (pity or help), neutral attitudes (behavior description), and negative attitudes (blameworthiness or dangerousness). The concepts of blameworthiness (attributing mental illness to personal responsibility and viewing its cause as a weakness of an individual's personality) and dangerousness (believing people with mental illness are aggressive and are more likely to harm others) come from aforementioned Corrigan et al.'s (2003) path model. Descriptions that used positive words to describe people with mental illness received two points, neutral words received one point, and negative words did not receive any points.

We also collected information about participants' educational exposure to mental illness ("Have you taken any psychology, neuroscience, or other related courses on- or off-campus?"); relationships to people with mental illness ("Do you know someone who has a mental disorder?"); and social media exposure to mental illness ("Have you ever been exposed to information about mental illness on social media?"). Participants received one point for each "yes" response. Their responses to these three questions were added to create an index of "overall exposure." Moreover, we inquired about the participants' school year, age, hometown, and the first mental illness that came to their minds to help explain their attitudes towards people with mental illness. The data were analyzed with IBM SPSS Statistics Subscription Base Edition.



**Results**

**Comparison Among Mental Illnesses**

Most participants reported depression (61.46%) or schizophrenia (22.92%) when asked about the first mental illness that came to their minds, while the rest of the participants reported autism, DID, bipolar disorders, OCD, mood disorders, GAD, or other mental illnesses (Table 1).

*Table 1. Demographic Characteristics of Participants, N = 301*

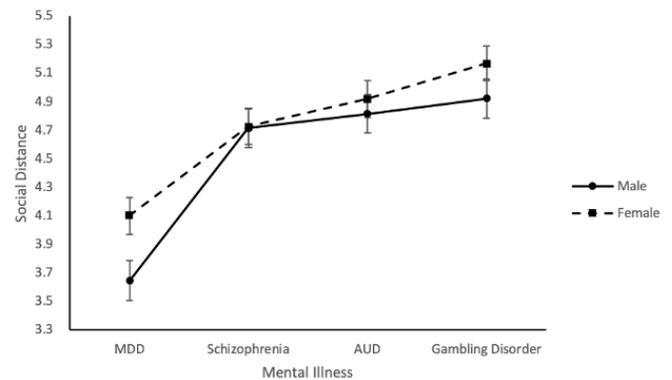
Characteristics	N	Percentage
<b>Gender</b>		
Male	141	46.84%
Female	160	53.16%
<b>School Year</b>		
Freshman	77	25.58%
Sophomore	94	31.23%
Junior	60	19.93%
Senior	70	23.26%
<b>First Mental Illness that Comes to Mind</b>		
Depression	185	61.46%
Schizophrenia	69	22.92%
Autism	14	4.65%
DID	10	3.32%
Bipolar Disorders	8	2.66%
OCD	4	1.33%
Mood Disorders, or GAD	3	1.00%
Other	5	1.66%

A repeated-measures ANOVA with an alpha level of 0.05 was conducted to compare participants’ scores for each rating to the social distance questions. Mauchly’s test indicated that the assumption of sphericity had been violated,  $\chi^2(5) = 72.28, p < .001$ . Therefore, degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ( $\epsilon = .86$ ). The results indicated that there was a significant effect of disorder on participants’ attitudes towards people with mental illness,  $F(2.61, 781.46) = 55.11, p < .001$ . Post-hoc comparison using the Bonferroni correction revealed that participants expressed more positive attitudes towards people with MDD ( $M = 3.89, SD = 1.67$ ) than schizophrenia ( $M = 4.72, SD = 1.58$ ), AUD ( $M = 4.87, SD = 1.64$ ), or gambling disorder ( $M = 5.05, SD = 1.57$ ). These data support our hypothesis that participants would prefer less social distance from people with MDD compared to the rest three psychological disorders. There were no significant differences between ratings for people with schizophrenia, AUD, or gambling disorder (Table 2 & Figure 2).

*Table 2. Means and Analysis of Variance for Social Distance Scale Score by Mental Illness*

Mental Illness		Means	Std. Deviation	N
MDD	Overall	3.890	1.671	301
	Male	3.645	1.670	141
	Female	4.100	1.649	160
Schizophrenia	Overall	4.720	1.584	301
	Male	4.716	1.627	141
	Female	4.725	1.550	160
AUD	Overall	4.870	1.637	301
	Male	4.816	1.620	141
	Female	4.919	1.656	160
Gambling Disorder	Overall	5.050	1.570	301
	Male	4.922	1.622	141
	Female	5.169	1.518	160

*Figure 2. Mean Social Distance Scale Score by Mental Illness (+/- SEs)*



**Effects of Gender and Class Year**

A 2 X 4 X 4 mixed model ANOVA was conducted to explore the effects of gender and class year on participants’ ratings for the disorders. Mauchly’s test indicated that the assumption of sphericity had been violated,  $\chi^2(5) = 70.17, p < .001$ . Thus, degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ( $\epsilon = .86$ ). The results showed that gender, class year, and the interaction between these two variables had no effect on participants’ social distance ratings.

**Effects of Exposure to Mental Illness**

We expected to find a negative correlation between total exposure to mental illness and participants’ scores on the social distance scale. A Pearson product-moment correlation coefficient was computed to assess the relation between participants’ exposure to information about mental illness and their desire for social distance from people with four different disorders. There was no significant



correlation between the two variables; therefore, our hypothesis was not supported. Participants who had higher overall exposure (composite variable of educational exposure, social exposure, and relationship exposure) did not report less desire for social distance. However, there was a positive correlation between participant's educational exposure and their scores for MDD ( $r = .131, N = 301, p = .023$ ) and schizophrenia ( $r = .124, N = 301, p = .032$ ). Thus in the current study, participants who had taken psychology, neuroscience, or other related courses on- or off-campus reported a greater desire for socially distancing towards people with MDD and schizophrenia than those with fewer courses.

### Attribution of Mental Illness and Perceptions of Dangerousness

The words that participants used to describe people with mental health issues were separated and grouped based on the components of Corrigan's path model of stigma towards people with mental illness (Table 3).

Table 3. Valence of Words Used to Describe People with Mental Illness ( $N = 301$ ) and Its Correlation with Desired Social Distance

	MDD	Schizophrenia	AUD	Gambling Disorder
Positive Words				
Help (help, consoling, treatment-needed, etc.)	8	2	0	1
Pity (pitiful, sympathized, regrettable, etc.)	85	24	27	12
Neutral Words	148	66	38	54
Negative Words				
Anger (crazy, fool, sick, lunatic, etc.)	12	25	61	150
Fear (dangerous, terrifying, horrible, violent, etc.)	8	81	102	21
Avoidance (uncontrollable, unpredictable, stay-away, inhospited, etc.)	27	46	44	33
Other	13	57	29	30
Correlation	-.264**	-.320**	-.195**	-.143*

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

We hypothesized that participants would use more positive words to describe people with MDD compared to schizophrenia, AUD, or gambling disorder. We also predicted that participants who used more negative words to describe people with mental illness would report a preference for more social distance compared to participants who used more positive words; participants who used more neutral words would score in the middle. After removing those answers that could not be categorized in any group, we found that participants reported more positive words to describe people with MDD ( $n = 93$ ) than those with schizophrenia ( $n = 26$ ), AUD ( $n = 27$ ), or gambling disorder ( $n = 13$ ), supporting our hypothesis (Table 3). We also ran four Pearson product-moment

correlation coefficients to assess the relation between participants' attitudes towards people with the four mental illnesses and their desired social distance. A negative correlation was found between the valence of words used to describe people with mental illness and participants' desired social distance for all four mental illnesses: MDD, schizophrenia, AUD, and gambling disorder (Table 3), showing that preference for social distance was higher when participants reported more negative characterizations of these illnesses. For MDD, the negative correlation was significant:  $r = -.264, N = 288, p < .001$ . A significant negative correlation between participants' attitudes and preference for social distance also was observed when asking them to describe someone with schizophrenia ( $r = -.320, N = 245, p < .001$ ), AUD ( $r = -.195, N = 272, p = .001$ ), or gambling disorder ( $r = -.143, N = 271, p = .018$ ). In support of our hypothesis, if participants used more positive words to describe people with mental illness, they desired less social distance. Individuals who used neutral words scored in the middle.

### Discussion

Given that cultural and societal factors shape public attitudes towards people with mental illness, findings from studies on stigma with Western samples may not directly apply to a population from an eastern culture. Therefore, the current study investigated Chinese college students' attitudes towards people with MDD, schizophrenia, AUD, or gambling disorder to determine if results from Western samples are similar to, or different from those of a Chinese sample.

First, the results showed that Chinese college students feel more comfortable interacting with people with MDD as compared to people with schizophrenia, AUD, or gambling disorder. This outcome was consistent with our prediction. According to Corrigan et al.'s (2003) stigma path model, the perception of dangerousness is a key factor that increases individuals' desired social distance from people with mental illness. MDD may be perceived as less dangerous compared to the other three disorders, consequently leading to lower social distance. The role of potential dangerousness in shaping Chinese college students' attitudes may be even more potent compared to Western cultures. Traditional cultural values informed by Confucianism may significantly influence Chinese people's perception of mental illness and related stigma (Lam et al., 1996; Lv, Wolf, & Wang, 2013). Unlike schizophrenia, AUD, or gambling disorder that are viewed as outward mental illnesses, MDD is always interpreted as an inward psychological disorder in Chinese society. Therefore,



people with MDD would not be expected to be violent or harmful to others. In the Confucian culture that emphasizes extreme social harmony between individuals, a mental illness with inward symptoms such as MDD is more accepted than disorders with outward symptoms, leading to less desire for social distance. In agreement with this prediction, descriptive data also demonstrated that participants were more likely to use words characterized by pity to describe people with MDD and were less likely to view them as dangerous. This attitude is the opposite of the participants' perceptions about the other three mental illnesses: for example, over one-fifth of participants used words like "dangerous" or "violent" to describe people with AUD. In sum, Chinese young adults may expect people with MDD, a mental illness with more inward symptoms, to be less harmful compared to people with one or more of the other three psychological disorders. This distinction of perceived dangerousness may explain their desire for less social distance.

In the current study, we did not find a significant effect of gender or age on participants' social distance scores. It is important to note, however, according to a meta-analysis of sixty-two European studies, no consistent relation was found between gender or age on individuals' attitudes towards people with mental illness. In the sixty-two studies, women held more negative attitudes in six cases, while in eleven cases the opposite was found. In thirty-two out of forty-three instances there was a positive correlation between age and negative attitudes, whereas in ten age was not associated with attitudes (Angermeyer & Dietrich, 2006). Therefore, evidence for the association between gender/age and individuals' attitudes towards people with mental illness is mixed. Further research on both Western and non-Western samples might further explore the influence of sex and/or gender on public attitudes towards people with mental illness.

Of note, the results suggested a positive correlation between participants' desire for social distance and their educational exposure to MDD and schizophrenia. In other words, compared to those who do not have educational exposure to mental illness, Chinese young adults who had taken associated college-based educational courses were less willing to associate with people who have MDD or schizophrenia. One possible explanation of this result is the cultural-specific understandings and interpretations of mental illness in Chinese society. According to social constructionism, the definition and perception of mental illness are sociological in nature and need to be analyzed against a cultural background (Durkheim, 1982). Chinese people tend to express physical symptoms rather than psychological ones (Liang, 2013; Wu & He, 2013). Thus, the curriculums at Chinese colleges may emphasize the

biological and genetic foundation of mental illness during course instruction. As a result, Chinese students who had taken introductory psychiatry classes may be more likely to attribute mental illness to biological mechanisms (Sun et al., 2013). Nevertheless, biogenetic attributions of mental illness may increase individuals' desire for social distance because of the perception of dangerousness (Dietrich, Matschinger, & Angermeyer, 2006; Lee et al., 2014). Dietrich et al. (2006) found that people who support biogenetic explanations of MDD and schizophrenia desired more social distance because they connected the patients to lack-of-self-control, unpredictability, and dangerousness, which resulted in fearful emotions and avoiding behaviors. Similar results also were found in Germany, which indicates some cultural consistencies (Schomerus, Matschinger, & Angermeyer, 2014). Therefore, because of the distinct understanding and interpretation of psychological disorders in Chinese society, Chinese young adults with associated educational backgrounds may attribute mental illness to biogenetic factors, leading to a greater desire for social distance from people with mental health problems.

Moreover, in accordance with Corrigan et al.'s (2003) path model, participants desired more closeness with someone with mental illness if they associated positive words with them, while negative descriptions were correlated with a greater desire for avoidance. The current study found that participants who used words containing emotions like fear, anger, and avoidance expressed less acceptance towards people with mental illness, whereas those who felt pity and desired to help were less likely to prefer social distance. This finding indicates the validity of Corrigan et al.'s (2003) theory of public stigma towards people with mental illness with a Chinese sample. The negative influence of perceived dangerousness and blameworthiness on people's desires of social distance has been found in many cultures including Italy, Spain, and Japan (Kashihara, 2015; Muñoz, Guillén, Pérez-Santos, & Corrigan, 2015; Pingani et al., 2012). Results from this study replicating Corrigan et al.'s (2003) theory with a Chinese sample demonstrated the cultural consistency of this finding.

Finally, participants' total exposure to mental illness, a variable combining educational, social, and relationship exposure, was not associated with their preference for social distance. This result may be understood by considering previous research suggesting diverse effects of different types of knowledge exposure. Many studies investigating specific types of mental health knowledge exposure have shown both positive and negative associations between knowledge exposure and individuals' attitudes towards people with mental health issues. For



example, mental health knowledge dissemination on social media such as anti-stigma campaigns have had a significant impact on improving public attitudes, reducing stigma towards people with mental illness, and increasing help-seeking behaviors (Betton et al., 2015; Henderson et al., 2017; Livingston, Cianfrone, Korf-Uzan, & Coniglio, 2014). Bizub and Davidson (2011) found that befriending people with psychological disorders under a college course requirement help improve students' stigma-related stereotypes towards these individuals. This friendship also offers the students a more empathic understanding of the life experiences of someone who needs mental health care. A psychiatric internship may also reduce nursing students' stigma and social distance towards people with mental illness (Vaghee, Lotfabadi, Salarhaji, Vaghei, & Maryam, 2018).

Nevertheless, psychoeducation about mental illness is not always effective in reducing stigmatizing beliefs. A recent study gave twenty-eight physician assistant students a three-hour substance use curriculum including lectures and discussions. The post-intervention tests showed that students' attitudes towards people with substance use disorders did not improve much and remained negative, showing the persistence of negative attitudes towards people with mental illness (Crapanzano, Vath, & Fisher, 2014). This finding also was cross-cultural. Sun et al. (2013) found that Chinese students who had attended a psychiatry introductory course continued to hesitate to socialize with people with mental illness. Inappropriate exposure such as misleading information on social media that attributes mental health problems to personal responsibility may even exacerbate stereotyping and discrimination towards people with mental illness such as MDD and obesity (McClure, Puhl, & Heuer, 2011; Scholz, Crabb, & Wittert, 2014). Taken together, these findings suggest that different types of mental-illness exposure can lead to distinct results and directly combining different types of exposure together does not necessarily suggest a combined positive effect on respondents' attitudes towards people with mental health problems. Therefore, educational programs focused on improving public attitudes towards people with mental illness must be designed and evaluated carefully so as to decrease the chances of reinforcing stigmatizing beliefs.

Limitations of the current study must be acknowledged. First, like other types of self-reports, the Bogardus Social Distance Scale can only assess people's attitudes, not their behaviors. How people *think* about individuals with mental illness does not necessarily represent how they will *behave* during face-to-face interactions. Stigma refers to the experience of being discriminated against or stereotyped,

and this experience is based on others' behavior towards people with mental illness (Corrigan & Watson, 2002). Thus, in order to understand public stigma in real-world circumstances, manifest indicators need to be included in future studies to measure people's observable behaviors. Second, this study used a relatively small sample of college students who do not represent the general public in Chinese society. Relatedly, because the school is a local notable university and most participants are from the same Province, the findings have somewhat limited generalizability. Studies that include a larger population from distinct areas would help form a more comprehensive picture of the issues of public stigma towards people with mental illness in China. Third, the cross-sectional nature of the study ruled out the conclusions of causal relationships. Longitudinal studies should be conducted to explore the causal connections between exposure to mental-health knowledge and individuals' attitudes towards people with mental illness. Fourth, gambling is illegal in China and, recently, lawmakers reinforced its illegitimacy. Thus, unlike people with other three mental illnesses, individuals who are diagnosed with gambling disorder may face other unknown negative attitudes because of the legislation. Fifth, as a supplement of the Bogardus Social Distance Scale, this study used a subjective method to assess participants' attitudes towards people with mental illness. Although the analysis was informed by Corrigan et al.'s (2003) path model, this process of categorization was subjective and completed by only one rater; thus, our categorization might not have accurately reflected the participants' intended expressions and it was not possible to calculate interrater reliability. Future studies could use more objective measures like the Attribution Questionnaire-27 (AQ-27) to examine individuals' emotional responses and discriminatory reactions to people with mental illness (Corrigan, Watson, Warpinski, & Gracia, 2004).

## Conclusion

Considering the cultural and societal impact on individuals' understanding of mental illness, it is important to investigate the public attitudes towards people with psychological problems to better understand stigma and its effects. Although researchers have demonstrated the influence of stigma on individuals' attitudes towards psychiatric patients among Western samples, it is still unclear whether similar negative perceptions of mental illness influence individuals' attitudes in non-Western countries. Based on the results of this study, Chinese college students felt more comfortable associating with people who were diagnosed as MDD compared to



schizophrenia, AUD, or gambling disorder. Gender and age did not display a significant effect on participants' social distance scale scores, suggesting the necessity of more in-depth research in the future. Importantly, this study found that Chinese young adults who had taken psychology, neuroscience, or other related courses showed less social acceptance of people with MDD or schizophrenia. This outcome may be due to the influence of biogenetic attribution on interpretations of mental illness in Chinese society and educational programs in Chinese colleges, showing the significance of cultural and educational impacts on individuals' perception and attribution of mental health problems. Additionally, this study supports Corrigan et al.'s (2003) path model of public stigma towards people with mental illness on a non-Western sample. It also points out the significance of measuring different types of mental-illness exposure separately to parse the complex combined effect of diverse mental-illness exposure on the public. To conclude, this pilot study should be followed by additional research that replicates results from Western samples with Chinese samples. By investigating Chinese people's attitudes towards people with mental illness, researchers can provide a more comprehensive picture of public stigma around mental illness in a particular societal and cultural context.

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#### Appendix. The Bogardus Social Distance Scale for MDD

1. Would you be willing to marry someone with MDD? (1.0)



2. Would you be willing to have someone with MDD as your close personal friend? (2.0)
3. Would you be willing to have someone with MDD as your neighbor? (3.0)
4. Would you be willing to have someone with MDD as your colleague at work? (4.0)
5. Would you be willing to have someone with MDD as a citizen of your country? (5.0)
6. Would you be willing to have someone with MDD visit your country as a non-citizen? (6.0)
7. Would you be willing to have someone with MDD be excluded from associating with your country in any way? (7.0)