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The Stigma of Depression Across Cultures: The Role of Theory of Mind

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Abstract

Stigma has a significant negative impact on individuals with mental health problems. The etiology, expression and conceptualization of stigma varies across cultures and is affected by factors such as levels of acculturation, individualism, and collectivism. To date, most studies have conflated culture with ethnicity or have measured it in a limited way without exploring interactive mechanisms of action that affect the proliferation of stigma. To address these gaps in the research, the goals of the present study were: 1) To evaluate cross-cultural differences in the relationships between etiological beliefs about mental illness, specifically depression, and stigmatizing attitudes and beliefs; and 2) To evaluate the role of theory of mind, perspective-taking and empathy in the stigma process and to compare this relationship between a Western and an Eastern culture.

392 university undergraduate students were recruited across three cultural groups: European Canadians (n = 169), Chinese Canadians (n = 167), and Hong-Kong Chinese (n = 56). The three groups were compared on measures of attitudes toward those with depression and toward seeking help for mental health problems, mental illness stigma, beliefs about where depression comes from, empathy and perspective-taking abilities, symptoms of depression, levels of acculturation, self-construals, and a behavioural task of social perception.

The findings revealed significant cross-cultural differences in acceptance of depression, willingness to seek treatment for it, understanding of where depression comes from, and overall mental illness stigma. In addition, empathy, but not perspective-taking, was found to moderate the relationship between etiological beliefs of depression and stigmatizing beliefs. This mechanism of action also appeared to vary cross-culturally.

The results of the study support the utility of explicitly measuring differences in facets of culture rather than ethnicity alone, as well as levels of acculturation and enculturation in

investigations of mental illness stigma and theory of mind. The findings are discussed regarding their implications for cross-cultural theory of stigma, research, and clinical practice with recommendations for future research.

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List of Abbreviations

Abbreviation	Definition
ANOVA	Analysis of Variance
ANCOVA	Analysis of Covariance
ATD	Attitudes toward Those with Depression
ATSPH	Attitudes toward Seeking Professional Psychological Help: A Shortened Form
BIF	Background Information Form
CCDSS	Cross-Cultural Depression Stigma Scale
CES-D	Center for Epidemiologic Studies – Depression Scale
EQ	Empathy Questionnaire
FAE	Fundamental Attribution Error
M	Mean
MISS	Mental Illness Stigma Scale
RCT	Randomized Controlled Trial
RFD	Reasons for Depression
RPS	Research Participation System
SCS	Self-Construal Scale
SD	Standard Deviation
TASIT	The Awareness of Social Inference Task
ToM	Theory of Mind
VIA	Vancouver Index of Acculturation
WHO	World Health Organization

Introduction and Literature Review

1.1 Impact of Stigma

Stigma related to mental health can be defined as a negative characteristic or feature associated with a person who has been diagnosed with a mental health or substance use disorder (Link & Phelan, 2001). Stigma can also be applied to an individual who demonstrates signs or symptoms of a disorder, even if they do not meet formal diagnostic criteria, or it they are assumed to suffer from such an affliction. Mental health stigma is a virulent process that can be equally as or more harmful than the symptoms and corollaries associated with a psychiatric or substance use disorder (Corrigan & Penn, 1999).

The pervasive consequences of mental health stigma are evident in access to health care service, as individuals with a diagnosed mental illness and/or substance use disorder are significantly less likely to be referred for specialist medical services (e.g., cardiac services) relative to individuals without a label (Druss et al, 2000). Discriminatory behaviours are a common and damaging, but not an essential component of the stigma process (e.g., Link & Phelan, 2001). Despite the proliferation of interventions and education programs (e.g., Mehta, Kassam, Leese, Butler, & Thornicroft, 2009; see also Angermeyer, Matschinger, Carta, & Schomerus, 2014) to combat the deleterious effects of stigma, it continues to pervade society. In fact, mental illness stigma has increased since 1956, and continues to be maintained (Phelan et al., 2000; Pescosolido et al, 2000) despite significant increases in mental health literacy (Schomerus, Schwann & Holzinger, 2012). One unfortunate and initially unforeseen contribution to the maintenance of stigma is the anti-stigma interventions themselves. Specifically, in an effort to reduce stigma the interventions have instead had the unintended consequence of increasing some individuals' stigma.

1.2 Universality of Stigma

Mental illness stigma is a social construction and therefore, the reasons for denigrating and devaluing a particular person are influenced by cultural context, if not specific to a particular culture (Hinshaw, 2009). Cultural norms determine what behaviours, symptoms, signs, and dysfunctions are deemed deviant or abnormal and subjected to mental illness stigma (Abdullah & Brown, 2011). Consequently, while mental illness stigma is ubiquitous, there is variability in terms of what constitutes disapproval and shame by others and the subsequent prejudice and discrimination from the individual's community (Hinshaw, 2009). Given that the labels, behaviours, signs and/or symptoms for stigmatizing an individual for having a mental illness are unique to a specific culture, cultural differences inevitably exist in mental illness stigma. Characteristics that are stigmatized may be arbitrarily chosen and become reified through cultural norms (Fabrega, 1991; Ng, 1997). Nevertheless, these characteristics are amendable to change as new norms, mores, customs, and laws are introduced and permeated through the culture (e.g., homosexuality was previously considered a mental illness in North American psychiatric diagnostic systems; American Psychiatric Association, 1980).

There is a growing body of theoretical and empirical research that indicates the presence of cross-cultural, or perhaps more accurately ethnic and/or racial, differences in mental illness stigma. Research on the stigmatization of mental illness across cultures has typically found a pattern where samples of non-European descent (e.g., Asian-Pacific Islanders, African Americans, Japanese and Hispanics) endorse more stigmatizing attitudes and beliefs as well as a preference for social distance compared to samples of European descent (Anglin, Link, & Phelan, 2006; Rao, Feinglass, & Corrigan, 2007; Fogel & Ford, 2005; Griffiths et al., 2006; Whaley, 1997). The belief that individuals with mental illness are dangerous may partially explain some of the differences in stigma. Investigators have found that African Americans have

a stronger tendency to endorse beliefs or stereotypes of dangerousness (Anglin et al., 2006; Rao et al., 2007). On the other hand, Latinos are less likely to report a preference for social distance and less likely to endorse beliefs of dangerousness relative to European heritage samples (Rao et al., 2007).

Mellor and colleagues' (2013) studied the role of culture in the degree and nature of mental illness stigma. Their study demonstrated that Taiwanese participants held the greatest degree of stigmatizing attitudes followed by Chinese immigrants to Australia and then Australians. The authors found that greater adherence to Australian cultural norms and values were associated with fewer stigmatizing attitudes. Similarly, Chaudhry and Chen (2019) found greater courtesy stigma (i.e., stigma that extends to a consumers' family members; Moses, 2014) among South Asian Americans relative to European Americans. However, courtesy stigma was endorsed to a similar degree between East Asian Americans and both cultural groups. Together, the above findings support the notion of intracultural variability in the stigma experience, which must be considered when conceptualizing the stigma process. Of importance, both studies did not exclusively rely on participants' ethnicity as a measure of culture, which is often a limitation of previous research. Instead, participants' cultural values were assessed. Studies such as these contribute to the understanding that culture significantly influences the stigma process. Collectively, these findings provide evidence for cultural variation in mental illness stigma, and further highlight the importance of considering the role of culture when investigating mental illness stigma.

1.3 Conceptualizing Culture

Although culture appears to be relevant to the expression of stigma, variability exists in how people conceptualize culture, particularly among laypersons (Kao, Hsu, & Clark, 2004). This type of variability likely contributes to the emergence of divergent conclusions about the

role of culture in mental health (Kao et al., 2004). Nevertheless, Murray (2015, p. 570) defines culture as "the way a people live, the rule of behavior promoted, and the conduct they set for themselves." Given this definition, a categorical variable like ethnicity or race cannot possibly be expected to capture the complexities of culture (e.g., language, customs, rules or/and laws, values, traditions, historical background etc.) adequately or accurately. An important dimension of culture that captures relative differences among cultural groups at the level of society (but not at the level of the individual) is the individualism and collectivism model (Triandis, 2001). This model postulates that individualistic cultures, such as cultures in Western Europe and Canada, have a tendency to value and prioritize an individual's autonomy, personal success and wellbeing ahead of others (Triandis, 2001). By contrast, collectivistic cultures, best epitomized by Eastern cultures like China, have a tendency to place the values of the group ahead of the self in favour of social harmony and relationships (Triandis, 2001).

While the individualism and collectivism model captures culture at the societal level, self-construals have been proposed as a way to operationalize culture at the level of the individual. Singelis (1994, p. 581) proposed that a self-construal is a collection of "thoughts, feelings, and actions concerning one's relationship to others, and the self as distinct from others." Two self-construals were proposed to reflect the collectivist or individualistic oriented cultures outlined by Triandis. Persons who hold an interdependent self-construal are more likely to develop in a collectivistic culture, whereas an independent self-construal will predominate in individualistically oriented cultures (Markus & Kitayama, 1991). Individuals who endorse an interdependent self-construal tend to see themselves as connected to others, and they therefore value conformity and respect for their social community. Conversely, an independent self is more unconnected and distinct from others in the social community. Individuals who endorse an

independent self-construal tend to value self-expression and the attainment and recognition of personal goals and achievements. Markus and Kitayama (1991) contend that since self-construals are conceptually independent, individuals can adhere to both types of self-construals to differing degrees.

Both levels of acculturation and adherence to self-construals operationalize different and unique facets of culture at the level of the individual but neither captures all dimensions of a culture. There are likely several cultural determinants of mental illness that are not captured by these constructs. However, the field has generally accepted the individualism and collectivism model and self-construals as a meaningful way to differentiate amongst cultures (Oyserman, Coon, & Kemmelmeier, 2002; Shulruf, Hattie, & Dixon, 2007; Ryder, Alden, & Paulhus, 2000; Singelis, 1994).

1.4 Causal Models of Mental Illness

Cross-cultural variations in etiological beliefs related to mental illness may be one explanation for the observed international differences in stigma. Anti-stigma campaigns have largely been informed by attribution theory, which proposes that the level of stigmatizing beliefs and attitudes toward a person with mental illness is based in part by what one perceives to be the cause of that illness (Weiner, Perry, & Magnusson, 1988). The attribution may be of biogenetic/biomedical origin or of psychosocial origin. The biomedical model asserts that a mental disorder is the result of neurobiological, chemical or organic causes that are beyond the control of the individual (Loughman & Haslam, 2018) Thus, the origin of the mental disorder is innate rather than acquired from an external variable (e.g., negative life event). This model is akin to the medical model or a neuroscientific explanation whereby mental illnesses are reduced to biological bases or biological predispositions (Loughman & Haslam, 2018). The biomedical model was intended to remove responsibility from the individual and direct it toward a biological

cause that is beyond the control of the individual. Reduced responsibility could conceivably diminish stigma. By contrast, the psychosocial model contends that an individual likely suffers from mental illness due to the presence of a negative life event(s) or an environmental stressor(s). The current body of literature is mixed with respect to whether adherence to a psychosocial compared to a biomedical model reduces stigma related to mental disorders. The interaction between etiological beliefs and stigma appears to be dependent on several factors that researchers are only beginning to investigate, such as the type of the diagnosed mental disorder (e.g., depression relative to schizophrenia).

Disparate findings have emerged with regard to whether adherence to a psychosocial etiological model of mental disorders reduces stigma. Early evidence suggested that adherence to a psychosocial causal model of mental disorders was associated with fewer stigmatizing attitudes (Lam, Salkovskis, & Warwick, 2005). However, more recent research suggests that the patterns of stigma are more complex. For example, higher social acceptance is associated with schizophrenia when the onset of the disorder is believed to be the result of stress. When depression is believed to have been caused by childhood adversity, lower social acceptance is observed (Schomerus, Matschinger, & Angermeyer, 2014).

Traditionally, biological labelling or attribution of mental illness has been thought to be associated with a reduction in stigma since it confers the idea that the person is not to blame for their mental illness and the associated sequalae. Consequently, many anti-stigma interventions adopt the message of "mental illness is an illness like any other" (Read, Naslam, Sayce, & Davies, 2006). However, aggregate evidence for the effect of biological attributions on stigma has been mixed. For example, it appears that biological or neuroscientific explanations of mental illness reduce blame from the stigmatizing individual toward the person with mental illness, but

at the same time induce pessimism about recovery (Kvaale, Naslam, & Gottdiener, 2013). Similarly, biological explanations do not appear to affect desire for social distance and may in fact increase the perception that people with psychological problems are dangerous since they are not in control of the mental illness. In other words, biological explanations reduce some aspects of stigma, but have no effect on others.

Other research has shown that attempts to promulgate a biomedical model has led to increased stigma due to perceptions of the permanence of the disorder (Phelan, 2005; Read, Haslam, Sayce & Davies, 2006), uncontrollability (Corrigan, 2007), and dangerousness (Pescosolido et al., 2010). For example, a number of studies have demonstrated that in Western samples, adherence to a biomedical causal model of mental illness has been associated with greater stigma toward individuals who had received psychiatric treatment for schizophrenia (Pattyn, Verhaeghe, Sercu & Bracke, 2013). Adoption of the biomedical model is also generally associated with greater social distance toward individuals with schizophrenia or depression (Schomerus, et al., 2014; Pescosolido, et al., 2010; Rüsch, Todd, Bodenhausen, & Corrigan, 2010). However, a biogenetic attribution to alcohol dependence (Schomerus et al., 2014) and bipolar disorder (Ellison, Mason, & Scior, 2015) has been found to be associated with less social distance; and conceptualizing depression as a chemical imbalance compared to a biopsychosocial model has been found to result in less self-stigma (Deacon & Baird, 2009). Therefore, the stigma process and its moderators, in this case a biomedical causal attribution model, are at least partially dependent on the disorder in question. Importantly, despite any empirical findings of the impact of attributions, the general public surveyed across multiple international samples continues to prefer psychosocial explanations for severe mental illness (e.g., stress, emotional and cognitive factors) to biogenetic explanations (Read, et al., 2006). As such, there is wide

variability in how mental illness is attributed, what effect the attribution has, and how attribution theory should be incorporated into stigma intervention efforts.

1.5 Cultural Variations in Etiological Beliefs

Further complicating the research is the apparent cross-cultural variability of attributions. Research has found that Asian individuals hold divergent beliefs regarding the etiology of mental illness relative to Western populations. For example, weak character, punishment from supernatural beings (Lam, Tsang, Chan, & Corrigan, 2006; Lauber & Rössler, 2007), physical ailments (e.g., discolouration of the tongue; Ngai et al., 2014), hereditary defects (Chen, 2005), magical-religious-supernatural causes and stress (Yeung, Chang, Gresham, Nierenberg, & Fava, 2004; Philips, Li, Stroup, & Xin, 2000) have all been cited as potential causes of mental illness in Asian samples. Increased responsibility for the cause and maintenance of the mental illness has also been found whereby members of society endorse beliefs that those suffering from mental illness have the power to cure themselves if they simply chose to be cured (Lam et al., 2006). By contrast, Lauber, Falcato, Nordt and Rössler (2003) found that a Swiss sample endorsed psychosocial stress (e.g., interpersonal conflicts) or an existing illness as the cause of depression. Similarly, European Canadian and Chinese Canadian undergraduate students have been found to understand and attribute depressive symptomatology to different causes (Vargas, Dere, Garcia, & Ryder, 2019): European Canadians endorsed psychological explanations (i.e., a cause is attributed to an outside event) while Chinese Canadians evidenced a greater tendency to pathologize symptoms and endorse moralizing explanations (i.e., attributions that suggest greater responsibility for a cause; Vargas et al., 2019). Etiological beliefs about mental illness may therefore be culturally driven and reified through traditions, norms, assessment and treatment. The subsequent degree of responsibility an individual is assumed to hold for his or her mental illness based on the chosen etiological belief is likely also attributed to cultural or ethnic

differences.

Immigrants educated in the traditional North American or Western European school system are likely to have been exposed to traditional Western norms, values, rules, and practices (e.g., through peer interactions, curriculum etc.) leading to more acculturated views than recently immigrated individuals. Conceivably then, highly acculturated Chinese-Canadians are more likely to adhere to Western etiological models of mental disorders (c.f., Lin, 2012). Yet, Ngai, Bozza, Zhang, Chen and Bennett (2014) found that Chinese undergraduate students living in the United Kingdom endorsed similar levels of characteristically Western beliefs about the etiology of anxiety, depression and schizophrenia as did individuals living in China. Furthermore, the Chinese undergraduates endorsed a mixed model of equally Western and Chinese traditional views of mental disorders. However, studies such as those by Lin and Ngai et al. did not assess levels of acculturation (i.e., identification with mainstream culture), which makes it difficult to conclude how acculturated the samples are, and how similar or different they are to their Chinese counterparts.

Given that individuals from Chinese cultures are more likely to adhere to an interdependent self-construal and hold Confucian beliefs and values, it is not surprising that mental disorders are highly stigmatized. From a Confucian perspective, a mental disorder renders one an ineffectual member of society or the group (c.f., Lam, et al., 2010). An inability to uphold one's duties and social responsibilities is likely to result in a loss of face in Chinese culture, which may contribute to a loss of relationships and ultimately isolation as one loses status (Aslani et al., 2016; Lam et al., 2010). The dishonor and loss of status attached to the individual with the mental disorder can further mar the status of their family (i.e., immediate family members, distant relatives, ancestors, and future generations; Lin, 2012) - a secondary, but

equally discrediting consequence of the stigma process (Lam et al., 2010). The notion that stigma can generalize from the relative suffering with a mental illness and impact family members, and potentially the larger society or culture, has been labeled courtesy stigma (Goffman, 1963). Beliefs about potential contamination from the stigmatized relative can reinforce the stigma process for the person with the mental illness, but also serve as the impetus for stigma toward the family. The fear of facing similar cultural opprobrium leads to the act of concealment, and ultimately impedes recovery from a mental health illness (Chen et al., 2014; Gulliver, Griffiths, Christensen, 2010; Lu, Dear, Johnston, Wootton, & Titov, 2014; Lv, Wolf, & Wang, 2013; Overton & Medina, 2008; Hoge et al., 2004).

It is relatively well established that stigma negatively influences an individual's decision to seek professional help for symptoms of psychopathology (Clement et al., 2015; Corrigan, Druss, & Perlick, 2014). This finding is particularly relevant in Asian cultures, where revealing one's mental disorder may result in a loss of face for the individual and his/her family (Tieu & Konnert, 2014; Yang, Kleinman, Link, Phelan, Lee, & Good, 2007). For example, Lin (2012) found that being mentally ill is highly discordant with not only the Chinese culture, but also the Chinese belief that Westerners perceive their cultural group as the model minority. Due to the devastating consequence of revealing one's mental disorder, Asian individuals evidence a strong tendency to conceal mental disorders, whether it is an individual concealing his or her own symptoms or the family concealing another member's diagnosis (Furnham & Chan, 2004). The tendency to conceal symptoms and dysfunctions of mental illness culminates in the decreased likelihood of seeking psychological services.

1.6 Theory of Mind Abilities: Empathy and Perspective-Taking

Although attribution theory plays an important role in the cross-cultural expression of stigmatizing attitudes, theory of mind (ToM) is another theoretical construct that may be just as

important. Theory of mind is the cognitive ability or capacity to infer the mental state of other persons in relation to your own. As such, theory of mind includes cognitive components such as thinking, beliefs, and attitudes (Premack & Woodruff, 1978). Said differently, ToM is our ability to see the world through the eyes of another person and engage in perspective-taking. Since the theory was first proposed, a significant body of research has highlighted the role of ToM in understanding intentions, monitoring others' behaviours, and the formation of beliefs about others throughout the lifespan (Davies & Stone, 1995; Gallese & Goldman, 1998; Perner, 1991; Scholl & Leslie, 1999). ToM has also been extensively highlighted as being deficient in individuals with difficulties with social interaction, regardless of the etiological cause. For example, impaired ToM has been described in a variety of mental disorders that display social deficits such as autism spectrum disorders (Baron-Cohen, 1995), schizophrenia (Brune, 2005), adults with frontal lobe damage (Stuss, Gallup Jr., & Alexander, 2001), antisocial personality disorder (Richell et al., 2003), and bipolar disorder (Kerr et al., 2003). As such, theory of mind appears to be important for relating to others and understanding their perspective.

The connection between theory of mind and stigma is best explained by Gordon Allport's contact hypothesis within his intergroup contact theory (Allport, 1954). In this seminal work, he hypothesized that prejudice between groups can be reduced via interpersonal contact between rival group members. Since the original proposal, a number of psychological processes have been hypothesized as the mechanisms of action that lead to the reduction in prejudice, such as new knowledge about the outgroup compared to one's ingroup (Allport, 1954), and reduction of perceived anxieties and fears about the behaviours of the group (Stephan & Stephan, 1985). Most importantly, one of the main reasons that prejudice may be reduced via contact is that it increases the ability for individuals to take the perspective of the other group and empathize with them

(Stephan & Finlay, 1999).

Allport's theory has received support in aggregate empirical evaluations. For example, Pettigrew and Tropp (2006) subjected 515 studies to a meta-analytic review of intergroup contact and its effect on the reduction of prejudice. They found strong support for the contact hypothesis, which is that intergroup contact, for example contact between individuals with mental disorders and individuals without mental disorders, is associated with decreased prejudice and improved relationships. A follow-up meta-analysis revealed that the three most significant mediators of prejudice reduction were anxiety reduction, knowledge of the group, and empathy and perspective-taking (Pettigrew & Tropp, 2008). Given Pettigrew and Tropp's (2008) finding that empathy and perspective-taking are prevalent mediators in prejudice, and that individuals with greater contact with mentally disordered individuals evidence more favourable attitudes, it is conceivable then that empathy and perspective-taking play a role in the stigma process. It is likely that direct contact with an individual with a mental disorder provides the opportunity for non-mentally disordered individuals, or the perceiver, to garner information that disconfirms stereotypes and biases by affording the perceiver the opportunity to acquire the perspective of the mentally disordered person leading to an empathic response. Empathetic perceivers will conceivably hold more favourable attitudes toward individuals with a mental disorder. In this way, empathy and perspective-taking are likely mechanisms that exert an influence on the stigma process. More specifically, the proclivity to take another's perspective may influence an empathetic response, and in turn reduce stigmatizing attitudes and beliefs. Both constructs are associated with theory of mind abilities. As such, these two constructs should be examined in the context of the other, as together they likely can better explain stigmatizing attitudes and beliefs than in isolation from each other.

Some researchers have argued that theory of mind abilities develop differently across cultures; that Western conceptions of the mind do not develop in the same way as non-Western conceptions. However, this argument has been evaluated only in a limited manner in cross-cultural research. All of the existing research has been carried out with children in order to understand the developmental trajectory of ToM rather than its impact on specific behaviours in adulthood. For example, a comparison study of theory of mind abilities across five countries (Canada, India, Peru, Samoa, and Thailand) found that the onset of such abilities and reasoning in children appears to emerge at approximately a similar age (5 years old) in every culture that was studied (Callaghan et al., 2005). The same result was replicated in a meta-analysis of theory of mind development in Chinese and North American children: children across both types of cultures appear to develop theory of mind abilities in a parallel fashion (Liu et al., 2008). However, the same study also found that the trajectory of this development can vary with regard to exactly when it happens by as much as two years in children, depending on ethnicity.

When it comes to the expression of ToM abilities rather than their formation, some evidence exists that children in collectivist cultures such as China perform worse on age-appropriate tests of theory of mind than their Western counterparts in North America (Wang, Devine, Wong, & Hughes, 2015). This observed difference may be important for the stigma process in adulthood given that cross-cultural differences have also been observed in the fundamental attribution error. The fundamental attribution error (FAE) is the tendency for individuals to attribute others' behaviours as being a result of dispositional factors such as attitudes, personality and aptitude, while minimizing the role of situational or contextual explanations for that behaviour (Ross & Nisbett, 1991).

Applied to mental illness, the commission of FAE results in the attribution of behaviors

that may be related to mental illness to the person's character or personality while discounting the role of factors outside of that person's control such as biology and social context. The nature of FAE has been increasingly shown to differ across cultures, typically indicating that individuals from collectivist, Eastern cultures such as China tend to focus less on dispositional factors when it comes to attribution and more likely to provide social explanations for the illness that are outside of the person's control (Choi et al., 2003; Mason & Morris, 2010; Morris & Peng, 1994). Combined with the literature on differences in theory mind trajectories, the FAE cross-cultural findings suggest that the human perception of others' behaviour, for example mental illness, is not a universal construct, but instead reflects the unique norms and belief structures of Western versus Eastern cultural traditions. Despite this evidence, the nuanced mechanisms of interaction between theory of mind, attribution processes, and stigma in mental health are poorly understood.

1.7 Erasing Stigma: Anti-Stigma Interventions

Anti-stigma interventions are designed to promote lasting and meaningful reductions in stigma. Several types of anti-stigma interventions have been developed and evaluated, including but not limited to, mental health literacy campaigns that strive to correct myths surrounding mental illness, policy level announcements, self-stigma interventions in the form of cognitive-behavioural interventions, and contact with an individual with lived experience (e.g., Corrigan, 2017; Dobson, Szeto, & Knaak, 2019; Szeto & Dobson, 2010). The most relevant type of intervention for the purposes of the present study is person contact as a medium for stigma change because this type of intervention relies on the use of Theory of Mind, perspective-taking and empathy as theoretical mechanisms of action (Knaak, Modgill, & Patten, 2014). Contact with someone with lived experience provides opportunities to challenge negative stereotypes. Such contact incorporates an exchange of interactions that presumably challenge stigmatizing

beliefs and attitudes by affording the opportunity for the person with stigma beliefs who receives the intervention (hereinafter referred to as *attendee*) to personally conclude whether the person with the mental illness (hereinafter referred to as *consumer*) conforms to stereotypical beliefs. This contact can subsequently promote the formation of new, less stigmatizing and stereotypical beliefs in the attendee. Interpersonal contact necessarily requires the willingness of someone to disclose their personal challenges with a mental illness, which carries the risk of increased stigma if the interaction serves to reify stigmatizing beliefs. As such, observable unintended consequences such as harm in the form of stigma maintenance and/or an increase in stigmatizing attitudes and beliefs may occur as a result of the use of anti-stigma interventions.

The main mechanisms of action for contact interventions are thought to be reduction of anxiety related to seeing mental illness and increasing empathy (Pettigrew & Tropp, 2008). This mechanism of change is typically thought to be accomplished via several key ingredients that have been identified as indicators of best practice in contact anti-stigma interventions (Corrigan et al., 2014). For example, proponents of this type of intervention suggest that contact must be face-to-face, and that a comprehensive discussion must occur between the attendee and the consumer regarding the consumer's symptoms, struggles and recovery process (Corrigan et al., 2014). However, other research teams investigating this topic have suggested that anti-stigma contact interventions do not require face-to-face contact and that indirect or even imagined contact with the stigmatized person or group of persons may be beneficial in reducing stigmatizing attitudes (Reinke et al., 2004; Turner et al., 2007). Still others suggest that multiple interactions or repeated points of contact may be needed to have an effect (Knaak et al., 2014). Consequently, there is not a clear set of agreed upon mechanisms of action when it comes to contact interventions.

The mixed evidence regarding how contact with mental illness reduces stigma extends to the efficacy literature for this type of intervention. A large number of studies have investigated whether contact interventions have an impact on stigma and the results have not been consistent. The most recent systematic review and meta-analysis of interventions to reduce stigma toward people with severe mental illness evaluated the impact social contact interventions across 62 randomized controlled trials (RCTs; Morgan et al., 2018). The authors found small-to-medium immediate effects of contact interventions on reducing stigma, but such benefits were not sustained long term. Another systematic review and meta-analysis of 72 studies of education or person contact anti-stigma interventions showed that adults benefited two to three times more from person contact relative to an education approach; however, the reverse was true for adolescents where education was more effective (Corrigan, Morris, Michaels, Rafacz, & Rusch, 2012). A follow-up study of the same reviewed literature found that the effects of stigma change from interpersonal contact at follow up (median follow-up time was two months) were superior to educational efforts (Corrigan, Michaels, & Morris, 2015). Similarly, evidence from a review of 35 articles of stigma change from a variety of brief interventions (3 to 4 sessions) found interpersonal contact was most effective at diminishing mental illness stigma in university students from the United States or United Kingdom compared to other countries (Yamaguchi et al., 2013). There was also a lack of evidence for long-term effects of the intervention or for having a positive impact on actual behaviours (compared to beliefs).

Conversely, other reviews have not found support for the use of social contact in stigma interventions. Mehta and colleagues (2015) reviewed 80 studies with a specific restriction on including medium or long-term follow-up studies. Although they found modest evidence for the effectiveness of anti-stigma interventions in the follow-up beyond one month, they concluded

that interventions which contained social contact (regardless of whether it was direct or indirect) were not more effective than those without social contact. Given that stigma is often experienced as a long-term difficulty, the result paints an inconsistent picture about the effectiveness of social contact interventions, particularly in the long-term.

How can multiple reviews of similar types of studies find divergent results? One possibility is that the mediating factors of how successful social contact is in reducing stigmatizing beliefs and attitudes are complex and contextually dependent, including the culture and recruitment region of the sample. Mere exposure, and a comprehensive discussion with the individual with mental illness may not account for variability in outcomes. For example, person contact appears to work better for adults than it does for adolescents (Corrigan et al., 2012); and providing attendees with biological explanations of mental illness during an intervention leads to less stigmatizing attitudes compared to a psychosocial explanation, but also increases desire for social distance (Morgan et al., 2018). Therefore, it is not fully explained exactly why or how social contact or indeed, any kind of stigma intervention operates to reduce stigmatizing attitudes given that developmental factors such as age and contextual/cognitive factors such as attribution appear to play a role.

1.8 Study Rationale

Based on the reviewed literature, the following points may be summarized:

1. Stigma has a significant negative impact on individuals with mental health problems.
2. The expression and conceptualization of stigma varies across cultures and may be determined by cultural mores.
3. The individualism and collectivism model and self-construals are useful constructs to understand the complex nature of culture.
4. Cross-cultural expressions of stigma may be mediated by etiological models of belief

regarding where mental illness originates from, theory of mind abilities, and the fundamental attribution error.

5. Perspective-taking and empathy are integral theory of mind constructs that may play an important role in explaining cross-cultural variation of stigma expression.

6. Anti-stigma contact interventions have some evidence for efficacy, but the mechanisms of action of such interventions are not consistently understood across cultures. However, theory of mind may be a potential moderator in this form of intervention.

The reviewed literature also reveals significant methodological limitations of cross-cultural stigma research. First, culture is often inferred based on self-reported ethnic backgrounds that are constrained to categorical variables. More specifically, the assumption that ethnicity or race are directly indicative of the vast dimensions of an individual's cultural background (e.g., endorsement of values, norms, customs etc.) is flawed. Country of origin is conflated with culture, while ignoring acculturation. Such limited measurement of culture undermines the reliability and the validity of conclusions drawn about cross-cultural differences. Another weakness that emerges from the cited literature is that the majority of reviewed studies limit their explanation of stigma differences to sociodemographic factors (Rao, et al., 2007) or previous contact with someone with lived experience (Whaley, 1997). These endeavors are likely futile as demographic factors have been shown to be largely ineffectual in understanding racial or ethnic differences in mental illness stigma (Anglin et al., 2006). A possible explanation for the observed group differences between individuals of European descent and groups of non-European heritage is adherence to Western and/or Eastern cultural values, beliefs and views.

The current study elucidated inter-cultural group differences in mental illness stigma by addressing the methodological limitations inherent in the measurement and application of culture

in the previous studies, while incorporating the broad summary points above. This process was achieved through the explicit and formal measurement of dimensions of culture (i.e., differences in adherence to dimensions of culture as well as levels of acculturation and enculturation) to provide an explanation for stigma differences. The current study operationalized culture by capturing: 1) an individual's level of acculturation, and 2) adherence to self-construals.

The study involved a direct comparison of North American and Chinese samples. Three samples were studied: Chinese Canadians, Hong Kong Chinese, and European Canadians. To address some of the concerns from the literature review, it measured acculturation by assessing an individual's adherence to mainstream culture (i.e., North American culture) as well as his or her heritage culture (i.e., the culture that has influenced an individual the most other than North American culture; Ryder et al., 2000). By explicitly measuring people's endorsements of both mainstream and heritage cultures, a more valid index of the effect of the interaction between the two cultural orientations is likely (c.f., Berry, 2005). The adoption of a bidirectional model of acculturation is considered a strength of the present study compared to past research that has relied on the number of years an individual has lived in a Western or host country as a proxy for level of acculturation. In this regard, the results provide insight into the role of culture, and not ethnicity alone.

The primary goal of the study was to evaluate cross-cultural differences in the relationships between etiological beliefs about mental illness, specifically depression, and stigmatizing attitudes and beliefs. A secondary goal was to evaluate the role of theory of mind, perspective-taking and empathy in the stigma process and to compare this relationship between a Western and Eastern culture.

1.9 Hypotheses

Based on the reviewed literature, the following hypotheses were proposed:

Hypothesis 1: Chinese Canadians and Hong Kong Chinese would report overall greater stigmatizing attitudes and beliefs than European Canadians.

Hypothesis 2: There would be cross-cultural differences in adherence to a biomedical versus a psychosocial attribution model of depression across all three cultural groups.

Hypothesis 3: Greater levels of empathy and perspective-taking were hypothesized to be associated with fewer stigmatizing attitudes regardless of a primarily biomedical or psychosocial causal attribution of depression.

Hypothesis 4: The moderating effect of empathy and perspective- taking on etiological beliefs and stigma would differ across cultural groups.

Hypothesis 5: European Canadians would engage in help-seeking behaviours to a greater extent than the Asian samples.

Hypothesis 6: European Canadians would endorse greater independent and fewer interdependent self-construals relative to Chinese Canadians.

Hypotheses 7-8: With respect to levels of acculturation, it was hypothesized that the Chinese Canadian sample would endorse heritage culture to a greater extent than mainstream culture relative to European Canadians. Conversely, European Canadians were hypothesized to endorse mainstream culture more than heritage culture compared to their Chinese Canadian counterparts.

Methods

1.10 Overview

The present study was conducted in two studies using separate participant pools. Study 1 focused on the examination of the moderating effect of empathy and perspective-taking on the relationship between etiological beliefs about depression and stigma related to depression in a sample of Hong Kong Chinese undergraduate students. Study 2 replicated Study 1 in a sample of Chinese Canadian and European-Canadian undergraduate students using a more sophisticated design with additional measures.

1.11 Study 1

1.11.1 Participants

Participant characteristics and eligibility requirements are outlined below for each sample separately. Sixty-five individuals from Hong Kong, between the ages of 18 and 65, were recruited from the City University of Hong Kong. Eligible participants must have been born in Mainland China or Hong Kong, and their native and primary language must have been Cantonese or Mandarin. Hong Kong Chinese participants also had to identify their heritage culture as Chinese. The following demographic variables were assessed across all three cultural groups: gender, age, religion, education, lifetime diagnosis of depression, and if the participant has ever met someone diagnosed with depression.

1.11.2 Power Analysis

A power analysis for an ANCOVA with three groups (i.e., cultural heritage) and three covariates (demographics) was conducted using G*Power 3.1.7. The results indicated that a total sample size of 48 participants per group would have over a 90% chance to detect a medium effect size as significant at the .05 alpha level (.30 as defined by Cohen, 1992). Based on this

analysis, the recruitment goal was 50 participants for the Hong Kong sample. The final sample size exceeded the recruitment goal.

A power analysis for a moderation analysis using two predictors and the corresponding interaction variable indicated that a total sample size of 77 participants would have over a 80% chance of detecting a medium effect size as significant at the .05 alpha level. The final sample size did not achieve this goal, but a post hoc power analysis revealed that the collected sample size of 56 achieved a 64% chance to detect the same effect size.

1.11.3 Measures

All measures were originally written in English and translated to Cantonese (refer to the procedure section of this document for the translation process).

1.11.3.1 Demographics

Background Information Form (BIF). The BIF was created for the current investigation. The BIF assessed participant demographics such as gender, age, heritage culture, religion, and whether participants know or have known someone with depression.

1.11.3.2 Stigmatizing Attitudes and Beliefs

Attitudes Towards those with Depression (ATD; Szeto, Luong, & Dobson, 2013). The ATD is a 7-item self-report scale that measures perceived stigma toward individuals with depression. Participants rate their agreement with statements such as “Most people you know would be reluctant to date someone who has had depression” on a 1 (strongly disagree) to 5 (strongly agree) Likert scale. Higher scores reflect greater perceived stigma. Five of the ATD’s items were originally developed by Link (1987) and used in his devaluation-discrimination subscale. Szeto and colleagues (2013) adapted Link’s subscale and added an item from the Canadian Community Health Survey (Statistics Canada, 2011). The authors also created an additional item (i.e., Now, think about your own feelings. Overall, you share the opinions of

most people you know regarding people who have had depression); however only the first 6 items are used to calculate a scale score. The 6-item ATD has demonstrated good internal consistency, $\alpha = 0.87$ (Szeto et al., 2013).

Mental Illness Stigma Scale (MISS; Day, Edgren, & Eshleman, 2007). The MISS is a 28-item self-report questionnaire that assesses participants' beliefs and attitudes toward mental disorders. For the purposes of the current study, the MISS was revised to measure attitudes and beliefs towards individuals with depression. The MISS assesses 7 domains of stigma that are measured by 4 items each: interpersonal anxiety, relationship disruption, poor hygiene, visibility, treatability, professional efficacy, and recovery. Participants indicate their level of agreement with the items according to a 7-point Likert scale from 1 "strongly disagree" to 7 "strongly agree." The MISS evidences good discriminant validity (Day et al., 2007) and strong construct validity with Jones and colleagues' (1984) well-validated model of stigma. The MISS has evidenced high internal consistencies in a variety of samples, with Cronbach's alphas ranging from .85 to .93 (Masuda, Anderson, Twohig, Feinstein, Chou, Wendell et al., 2009; Stone & Merlo, 2011).

Reasons for Depression (RFD; Addis, Truax, Jacobson, 1995). The RFD is a 48-item self-report measure designed to assess an individual's beliefs about the etiology of his or her depression. For the purposes of the present study, instructions were altered to assess for individual's beliefs about the causes of depression in others. Respondents rate the extent to which they believe each statement is likely a reason for depression on a 4-point Likert scale from 1 "definitely not a reason" to 4 "definitely a reason". Individuals are asked to respond to statements such as, "Most people are depressed because… "They can't make friends," "That's just the type of person they are," and "They have a chemical imbalance." Data can be analyzed

along nine subscales, with each subscale comprising three to ten items. Higher scores indicate stronger adherence to each underlying cause of depression. The following are the RFD's subscales: Existential, Characterological, Interpersonal Conflict, Intimacy, Achievement, Childhood, Relationship, Physical, and Biological. The Biological subscale was added to the RFD after the validation of the primary factor structure in 1995. As such, the validity data reported excludes the Biological subscale; however, as is the case with all of the present study's scales, Cronbach's alphas were calculated for each subscale for each sample to determine whether the measure is functioning adequately. The RFD has demonstrated good internal consistency (α for each subscale = .78, .86, .85, .79, .85, .84, .82, .79, respectively). Similar Cronbach's alphas were reported in a sample of United Kingdom participants (α = .73 – .94), which further bolsters the scale's reliability (Thwaites et al., 2004).

Attitudes Toward Seeking Professional Psychological Help: A Shortened Form (ATSH; Fischer & Farina, 1995). The ATSH is a 10-item self-report measure of respondents' attitudes toward seeking psychological help. The measure was adapted from Fischer and Turner's (1970) original 48-item scale, and strongly correlates with the original version, r = .87. Participants are asked to indicate their degree of agreement with items such as "I might want to have psychological counseling in the future" and "Personal and emotional troubles, like many things, tend to work out by themselves" on a 4-point Likert scale, from 0 "Disagree" to 3 "Agree". The ATSH has evidenced good test-retest reliability (r = .80 at 1-month follow-up), and high internal consistency (α = .84).

Cross-Cultural Depression Stigma Scale: (CCDSS; Prentice, 2014). The CCDSS is a 24-item self-report multidimensional measure of stigma related to depression. The scale measures personal and perceived stigma related to four different domains of social functioning:

Personal/Self, Family Workplace and Culture. Participants are asked to indicate their level of agreement with items on a 7-point Likert scale from "strongly disagree" to "strongly agree." The CCDSS demonstrated strong temporal stability over a three-week period and good convergent validity, and reliability. Most significantly, the scale was developed with a cross-cultural sample of Chinese Canadians and European-Canadian undergraduate students and is therefore intended to be used with a cross-cultural sample. For example, culturally sensitive items include: "Members of my heritage culture would reject my family if they knew a family member had depression" and "My family would see me as a burden if I had depression."

1.11.3.3 Theory of Mind: Empathy and Perspective-taking

Empathy Questionnaire (EQ; Davis, 1983). The EQ is a 28-item self-report multidimensional measure of empathy. Respondents are instructed to indicate the extent to which a statement describes them on a five-point Likert scale, from A "does not describe me very well" to E "describes me very well". Responses are then analyzed along four subscales: fantasy (e.g., "After seeing a play or movie, I have felt as though I were one of the characters"), perspective-taking (e.g., I sometimes try to understand my friends better by imagining how things look from their perspective"), empathetic concern (e.g., "I am quite touched by things I see happening"), and personal distress (e.g., " In emergency situations, I feel apprehensive and ill-at-ease"). For the purposes of the present investigation, only the perspective-taking and empathetic concern scales will be administered and analyzed. The perspective-taking scale measures an individual's ability to adopt the perspective of another individual, while the empathetic concern scale assesses an individual's tendency to experience compassion and concern for others in distress. The EQ evidenced good discriminant validity among the four subscales as demonstrated by two factor analyses (Davis, 1983). The measure has demonstrated good internal consistencies in university

samples for the perspective-taking and empathetic concern scales, with Cronbach's alphas ranging from .71 to .75, and .68 to .73, respectively (Davis, 1980).

1.11.3.4 Depressive Symptomatology

Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item self-report questionnaire that measures current levels of depressive symptomatology in the general population. Respondents indicate on a 4-point Likert scale how often they have experienced symptoms of depression from "rarely or none of the time (less than 1 day)" to "all of the time (5-7 days)." Participants respond to statements such as "I felt depressed," "I talked less than usual," "I had trouble keeping my mind on what I was doing," and "I thought my life had been a failure". Higher overall scores indicate the presence of more depressive symptomatology. The CES-D has high internal consistency with Cronbach's alphas of .85 and .90, in a general and clinical sample respectively (Radloff, 1977). The CES-D has also demonstrated good test-retest reliability, concurrent validity, and construct validity (Radloff, 1977) and has been used extensively in cross-cultural research (e.g., Cheung & Bagley, 1998).

1.11.4 Procedure

Recruitment and testing of the Hong Kong Chinese sample was carried out with the assistance of collaborators at the City University of Hong Kong under the supervision of Dr. Samuel Ho. Through several correspondences, Dr. Ho was made aware of the intricacies of the study's procedure and agreed to recruit and collect the required data to test the present study's hypotheses. Consistent with the standards and ethical procedures at the City University of Hong Kong, undergraduate students were offered the opportunity to participate during a psychology class and receive partial course credit as compensation for their participation. All participants provided informed consent for the process and learned about stigma related to depression, and resources for mental disorders in Hong Kong as a result of their participation.

1.11.5 Translation of Measures

The measures employed in the present study were presented in in Cantonese to Hong Kong Chinese participants. As all the measures were originally developed with Western populations and in English, the measures were translated to Cantonese in reference to the World Health Organization's (WHO) Guidelines for the Process of Translation and Adaptation of Instruments (WHO, 2007). The WHO's translation guidelines are generally well recognized as an appropriate method of translation and have been used extensively in cross-cultural research (e.g., Beshai, Dobson & Adel, 2012). The primary goal of the WHO translation process is conceptual and cultural equivalence of measures instead of simply linguistic equivalence, which is prone to misconceptions and errors (WHO, 2007). The original English measures were translated to Cantonese by Dr. Ho's research assistants and reviewed by Dr. Ho. In the second phase, an independent translator translated the measures from Cantonese to English. The principal investigator then reviewed the measures for accuracy; more specifically the back-translated measure was compared to the original scale. Any errors or concerns were flagged and reviewed by Dr. Ho and his team in Hong Kong. Revisions to the measures were made when deemed appropriate. Culture brokers (independent native Cantonese speakers who also identified their heritage culture as Chinese) were recruited to review the measures for accuracy, and specifically for cultural equivalency. They were particularly attuned to the accurate translation of culture specific idioms and questionnaire instructions. CULTURE BROKER Potential revisions were documented, and the measures were returned to Dr. Ho and his team. Following minor revisions on the part of Dr. Ho, the final measures were prepared. Of importance, and in line with WHO guidelines (WHO, 2007), this process was documented.

1.12 Study 2

1.12.1 Participants

A total of 392 University of Calgary undergraduate students participated in the online portion of study 2 – 169 European Canadians and 167 Chinese Canadians. Of these individuals 101 participated in the in-lab portion of the study - 54 European Canadians and 47 Chinese Canadians. Participants were recruited through the University of Calgary's Research Participation System (RPS). Eligible Euro-Canadians self-identified as Canadian or European, and reported European ancestry on both of their maternal and paternal sides. Participants in the Chinese Canadian sample self-identified as Chinese, and were born in Hong Kong or Mainland China, or in Canada, and either one or both of their parents were born in Hong Kong or Mainland China.

1.12.2 Power Analysis

Power analyses were conducted using G*Power 3.1.7. Results indicated that a sample size of 136 participants per group will have over a 90% chance of detecting a medium effect size (.15 as defined by Cohen, 1992) as significant at the .05 alpha level in a multiple regression that uses eight predictors. Based on this analysis, the original recruitment goal was 150 participants per cultural group in Canada. The final sample size exceeded the recruitment goals.

1.12.3 Measures

Participants completed the same battery of questionnaires as the Hong Kong Chinese sample. The questionnaires are described in Study 1 'Measures' section. Additional questionnaires and tasks are described below.

1.12.3.1 Acculturation

The Self-Construal Scale (SCS; Singelis, 1994). The SCS is a widely used 24-item self-report measure that assesses an individual's adherence to independent and interdependent self-

construals. Self-construals provide one method of operationalizing culture and are generally accepted as a meaningful way to differentiate amongst cultures. Participants indicate their agreement with items on the SCS on a 7-point Likert scale from 1 "strongly disagree" to 7 "strongly agree." Higher scores are indicative of stronger adherence to a self-construal.

The SCS is a psychometrically sound measure that demonstrates excellent face validity, construct validity, and predictive validity. The SCS possesses strong scale reliability (i.e., $\alpha = .69$ and .70 for the independent scale, and $\alpha = .73$ and .74 for the interdependent scale), and has been used extensively and successfully in cross-cultural research (Kemmelmeier & Cheng, 2004; Wong, Owen, Tran, Collins, & Higgins, 2012;).

Vancouver Index of Acculturation (VIA; Ryder et al.,2000). The VIA is a 20-item self-report measure that measures adherence to two orthogonal dimensions of an individual's cultural identity (i.e., heritage culture and mainstream culture). Participants rate their level of agreement with items on a 9-point Likert scale from 1 "strongly disagree" to 9 "strongly agree." The VIA has shown high internal consistency on the heritage culture subscale ($\alpha = .91$ - .92) and the mainstream culture subscale ($\alpha = .85$ - .89; Ryder et al., 2000). The VIA has evidenced strong concurrent validity, good inter-item correlations, and adequate convergent validity (Ryder et al., 2000). The measure has been used successfully with a variety of cultural groups (Asvat & Malcarne, 2008; Ryder et al., 2000).

1.12.3.2 Theory of Mind Task

The Awareness of Social Inference Task (TASIT; McDonald, Flanagan, Rollins, & Kinch, 2003). The TASIT assesses social perception abilities (i.e., theory of mind abilities) through a series of videos. More specifically, the TASIT assesses an individual's ability to detect various forms of sarcasm by interpreting a range of contextual cues (e.g., tone of voice, facial expression). Participants view 32 videotaped scenarios of everyday situations each ranging from

15 to 60 seconds. Respondents are instructed to respond to a series of four questions that assess his or her comprehension of 1) the intended message being communicated by the speaker; 2) whether a literal or non-literal message has been communicated; 3) the beliefs and knowledge held by the speaker; and 4) the actor's emotional state.

1.12.4 Procedure

Participants were recruited through the University of Calgary Psychology Department's Research Participation System. Following informed consent, participants completed the battery of questionnaires online, in random order, through Qualtrics, and then were invited to complete the theory of mind tasks in the lab. Participants who did not continue to Part 2 of study 2 were debriefed on the portion of the study they completed, thanked and awarded 1 bonus credit toward a psychology undergraduate course. Undergraduates who participated in the lab tasks completed the hinting task and TASIT in random order, to control for order effects. Following the completion of the study, participants were debriefed, thanked, and awarded 1.5 bonus credits toward a psychology undergraduate course.

1.13 Ethical Considerations

Data collection for Study 1 was completed by the City University of Hong Kong, and as such, the study ethics followed the City University of Hong Kong's ethical guidelines. The University of Calgary Conjoint Faculties Research Ethics Board approved Study 2. Study 2 participants provided informed consent prior to their participation (see *Appendix B* for copy of consent form). Given that times varied between participation in the online and in-lab portions of the studies, before they began the in-lab portion of the study, participants were reminded of the purpose of the study, their rights as participants, the voluntary nature of the study and their right to withdraw at any time without penalty.

Each participant created a unique code in place of any identifying information to ensure confidentiality. The participant's code was also used to link their online data to their in-lab data. Only researchers associated directly with the study had access to both the online and the in-lab data. Future access was only granted to those directly under the supervision of Dr. Keith Dobson. All data was stored in a secure cabinet within the Depression Research Lab. Electronic data were encrypted and stored on a password protected computer.

Results

1.14 Data Preparation

All outcome data were assessed for outliers and deviations from normality using Normal Q-Q plots, and the Shapiro-Wilke test (Tabachnick & Fidell, 2013). Extreme outliers were windsorized by recoding the outlier to a value corresponding to three standard deviations away from the mean. The windsorized values allow extreme data to retain its meaning, but minimize the overall influence of extreme outliers on measures of central tendency. Missing data analysis revealed that no variables had more than 5% of missing cases, and so missing data were not imputed but simply treated as missing casewise (Tabachnick & Fidell, 2013).

Some variables were found to be mildly positively skewed. However, no variables were transformed to retain the meaning of the data and their measurement units. In addition, the type of analysis employed would be unlikely to be affected by mild deviations from normality.

Bivariate correlations were used to examine the relationship between all predictor and outcome variables that were common to the total sample (see Table 1). Given that most of the measures were developed with Western populations, Cronbach's alphas were computed for each subscale for each cultural group to ensure adequate internal reliability. The results are presented in Table 2. The general pattern appears to be relatively strong internal consistency for European and Chinese Canadian samples (most values .80 or above). However, for the Hong Kong sample, the Reasons for Depression (all subscales except relationship) had poor to acceptable internal consistency (.44 to .78). Similarly, Davis's empathy subscales (both perspective-taking and empathic concern) had an alpha of .63. Overall, it appears that these two instruments do not generalize as well to non-Western populations, suggesting that Hong Kong findings based on them may need to be interpreted with caution.

Table 1 Bivariate correlations between all analysis variables that were common across the total sample.

	RFD Characterological Subscale Score	CES-D Total Score	Attitudes toward seeking professional help mean score	Attitudes toward those with depression mean score	CCDSS Total Score	Davis's empathy perspective-taking subscale mean score
RFD Characterological Subscale Score						
CES-D Total Score	.15**					
Attitudes toward seeking professional help mean score	-.16**	-.10				
Attitudes toward those with depression mean score	.13**	.10*	-.14**			
CCDSS Total Score	.31**	.16**	-.32**	.35**		
Davis's empathy perspective-taking subscale mean score	-.02	-.01	.10*	-.38**	-.09	
Davis's empathy empathic concern subscale mean score	-.00	-.05	.26**	-.27**	-.20**	.49**

Note: N = 392; RFD = Reasons for Depression scale; CES-D = Center for Epidemiologic Studies Depression Scale; CCDSS = Cross-Cultural Depression Stigma Scale.

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

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

Table 2 Cronbach's Alpha values by cultural group and subscale.

Scale	Hong Kong Chinese	Chinese Canadian	European Canadian
VIA Heritage subscale		.87	.88
VIA Mainstream subscale		.89	.89
CES-D	.89	.93	.93
RFD Existential subscale	.66	.75	.81
RFD Characterological subscale	.66	.74	.75
RFD Interpersonal Conflict subscale	.76	.82	.86
RFD Intimacy subscale	.56	.63	.69
RFD Achievement subscale	.61	.84	.85
RFD Childhood subscale	.78	.85	.89
RFD Relationship subscale	.82	.82	.84
RFD Physical subscale	.66	.84	.87
RFD Biological subscale	.44	.78	.81
MISS Treatability subscale	.66	.63	.71
MISS Relationship Disruption subscale	.80	.87	.81
MISS Hygiene subscale	.66	.88	.89
MISS Anxiety subscale	.88	.90	.90
MISS Visibility subscale	.84	.83	.79
MISS Recovery subscale	.82	.82	.82

MISS Professional Efficacy subscale	.89	.88	.75
Attitudes toward those with depression	.84	.83	.82
Attitudes toward seeking professional help	.79	.72	.82
Davis's empathy perspective-taking subscale	.63	.75	.77
Davis's empathy empathic concern subscale	.63	.76	.85
Self-construal Interdependent subscale		.75	.76
Self-construal Independent subscale		.76	.77
CCDSS Culture subscale	.85	.90	.88
CCDSS Personal subscale	.88	.89	.84
CCDSS Family subscale	.84	.93	.92
CCDSS Workplace subscale	.88	.90	.90

Note: Cronbach's alpha values were not calculated for the Vancouver Index of Acculturation and the Self-Construal Scale for the Hong Kong Chinese sample since these instruments were not used in any analyses employing this sample.

1.15 Demographics and Baseline Differences

Demographic variables, reported by cultural group and for the total sample, as well as group comparisons, are presented in Table 3. An analysis of demographics showed that the average participant across both studies (i.e., the combined sample) was female, approximately 21-years-old, atheist/agnostic or of no religion, and had some post-secondary education. 11% of the total sample had a lifetime diagnosis of depression and 64% of participants had met someone who had told them about their depression.

There were several group differences between Hong Kong Chinese, Chinese Canadians and European Canadians on the demographic variables. The Chinese Canadian group were significantly younger than the European-Canadian group, but not different in age from the Hong-Kong Chinese group. There were significantly less individuals identifying as Christian in the Chinese Canadian group relative to the European-Canadian group. Similarly, there were more "other" religious identifications (e.g., Buddhist) in the Chinese Canadian group than in the European-Canadian group. The only significant difference in education was in the Hong-Kong Chinese group, where fewer individuals endorsed greater than high school education compared to the Western groups. All three groups were significantly different from each other on whether anyone ever disclosed to them about their depression with European Canadians reporting the most disclosures followed by Chinese Canadians and then Hong Kong Chinese. A significant difference on lifetime diagnosis of depression was also found but is unreliable given one of the cells had a count of 2. Lastly, a significant difference was observed between European

Table 3 Demographics for the total sample and cultural group comparisons.

Variable	Total Sample (N = 392)	European Canadian (n = 169)	Chinese Canadian (n = 167)	Hong-Kong Chinese (n = 56)	ANOVA / χ^2
Gender, % female	74.0	76.3	73.1	69.6	1.11
Age	21.15 (4.54)	21.79 (5.16)	20.37 (3.27)	21.54 (5.45)	4.47*
Religion, n (%)					24.77***
Christian	111 (28.3)	65 (38.5)	32 (19.2)	14 (25)	
Atheist, agnostic, no religion	231 (58.9)	93 (55.0)	101 (60.5)	37 (66.1)	
Other	49 (12.5)	11 (6.5)	33 (19.8)	5 (8.9)	
Education					22.79***
Less than high school	0	0	0	0	
High school diploma	81 (20.7)	32 (18.9)	49 (29.3)	0	
Some post-secondary education or greater	310 (79.1)	137 (81.1)	117 (70.1)	56 (100.0)	
Ever diagnosed with depression, % yes	42 (10.7)	26 (15.4)	14 (8.4)	2 (3.6)[1]	7.79*
Met someone with depression, % yes	252 (64.3)	128 (75.7)	10 (61.7)	21 (37.5)	27.65***

Variable	Total Sample (N = 392)	European Canadian (n = 169)	Chinese Canadian (n = 167)	Hong-Kong Chinese (n = 56)	ANOVA / χ^2
TASIT 2[2]	53.33 (4.53)	54.83 (3.60)	51.60 (4.90)		3.74***
TASIT 3[2]	56.21 (4.41)	57.89 (3.59)	54.28 (4.49)		4.49***

Note: All values are in the format of M (SD) unless otherwise specified. * $p < .05$. ** $p < .01$. *** $p < .001$.

[I] Cells have an expected count less than 5.

[2]The TASIT variables were compared only for European Canadians and Chinese Canadians who completed an in-lab assessment (see Table 3 for cell sample sizes), precluding a comparison with Hong-Kong Chinese participants.

Canadians and Chinese Canadians on two TASIT scores, with European Canadians endorsing greater theory of mind scores than Chinese Canadians.

In order to ascertain that there was no selection bias for participants who chose to participate in the in-lab assessment portion of study 2, a comparison was carried out on key demographic and stigma-related variables between those individuals who participated in lab and those who did not. Demographic variable comparisons by participation category (i.e., participated in lab or not) for Study 2 are presented in Table 4. The analysis showed that there was a significant association between gender and in-lab assessment participation, with significantly more females participating. No other significant differences were observed between participants who completed an in-lab assessment and those who did not, including total score on the CCDSS measure, which represented stigma beliefs. The results support the conclusion that participating in the lab assessment did not inherently carry a selection bias, potentially influencing the predictors of stigma beliefs between those who participated in the lab and those who did not.

Table 4 Demographics by participation category.

Variable	Completed in-lab assessment (n = 101)	Did not complete in-lab assessment (n = 235)	t / χ^2
Gender, % female	83 (82.2)	168 (71.5)	4.27*
Age	21.61 (5.59)	20.86 (3.73)	-1.46
Religion, n (%)			1.90
Christian	24 (23.8)	73 (31.2)	
Atheist, agnostic, no religion	63 (62.4)	131 (56.0)	
Other	14 (13.9)	30 (12.8)	
Education			1.51
Less than high school	0	0	
High school diploma	20 (19.8)	61 (26.1)	
Some post-secondary education or greater	81 (80.2)	173 (73.9)	
Ever diagnosed with depression, % yes	13 (12.9)	27 (11.5)	0.13
Met someone with depression, % yes	72 (71.3)	159 (67.7)	0.43
CCDSS total	67.71 (23.04)	68.94 (23.72)	-0.44

Note: All values are in the format of M (SD) unless otherwise specified.

* $p < .05$. ** $p < .01$. *** $p < .001$.

1.16 Study 1

To validate the basic hypothesized relationships for the series of proposed studies, study 1 examined empathy and perspective-taking as moderators of the relationship between characterological causal beliefs about depression and stigma. A correlation analysis of subscale and total scale scores revealed the Characterological subscale of the Reasons for Depression scale as having the strongest association with the chosen outcome stigma measure of the CCDSS scale total score (R = .37). As such, this subscale score was used as the predictor, representing the characterological causal beliefs about depression. CCDSS total score was the outcome variable; scores on Davis's empathy and perspective-taking subscales were the moderators. *Figure 1* presents the conceptual diagram of the moderation model that was evaluated in study 1.

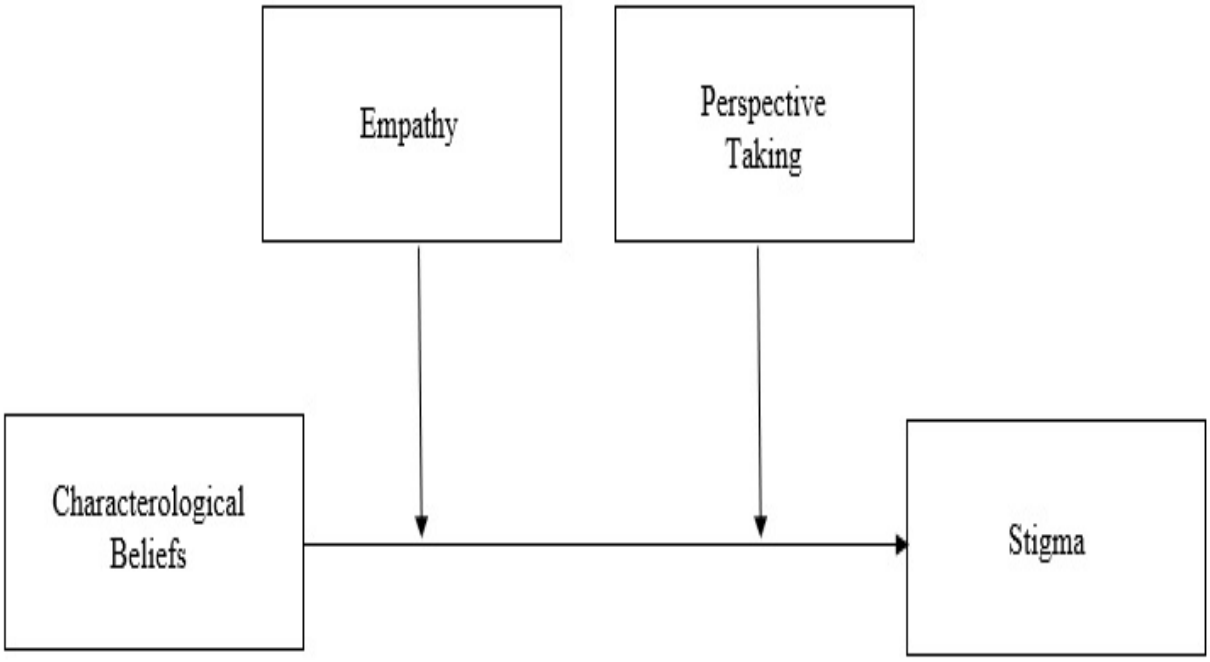

Figure 1 Conceptual diagram of Study 1 moderation analysis.

The moderation analysis was carried out using the PROCESS macro (model 2) for SPSS version 23. The original analysis was carried out before the start of Study 2 since it was used as a way to validate moving forward with the project. At the conclusion of both studies, once baseline group differences were uncovered on the demographics described in chapter 3.2, the moderation analysis was redone controlling for age and religion demographics. Education could not be used as a control variable in this group of participants because there was no variability in their education level, resulting in a constant categorical value. The results presented here are the final results that include the control variables.

The overall model was significant, $F(7, 48) = 4.53$, $p < .001$, $R^2 = .40$. Table 5 presents the summary statistics for the moderation model coefficients. The basic relationship was significant – greater characterological attributions of depression were significantly related to greater overall stigma beliefs. Given the overall significance of the model, and the significance of the basic relationship, moderation results could be interpreted. Results of the moderation analysis revealed a statistically significant moderation effect of empathy on the relationship between depression beliefs and stigma. An examination of the conditional effects of the predictor at a range of values of the moderator revealed that greater empathy strengthened the positive relationship between characterological attributions about causes of depression and stigma. In other words, being of Hong Kong Chinese culture and having greater empathy resulted in more stigmatizing beliefs about mental illness if one attributes them to someone's character. *Figure 2* presents the results of the moderation as a graph.

Conversely, there was no statistically significant moderation effect of perspective-taking on the relationship between depression causal attribution and stigma.

Table 5 Study 1 moderation model coefficients for Hong Kong Chinese participants.

Variable	*b*	*t*	*p*
Intercept	84.43	6.64	< .001
Characterological attributions	21.56	3.07	.004
Empathy	-8.47	-1.83	.07
Perspective-taking	-14.35	-2.80	.007
Characterological attributions x empathy (moderation 1)	39.56	2.30	.03
Characterological attributions x perspective-taking (moderation 2)	3.53	0.19	.85

Note: Characterological attributions = Reason for Depression Characterological subscale score; Empathy = Davis's Empathy subscale score; Perspective-taking = Davis's Perspective-taking subscale score.

1.17 Study 2

Study 2 evaluated eight total hypotheses. The results are reported for each hypothesis separately.

1.17.1 Hypothesis 1

To evaluate whether the Chinese Canadian and Hong Kong Chinese groups reported overall greater stigmatizing attitudes and beliefs than the European-Canadian group, a one-way ANCOVA was performed with heritage culture as the independent variable with three groups and total CCDSS score as the dependent variable. The results showed that there was a statistically significant difference between groups on overall stigmatizing attitudes, Welch's $F(2, 154.56) = 63.64$, $p < .001$. A planned contrast analysis revealed that European Canadians ($M = 57.79$, $SD = 18.20$) reported significantly lower stigmatizing attitudes toward mental illness than both the Hong Kong Chinese group ($M = 83.45$, $SD = 19.74$) and the Chinese Canadian group ($M = 79.48$, $SD = 23.24$), $t(248.39) = -11.15$, $p < .001$.

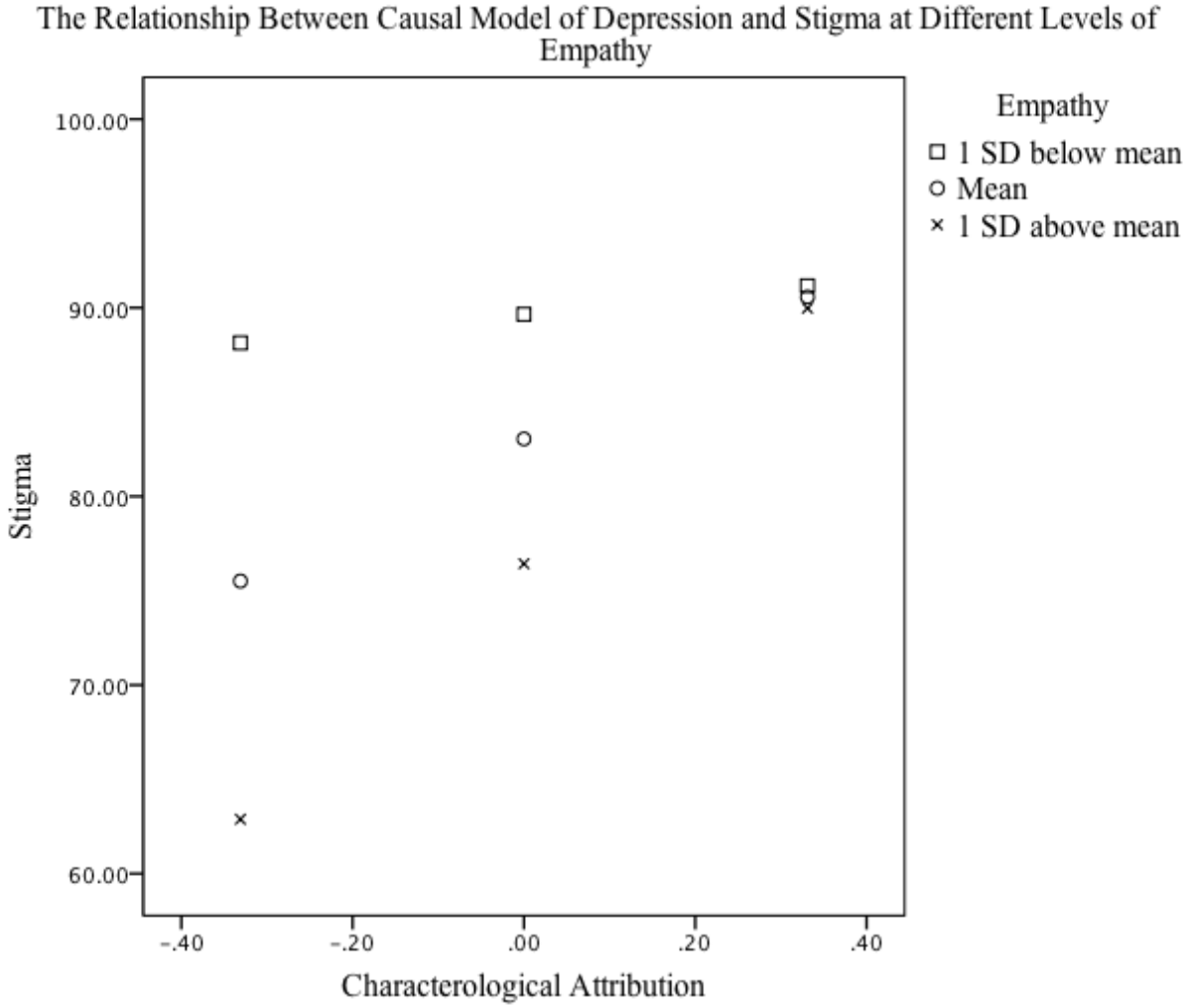

Figure 2 Graphical representation of the moderation analysis results of Study 1.

Note: the presented variables are centered. As such, axis numbers should not be used as a reference guide for real scale values. The graph is meant to visually show the relative change in the slope of the relationship at different levels of empathy.

1.17.2 Hypothesis 2

To evaluate whether there were cross-cultural group differences in adherence to specific causal attribution models of depression, a one-way ANCOVA was performed with heritage culture as the independent variable with three groups and subscale scores of the Reasons for Depression Scale as the dependent variables. As in Study 1, a correlation analysis of subscale and total scale scores revealed that the Characterological subscale had the strongest significant association with stigma, as represented by the CCDSS scale total score (R = .31), followed by the Existential subscale (R = .21), Achievement subscale (R = .20), Interpersonal Conflict subscale (R = .19), and Intimacy subscale (R = .19). As such, the analyses were carried out five times for each of the subscale outcome variables.

The results showed that there was a statistically significant difference between groups on reasons they believe others develop depression. There was an overall difference between groups on the Existential subscale, Welch's $F(2, 181.13) = 8.07$, $p < .001$. Games-Howell post hoc analyses revealed that European Canadians (M = 2.55, SD = .60) reported significantly lower scores than both the Hong Kong Chinese group (M = 2.75, SD = .39) and the Chinese Canadian group (M = 2.79, SD = .53). There was no significant difference between the Hong Kong Chinese and the Chinese Canadian groups.

European Canadians (M = 2.26, SD = .44) reported significantly lower scores on the Characterological subscale than the Hong Kong Chinese group (M = 2.42, SD = .33), Welch's $F(2, 171.25) = 4.58$, $p < .012$. There was no significant difference between the Hong Kong Chinese and the Chinese Canadian (M = 2.35, SD = .42) groups.

There was an overall difference between groups on the Interpersonal Conflict subscale, Welch's $F(2, 192.96) = 12.69$, $p < .001$. Games-Howell post hoc analyses revealed that European Canadians (M = 2.69, SD = .57) reported significantly lower scores than both the Hong

Kong Chinese group (M = 2.99, SD = .33) and the Chinese Canadian group (M = 2.91, SD = .51). There was no significant difference between the Hong Kong Chinese and the Chinese Canadian groups.

There was an overall difference between groups on the Intimacy subscale, Welch's $F(2, 178.26) = 14.15$, $p < .001$. Games-Howell post hoc analyses revealed that European Canadians (M = 2.80, SD = .52) reported significantly lower scores than both the Hong Kong Chinese group (M = 3.12, SD = .36) and the Chinese Canadian group (M = 3.00, SD = .50). There was no significant difference between the Hong Kong Chinese and the Chinese Canadian groups.

There was an overall difference between groups on the Achievement subscale, Welch's $F(2, 202.87) = 7.63$, $p = .001$. Games-Howell post hoc analyses revealed that European Canadians (M = 2.79, SD = .56) reported significantly lower scores than both the Hong Kong Chinese group (M = 2.96, SD = .30) and the Chinese Canadian group (M = 3.02, SD = .53). There was no significant difference between the Hong Kong Chinese and the Chinese Canadian groups.

1.17.3 Hypothesis 3

To examine whether greater levels of empathy and perspective-taking were associated with fewer stigmatizing attitudes regardless of a primarily biomedical or psychosocial causal attribution of depression, a hierarchical multiple regression was performed. The hierarchical regression allowed for a stepwise entry of model variables to examine the change in explained variance in stigmatizing attitudes as a result of adding empathy, perspective-taking, and causal attribution model of depression. The hierarchical model consisted of four steps. Step one entered age, religion, education level, and heritage culture as the demographic variables to control for in the analysis. Step two added mean scores on Davis's empathic concern subscale (i.e., empathy). Step three added mean scores on Davis's perspective-taking subscale (i.e., perspective-taking).

Step four added the mean subscale score on the Reasons for Depression Characterological subscale. The outcome variable was the CCDSS scale total score.

To address the hypothesis, the outcomes of interest were: whether the overall model with the new variable explains a significant amount of variance in stigmatizing attitudes; whether the standardized coefficient is significant and positive or negative (i.e., the direction of relationship); and whether the addition of a new variable explains a significant amount of variance above and beyond all the other variables in the model.

The results showed that the baseline model with demographic variables accounted for a significant proportion of variance in stigmatizing attitudes (adjusted R^2 = .02), $F(4, 386) = 3.39$, p = .01. The addition of empathy in step 2 (adjusted R^2 = .05) and characterological beliefs in step 4 (adjusted R^2 = .14) resulted in a significant R-square change. The addition of perspective-taking in step 3 (adjusted R^2 = .05) did not result in a significant R-square change. The final model showed that greater levels of empathy, but not perspective-taking were associated with fewer stigmatizing attitudes. Contrary to the hypothesis, this relationship was modified by one's causal attribution of depression since there was a significant change in the variance accounted for in stigma attitudes when Characterological scores were added to the model. Summary statistics for final model in the hierarchical regression are presented in Table 6.

To provide a more rigorous evaluation of the hypothesis, the analysis was repeated two more times using TASIT 2 and 3 scores instead of Davis's Perspective-taking subscale score. Unlike the self-reported Davis's scale, the TASIT scores provide a task-based measurement of perspective-taking. Since only the Chinese Canadians and European Canadians completed the in-lab assessments, this part of the analysis was limited to these two groups.

Table 6 Summary statistics for Hypothesis 3 hierarchical regression.

Variable	M	SD	*b*	*p*	R^2 change	*p* of F-change
Age	21.15	4.55	-0.31	.22		
Religion	1.84	0.62	5.03	.01		
Education	2.79	0.41	3.12	.28		
Heritage culture	1.28	0.70	1.30	.49		
Empathy (step2)	2.98	0.69	-6.35	.001	.03	.001
Perspective-taking (step 3)	2.88	0.70	0.68	.72	.00	.83
Characterological (step 4)	2.32	0.42	17.46	< .001	.10	< .001

Note: Characterological = Reason for Depression Characterological subscale score; Empathy = Davis's Empathy subscale score; Perspective-taking = Davis's Perspective-taking subscale score.

The results showed that the baseline model with demographic variables accounted for a significant proportion of variance in stigmatizing attitudes (adjusted R^2 = .25), $F(4, 96) = 9.45$, $p < .001$. The addition of empathy in step 2 (adjusted R^2 = .26) and perspective-taking in step 3 in the form of TASIT scores (adjusted R^2 = .27) did not result in a significant R-square change. The addition of Characterological score in step 4 (adjusted R^2 = .31) resulted in a significant R-square change. The final model showed that when using a task-based measure of perspective-taking, neither perspective-taking nor empathy were associated with stigmatizing attitudes. It is important to note that the relationship between empathy and stigma changed when TASIT scores were added to the model. The relationship was negative and significant in step 2, but changed to non-significant in step 3, suggesting that the discordant finding on empathy between the two sets of analyses is mainly due to the use of TASIT as a predictor instead of Davis's scores, rather than a true change in the relationship with empathy. Since the results when using TASIT 3 scores instead of TASIT 2 mirrored each other, summary statistics for the final model in the hierarchical regression are only reported for TASIT 2 scores (see Table 7).

Table 7 Summary statistics for Hypothesis 3 hierarchical regression using TASIT scores.

Variable	M	SD	*b*	*p*	R^2 change	*p* of F-change
Age	21.61	5.59	0.10	.80		
Religion	1.90	0.61	2.87	.40		
Education	2.80	0.40	3.28	.51		
Heritage culture	1.47	0.50	16.24	.001		
Empathy (step2)	3.01	0.60	-5.04	.15	.02	.15
Perspective-taking (step 3)	53.33	4.53	-.74	.11	.02	.10
Characterological (step 4)	2.27	0.46	10.93	.01	.04	.01

Note: Characterological = Reason for Depression Characterological subscale score; Empathy = Davis's Empathy subscale score; Perspective-taking = TASIT 2 score.

1.17.4 Hypothesis 4

To examine whether the moderating effect of empathy and perspective-taking on etiological beliefs and stigma differs across cultural groups, a moderated moderation was performed. Based on the analyses for Hypothesis 2, the Characterological subscale of the Reasons for Depression scale had the strongest association with the chosen outcome stigma measure of the CCDSS scale total score (R = .31). As such, this subscale score was used as the predictor, representing the characterological causal beliefs about depression. CCDSS total score was the outcome variable representing stigma; scores on Davis's empathy scale was the first moderator; and heritage culture was the second moderator. The analysis was repeated twice substituting Davis's perspective-taking scale scores instead of empathy for the first moderator. *Figure 3* presents the conceptual diagram of the moderation model that was evaluated in study 2.

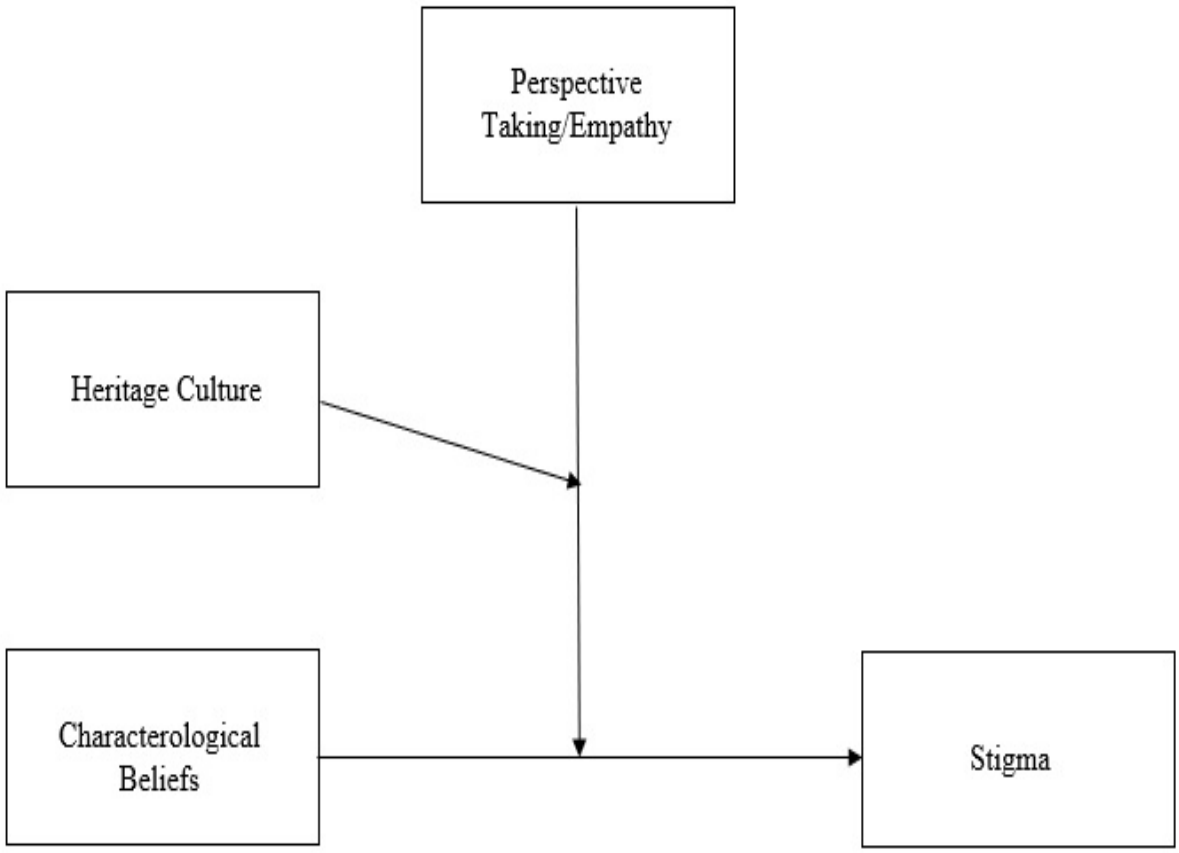

Figure 3 Conceptual diagram of Hypothesis 4 moderation analysis.

The moderation analysis was carried out using the PROCESS macro (model 3) for SPSS version 23, controlling for age, religion and education. Tables 8 and 9 present the summary statistics for the two moderation models. *Figures 4* and *5* present a graphical representation of the moderating relationship of empathy and perspective-taking across culture groups. The overall model when empathy was used as the first moderator was significant, $F(14, 376) = 18.70$, $p < .001$, $R^2 = .36$. Averaged across all three cultural groups, there was a statistically significant moderating effect of empathy on the relationship between depression beliefs and stigma, $b = 35.12$, $t(376) = 2.14$, $p = .03$. Therefore, without taking into account heritage culture, greater empathy resulted in more stigmatizing beliefs about mental illness if one attributes them to someone's character. Compared to the Hong Chinese group, there was a significantly different moderating effect of empathy on the relationship between depression beliefs and stigma in the European Canadian group, $b = -40.89$, $t(376) = -2.40$, $p = .02$. Similarly, compared to the Hong Kong Chinese group, there was a significantly different moderating effect of empathy on the relationship between depression beliefs and stigma in the Chinese Canadian group, $b = -39.65$, $t(376) = -2.26$, $p = .02$.

The overall model when perspective-taking was used as the first moderator was significant, $F(14, 376) = 17.93$, $p < .001$, $R^2 = .59$. Averaged across all three cultural groups, there was no statistically significant moderating effect of perspective-taking on the relationship between depression beliefs and stigma, $b = 12.27$, $t(376) = 0.80$, $p = .42$. Compared to the Hong Chinese group, there was no significant group difference on the moderating effect of perspective-taking on the relationship between depression beliefs and stigma in the European Canadian group, $b = -13.63$, $t(376) = -0.86$, $p = .39$. Similarly, compared to the Hong Kong Chinese group, there was no significant group difference on the moderating effect of perspective-taking on the

relationship between depression beliefs and stigma in the Chinese Canadian group, $b = -20.24$, $t(376) = -1.26$, $p = .21$.

Table 8 Study 2 moderation model coefficients using empathy and heritage culture as moderators.

Variable	*b*	*t*	*p*	LLCI	ULCI
Intercept	86.62	9.90	< .001	69.42	103.82
Characterological attributions	1.66	0.13	.90	-23.81	27.13
Empathy	-16.20	-3.70	<.001	-24.81	-7.58
Characterological attributions x empathy (avg. across groups)	35.12	2.14	.03	2.79	67.45
Characterological attributions x empathy (European Canadian vs. Hong Kong Chinese)	-40.89	-2.40	.02	-74.42	-7.37
Characterological attributions x empathy (Chinese Canadian vs. Hong Kong Chinese)	-39.65	-2.26	.02	-74.20	-5.10

Note: Characterological attributions = Reason for Depression Characterological subscale score; Empathy = Davis's Empathy subscale score; LLCI = lower limit 95% confidence interval; ULCI = upper limit 95% confidence interval.

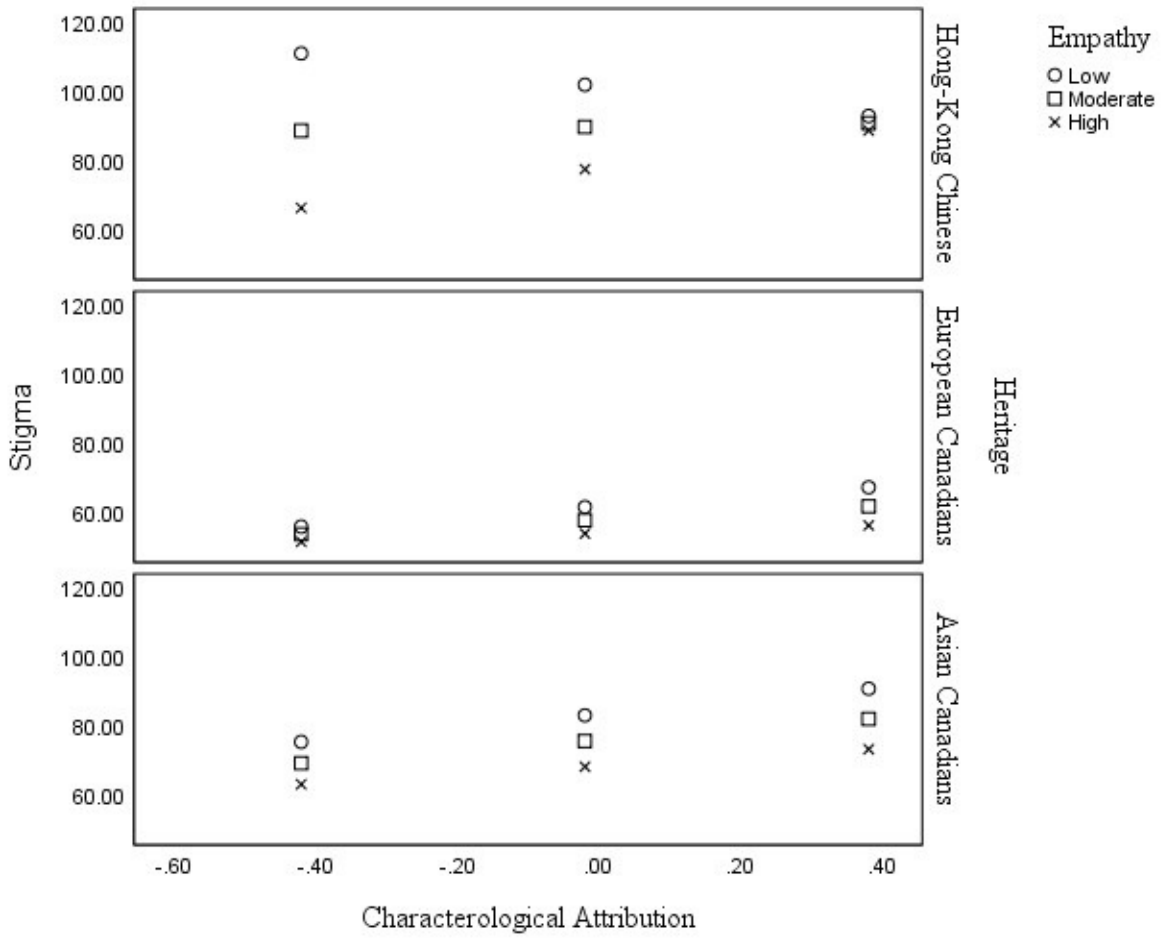

Figure 4 The Moderating Effect of Empathy on the Relationship Between Characterological Beliefs and Stigma Across Heritage Cultures.

Note: the presented variables are centered. As such, axis numbers should not be used as a reference guide for real scale values. The graph is meant to visually show the relative change in the slope of the relationship at different levels of empathy.

Table 9. Study 2 moderation model coefficients using perspective-taking and heritage culture as moderators.

Variable	*b*	*t*	*p*	LLCI	ULCI
Intercept	90.12	9.48	< .001	71.43	108.82
Characterological attributions	10.38	0.77	.44	-16.06	36.81
Perspective-taking	-17.41	-3.12	<.001	-28.39	-6.43
Characterological attributions x perspective-taking (avg. across groups)	12.27	0.80	.42	-17.78	42.32
Characterological attributions x empathy (European Canadian vs. Hong Kong Chinese)	-13.63	-0.86	.39	-44.75	17.49
Characterological attributions x empathy (Chinese Canadian vs. Hong Kong Chinese)	-20.24	-1.26	.21	-51.88	11.41

Note: Characterological attributions = Reason for Depression Characterological subscale score; Perspective-taking = Davis's Perspective-taking subscale score; LLCI = lower limit 95% confidence interval; ULCI = upper limit 95% confidence interval.

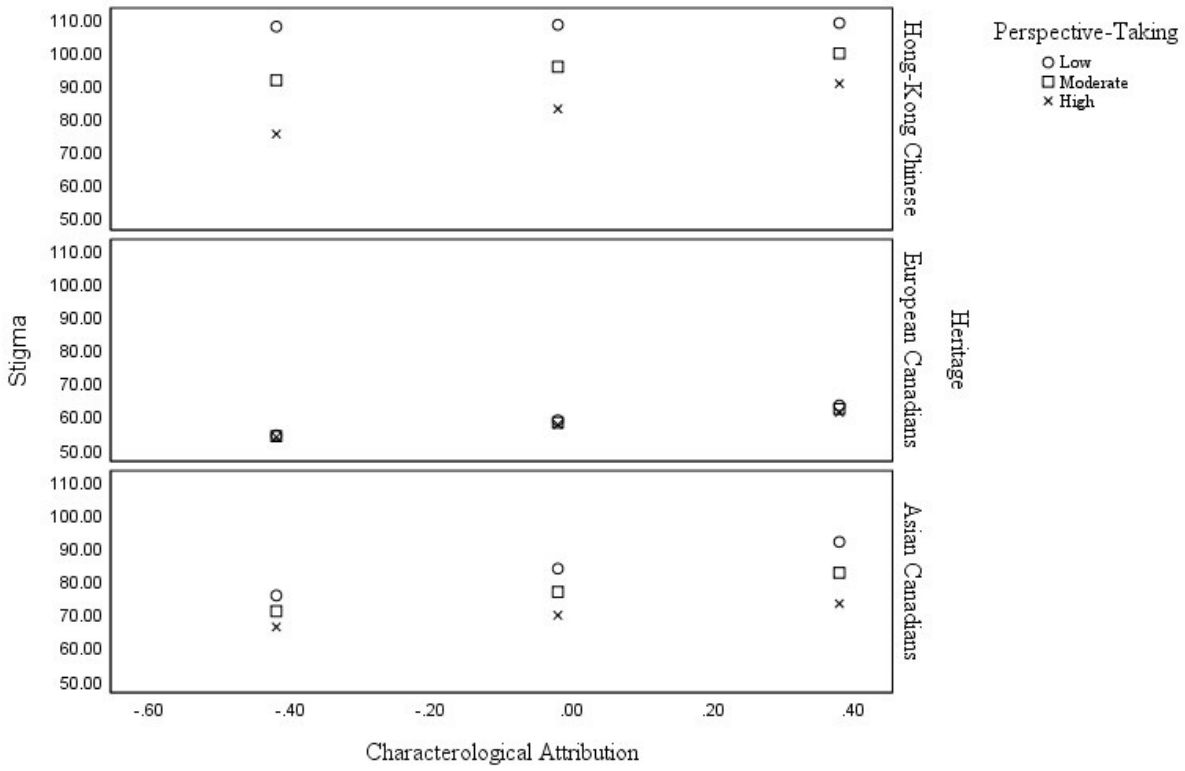

Figure 5 The Moderating Effect of Perspective-Taking on the Relationship Between Characterological Beliefs and Stigma Across Heritage Cultures.

Note: the presented variables are centered. As such, axis numbers should not be used as a reference guide for real scale values. The graph is meant to visually show the relative change in the slope of the relationship at different levels of perspective-taking.

1.17.5 Hypothesis 5

To evaluate whether European Canadians reported engaging in help-seeking behaviours to a greater extent than the Asian groups, a one-way ANCOVA was performed with heritage culture as the independent variable with three groups and mean score on the Attitudes Toward Seeking Professional Psychological Help (ATSH) scale as the dependent variable. The results showed that overall, there was a statistically significant difference between groups on help-seeking behaviours, Welch's $F(2, 155.1) = 16.49$, $p < .001$. A planned contrast analysis revealed that European Canadians ($M = 2.03$, $SD = 0.54$) reported significantly greater help-seeking behaviours than both the Hong Kong Chinese group ($M = 1.74$, $SD = 0.48$) and the Chinese Canadian group ($M = 1.73$, $SD = 0.52$), $t(249.52) = 0.59$, $p < .001$.

1.17.6 Hypothesis 6

To evaluate whether European Canadians would endorse greater independent and fewer interdependent self-construals relative to Chinese Canadians, two independent sample *t*-tests were performed using heritage culture as the grouping variable and mean scores on the SCS independent and SCS interdependent subscales as the outcome variables.

Results supported the hypothesis, with European Canadians ($M = 4.89$, $SD = 0.68$) reporting significantly greater scores on the independent subscale than Chinese Canadians ($M = 4.71$, $SD = 0.67$), $t(334) = 2.42$, $p = .02$. Conversely, European Canadians ($M = 4.80$, $SD = 0.63$) endorsed significantly lower scores on the interdependent subscale than Chinese Canadians ($M = 5.06$, $SD = 0.59$), $t(334) = -3.90$, $p < .001$.

1.17.7 Hypotheses 7-8

To evaluate whether European Canadians would endorse greater mainstream and less heritage culture relative to Chinese Canadians, two independent sample *t*-tests were performed

using heritage culture as the grouping variable and mean scores on the Vancouver Acculturation Index (VIA) mainstream and heritage subscales as the outcome variables.

Results partially supported the hypothesis, with European Canadians (M = 7.40, SD = 1.03) reporting significantly greater scores on the mainstream subscale than Chinese Canadians (M = 6.81, SD = 1.10), $t(334) = 5.08$, $p < .001$. However, Chinese Canadians (M = 6.74, SD = 1.18) and European Canadians (M = 6.50, SD = 1.34) did not differ on heritage culture scores, $t(334) = -1.75$, $p = .08$.

Discussion

1.18 Summary of Results

The primary goals of the study were to evaluate cross-cultural differences in the relationships between etiological beliefs about depression, and stigmatizing attitudes and beliefs; and to evaluate the role of theory of mind, perspective-taking and empathy in the stigma process, comparing this relationship between a Western and Eastern culture. The study was the first to explicitly and formally measure differences in adherence to dimensions of culture as well as levels of acculturation and enculturation in an investigation of mental illness stigma and theory of mind. By directly comparing three distinct cultural samples within a single design - Chinese Canadians, Hong Kong Chinese, and European Canadians, the findings of the study revealed a number of important cross-cultural differences in the psychological characteristics that influence the etiology and expression of stigmatizing beliefs related to mental illness.

1.18.1 Sample Characteristics

The average participant in the study was female, approximately 21 years old, atheist/agnostic or of no religion, and had some post-secondary education. Given that the design of the study employed a convenience sample in Canada and Hong Kong, the demographic profile of the average participant is consistent with a university student. Although several statistical

differences were observed between the cultural groups, none of the demographic differences were meaningful enough to have impacted the cultural relevance or expression of stigma. For example, the statistically significant age difference between the groups amounted to at most a one-year mean age difference. Similarly, the religious affiliation differences reflected common religions of the sample's heritage culture, such as Buddhist for Chinese Canadians and Christian for European Canadians.

11% of the total sample endorsed a lifetime diagnosis of depression and 64% of participants reported meeting someone who had told them about their depression. This particular sample characteristic was important since there was a significant difference between groups on exposure to individuals with depression. European Canadians reported the most contact with individuals with depression, followed by Chinese Canadians and then Hong-Kong Chinese. Given that social contact with stigmatized individuals is thought to be a potential intervention for reducing stigmatizing attitudes (Knaak et al., 2014), exposure to persons with depression may have played a role in influencing the expression of stigma within the cultural groups of the study. By having more contact with individuals with depression, European Canadians may have been had more opportunity to examine their own attitudes and beliefs about how they view depression, evaluate their anxiety related to seeing mental illness, and potentially develop empathy toward this particular disorder (Pettigrew & Tropp, 2008). On the other hand, it is difficult to quantify the impact of this group difference on levels of stigma observed in the samples given that social contact interventions have several key ingredients that are required to have an ameliorating effect on stigmatizing beliefs (Corrigan et al., 2014). Since it is impossible to know the extent of the reported social contact, whether it was direct or indirect, and whether the person told them about their symptoms and recovery process, the role of the reported social

contact remains unclear, but should be acknowledged as a potential confound in the study despite being statistically controlled for.

The cultural differences in both exposure to other persons with depression as well as personal diagnoses of depression also reveal an important cross-cultural pattern that was replicated in this study for depression: non-Western individuals tend to encounter fewer people who talk about mental illness, are less likely to endorse mental illness themselves, and are less likely to seek treatment for mental health problems. These results are consistent with previous estimates of the global prevalence of mental disorders - individuals in Asia consistently endorse lower rates of mental health problems across multiple common disorders than their demographic counterparts in North America (Steel et al., 2014). The underutilisation of mental health services in Asian populations is also well-established (Chaudhry & Chen, 2019; Chen et al., 2014; Gulliver, et al., 2010). For example, in a survey of treatment utilisation in rural China between 1994 and 2015, Ran and colleagues (2019) found continued barriers to traditional Western notions of psychological intervention and lower rates of traditional Chinese medicine utilization.

Cross-cultural researchers have hypothesized that the observed prevalence differences could be due to measurement error, with certain instruments like the Composite International Diagnostic Interview (commonly used in Asia) resulting in under-enumeration of mental disorders (Steel et al., 2009). Similarly, there are differences in psychological and somatic symptom reporting in Asian and Western cultures, where the latter places a greater emphasis on psychological symptoms in psychiatric illness (Parker, Cheah, & Roy, 2001; Ryder & Chentsova-Dutton, 2012; Ryder, et al., 2008). Yet, most screening instruments are developed using the Western emphasis on affective symptoms (Shen et al., 2006), which suggests that failure to appropriately adapt measures across cultures could also be influencing the prevalence

estimates. However, it is important to note that the cultural differences in social contact and personal endorsement of depression in the present study appeared to map onto the person's mainstream culture rather than heritage culture since Chinese Canadians and European Canadians had much more similar endorsed rates than Chinese Canadians and Hong Kong Chinese. As such, the finding may be more consistent with the interpretation that it is indeed a true geographically driven difference since higher rates of exposure to depression were observed in Canada, regardless of the ethnicity of the individual. The convergence of this finding with previous epidemiological survey estimates (e.g., Patten, 2003; Shen et al., 2006; Steele et al., 2014) highlights the need for more research to elucidate this cultural difference in prevalence of mental illness and help-seeking including its source and associated protective and maintenance factors.

1.18.2 Cross-Cultural Differences in Stigmatizing Beliefs

One of the primary findings of the study was that there appear to be differences in the cross-cultural endorsement of stigmatizing beliefs. Specifically, compared to both Hong Kong Chinese and Chinese Canadians, European Canadians endorsed significantly lower stigmatizing attitudes toward mental illness. The two Asian heritage groups were not significantly different from each other. The absolute value difference in self-reported scores amounted to approximately 25% suggesting that it is not merely a statistical difference, but a meaningfully large magnitude observed score difference. These results contribute to the robust body of evidence that has found cross-cultural or ethnic differences in endorsements of mental illness stigma (Anglin, Link, & Phelan, 2006; Griffiths et al., 2006, Haraguchi, Maeda, Mei, & Uchimura, 2009; Lauber et al., 2003; Masuda & Boone, 2011). The specific pattern of results is also consistent with previous literature that found lower endorsements of mental illness stigma in Western cultures relative to Asian cultures (e.g., Griffiths et al., 2006).

There are a number of potential explanations for why stigma is more likely to be endorsed in Asian cultures compared to Western cultures. Culture shapes personal understanding of mental health including the definition of mental illness, mental health literacy, causal attributions or etiology, acceptance of mental illness, real or perceived consequences of disclosure of a diagnosis, help-seeking behaviours, assessment, and treatment approaches (e.g., Burns, Jhazbhay & Emsley, 2011; Carter, Read, Pyle, & Morrison, 2017; Petrie, Broadbent, & Kydd, 2008). Greater mental illness stigma in Asian cultures may be conceivably explained by any of these variables or more likely a complex interplay between many of them in different contexts. One proposed mechanism that may lead to greater stigma in Asian cultures, in particular more social distance, is threat to one's status. This factor may have a direct effect on the afflicted individual, but also a wider impact on the family (past, present and future), and potentially the larger culture the individual is a part of. For example, mental illness poses a significant threat to family lineage via damage to the reputation of that lineage, or by making one an undesirable mate and thereby unable to produce a lineage (Yang et al., 2013). In this example, mental illness precludes one from fulfilling a culturally relevant and important role, which is a considerable threat to one's moral standing in Chinese cultures. The threat to family lineage may be further understood as a threat to the lineage of one's ancestry. Mental illness stigma taints one's entire family – ancestors, current family, and future offspring. In this way, filial piety (e.g., deference to older individuals including ancestors to promote social harmony; Bedford & Yeh, 2019) and the fear of loss of face (i.e., an individual's social and moral status in society; Yang & Kleinman, 2008) may be closely linked to the value placed on lineage and family. When viewed through this theoretical lens, Asian cultures have more societal pressure to hide and stigmatize mental illness compared to their Western counterparts.

On the other hand, the findings in the present study are inconsistent with studies that have found intracultural variability in stigma expression in East Asian cultures. For example, Chaudhry and Chen (2019) found that South Asian Americans endorsed greater courtesy stigma compared to European Americans, however East Asian American endorsements of courtesy stigma did not differ significantly from either group. In this regard, Chaudhry and Chen's findings support a Western-Eastern cultural difference, but also highlight that Asian cultures may differ on stigma when compared to one another, which was not found to be the case in the present study. A number of potential factors may be responsible for this cross-study inconsistency, such as sampling variability (the recruitment areas and the cultural groups were different) or measurement differences (Chaudhry and Chen measured a specific type of stigma, and the present study measured stigma more broadly). Nevertheless, it is important to acknowledge that there may be intracultural variability related to stigma within East-Asian cultures that was not captured in the current study results.

The differences in stigma scores may have also been related to methodological factors that interacted with cultural factors. For example, demand characteristics might have affected participant score variability given the self-report format of the CCDSS instrument since many questions are relatively transparent about the stigma content of the instrument (e.g., "I would be unlikely to have an intimate relationship with someone if they had depression", "I try to avoid being friends with someone who has depression"). The wording of the questions might have prompted some participants to attempt to save face by not admitting their true beliefs about stigmatizing others. This difference may be culturally influenced given the greater emphasis on social acceptance and fitting in with society in Asian cultures.

Alternatively, the observed differences in stigmatizing attitudes could reflect true population score differences given the stringent measurement model for stigma within the study. Mental illness stigma was measured using the Cross-Cultural Depression Stigma Scale (CCDSS) instrument, which is a psychometrically sound, empirically constructed, multidimensional measure of stigma. The instrument was specifically developed to capture stigmatizing attitudes and beliefs related to depression in Chinese cultures. The measure was validated cross-culturally and is therefore culturally sensitive. The CCDSS also measures stigma across multiple domains including culturally relevant constructs such as self/personal, family, workplace and culture. The use of the CCDSS lends credence to the pattern of findings and bolsters evidence for true cultural variation in mental illness stigma.

1.18.3 Cross-Cultural Differences in Etiological Models of Depression

Another important cross-cultural difference emerged in the causal attribution (i.e., etiological) models of depression that were endorsed by each group. When examining the specific reasons that individuals tended to believe as the cause of someone else's depression (compared to overall score), European Canadians once again reported significantly lower scores than both of the Asian samples on individual reasons for attributing someone's depression: characterological (not having a stable sense of self), existential (disillusionment with life), interpersonal conflict (problems in interpersonal relationships), intimacy (lack of intimacy), and achievement (lack of sense of accomplishment). As with overall stigma scores, there were no significant differences on any reasons for depression subscales between the Chinese Canadian and the Hong Kong Chinese groups. Consequently, cross-cultural differences in etiological attribution of depression also appeared to be divided by heritage rather than mainstream culture. Thus, personal reasons for believing why someone has depression had more to do with cultural background than geographic location.

This pattern of findings supports the notion that adherence to heritage culture plays a meaningful role in the development of causal attributions of mental illness and subsequent beliefs of stigma. Cross-cultural differences in casual attributions of depression suggest that Western etiological theories (i.e., an etic perspective) of mental illness may not accurately reflect causal attribution frameworks in Asian cultures, which likely lead to unique pathways to stigmatization. More specifically, the criteria for first labelling a mental illness and then stigmatization are both context dependent (Koschorke, Evans-Lacko, Sartorius & Thornicroft, 2017). For example, in Chinese cultures, psychological disorders have been attributed to genetic defects (Blignault, Ponzio, Rong, & Eisenbruch, 2008), over thinking (Yang et al.,2010), abnormal brain activity (Li, Hatzidimitriadou & Psoinos, 2014) and spirits or supernatural beings (Mirza, Birtel, Pyle & Morrison, 2019; Philips, Li, Stroup, & Xin, 2000) among other causes. Age and acculturation have also been found to influence etiological beliefs of mental illness. Older Chinese adults have been found to have less traditionally Western knowledge of mental illness and are more likely to attribute symptoms of mental illness (e.g., sleep disturbance) to a physical complaint (Tran, Wong, Yung, & Lam, 2008). Symptoms of mental illness are also often seen as not requiring intervention (Tran et al., 2008).

An interesting pattern was noted within each cultural group across the mean values of the Reasons for Depression subscales – regardless of one's cultural background, all participants tended to report higher mean scores of attributions for the interpersonal conflict, intimacy, and achievement subscales than for existential or characterological subscales. In other words, regardless of one's cultural beliefs, depression appeared to be attributed more to social reasons such as relationships with others and achievement than to intraindividual characteristics such as someone's sense of self or views on life. This finding may be an artefact of the study's sample.

Students registered in a psychology course may be more willing to challenge stereotypes associated with mental health problems or endorsed less stigma at baseline. Previous research has found one's level of education may play some role in mental illness stigma (Girma et al., 2013; Lam et al., 2006; Corrigan & Watson, 2007). Therefore, the sample may not reflect the full diversity of views related to depression as a result of social or cultural factors (e.g., education, socioeconomic status, urban vs. rural). Conversely, the observed results may also reflect real population effects. Society's greater exposure to information about the effects of stress and interpersonal relations on mental illness in recent decades, through mental health literacy programs and to a larger extent globalization, may have placed emphasis on the stress aspect of the diathesis-stress model more than has been historically. This process may limit exposure or challenge traditional Chinese understanding of mental illness through the lens of Confucianism.

The etiological beliefs endorsed by the Asian samples in the present study suggest the samples may be more similar than different relative to European Canadians. One explanation for this may be that Hong Kong Chinese individuals may be more likely to accept Western concepts and notions of mental illness than Mainland Chinese individuals, and therefore be more similar to an acculturated Chinese Canadian sample. Group differences between the two Asian samples may have been more prominent if the Chinese sample was recruited from Mainland China where traditional Western notions of mental health are likely less known and accepted. It may also be that the Reasons for Depression Scale did not capture all of the unique attributions of depression relevant to Asian cultures (e.g., supernatural, spiritual and/or mythical factors). This finding would benefit from additional exploration in future research studies.

1.18.4 The Impact of Empathy and Perspective-taking on Stigma

One of the main goals of the study was to understand the impact of empathy and perspective-taking on stigma. The author hypothesized that greater levels of empathy and

perspective-taking would be associated with fewer stigmatizing attitudes regardless of a primarily biomedical or psychosocial causal attribution of depression, based on the assumption that stronger theory of mind abilities would ameliorate stigmatizing attitudes and beliefs. The results only partially supported the hypothesis and revealed a nuanced measurement-related issue that has not been taken into account in much of the stigma literature. The results showed that greater levels of empathy, but not perspective-taking were associated with fewer stigmatizing attitudes. Furthermore, causal attribution of depression was also an important factor since attributing symptoms to the person's character was associated with greater levels of stigma above and beyond the variance accounted for by empathy and heritage culture.

In order to understand why empathy, but not perspective-taking was associated with less depression related stigma, it is important to understand that empathy and perspective-taking are two discrete constructs that rely on affective and cognitive processes, respectively. Indeed, someone who is proficient at empathy may struggle with perspective-taking (Kanske, Böckler, Trautwein, Lesemann & Singer, 2016). Empathy entails sharing another's emotions while simultaneously understanding that the emotion is another's and not one's own (de Vignemont & Singer, 2006). Perspective-taking is analogous to theory of mind and involves the cognitive process of understanding others' internal worlds (e.g., thoughts, intentions, mental states; Preckel, Kanske & Singer, 2018). The two constructs share an important cognitive process of distinguishing the self from others (by inferring others' states), and therefore interact in complex ways as individuals interpret their social world (Preckel et al., 2018). However, they are nevertheless distinct. Therefore, it may be that the emotional response evoked by a mental image of someone with depression plays a greater role in the stigma process than the cognitive process inherent to perspective-taking. It is worth noting that empathy only accounted for 3% of the

variance above and beyond demographic factors in stigmatizing attitudes and beliefs across all cultural groups. While this finding was statistically significant, 3% is a small amount, and certainty creates doubt about focusing anti-stigma intervention efforts on empathy or changing a perceiver's emotional reactions to someone with mental health problems.

The finding that characterological attributions of depression lead to greater stigmatizing beliefs has a number of potential explanations. The results are consistent with previous research that found attributions of weak or poor character (i.e., internal attributions) to be associated with greater stigma (Martin, Pescosolido & Tuch, 2000). It is possible that characterological attribution involves the assignment of responsibility and controllability to the consumer. If one is weak, one is unable to adequately navigate hardships to the same extent as others, and subsequently, one falls victim to mental health problems and therefore stigma, particularly social distance (Corrigan, Markowitz, Watson, Rowan & Kubiak, 2003). The responsibility for the illness lies entirely with the consumer including the extent to which the original cause is controllable and treatable. Corrigan and colleagues (2003) posit that attributions of personal responsibility lead to increased negative feelings, which in turn lead to discriminatory actions, whereas the opposite is true if responsibility is externally attributed with positive attitudes (e.g., pity) leading to less avoidance. This relationship may be exacerbated in Asian cultures where loss of face and filial piety prevail, and loss of social and moral standing may be particularly threatened if one is viewed as the cause of their mental affliction. Under this framework, and coessential with the Chinese belief of Confucianism, the individual has willingly chosen their needs over others (i.e., family) and has subjected their relations to almost certain status loss.

To provide a more rigorous evaluation of the impact of theory of mind abilities on stigma, the analysis was repeated using a behavioural social perception task (the TASIT;

McDonald et al., 2003) for the Chinese Canadian and European Canadian groups only. The results were somewhat consistent with the self-report analysis given that perspective-taking was once again not associated with stigmatizing attitudes when measured behaviourally. One reason for the consistency is that TASIT is mostly a behavioural measure of cognitive components of theory of mind, therefore the primary process evaluated is cognitive rather than affective (the process inherent to empathy). More specifically, three of the four comprehension questions on the TASIT ask participants to evaluate cognitive components of theory of mind – the other evaluates an affective component. For example, participants were asked to interpret actors' mental states (i.e., beliefs, intentions, emotions) through various contextual cues. Although participants were asked to interpret actors' emotional states, identification of emotions is not sufficient for an empathic response. Therefore, the TASIT may not adequately assess empathic concern. The distinction between cognitive (inferences about beliefs, thoughts, motivations) and affective components (inferences about emotional states) of theory of mind has been borne out in research investigating the underlying neural networks (Preckel et al., 2018) as well as selective impairments in different psychopathologies (e.g., Shamay-Tsoory & Aharon-Peretz, 2007). Overall, given the consistent evidence for the lack of impact of perspective-taking, even if measured behaviourally, it is likely that the affectively laden empathy is a more important construct in influencing stigmatizing attitudes in depression than the cognitively-laden perspective-taking.

One must acknowledge that the significance value of empathy as a predictor of stigma appeared to shift in the TASIT analysis with the addition of perspective-taking into the model, moving from a significant negative relationship to a non-significant one. As previously highlighted, the overall variance accounted for in the stigma outcome by the addition of empathy

was only 3%. Given the small effect size and the potentially large measurement error across both self-report and behavioural tasks (e.g., demand characteristics, administration procedure differences) of perspective-taking, it is possible that the small effects in the models became difficult to measure reliability, thereby resulting in inconsistent findings. Another likely explanation is the constituency of the analyzed sample. Since the TASIT was only administered to the Canadian groups, whereas the Davis scale was administered to all three groups, the difference in the significance of empathy in the regression analysis could be due to differences in the characteristics of the sample.

An important takeaway from the above analysis is the potential impact on statistical results when using behavioural versus self-report measures. Although the TASIT may not measure identical constructs to the Davis scale, it nonetheless highlights an inherent problem in much of cross-cultural stigma research – the use of self-report measures as proxies for discriminatory behaviours in daily life. Despite the field's focus on stigmatizing attitudes, it is the behaviours resulting from said attitudes that are of more concern since acting on stigmatizing beliefs is what causes harm for individuals with mental illness. Yet, most researchers continue to use self-report measures of stigma attitudes, which only identify thoughts and feelings rather than behaviours, as equivalent indicators of stigma. The current study demonstrates the utility of attempting to replicate self-report findings via more behaviourally-based tasks since the two types of measures may not always concur. Such research is crucial in order to disentangle measurement error and uncover real mechanisms of action in promoting stigma versus statistical artefacts.

To expand on the initial analyses of stigma and empathy, an additional goal of the study was to examine whether empathy and perspective-taking have an impact on the relationship

between stigma and its predictors (rather than stigma as the sole outcome). The positive relationship between characterological attribution of depression and stigma was replicated here as well. The results of the moderation analysis also revealed significant cultural differences in the role of empathy. In Hong Kong Chinese individuals, greater empathy strengthened the positive relationship between characterological attributions about causes of depression and stigma. In other words, greater empathy resulted in more stigmatizing beliefs about mental illness if one attributes them to someone's character. In addition, the impact of empathy appeared to diminish when characterological attribution was high. Having low or high empathy scores appeared to make little difference in stigma if one attributes depression strongly to a person's character. On the other hand, Chinese Canadians and European Canadians endorsed a different pattern of moderation results, suggesting a cultural difference along the geographic rather than heritage line (i.e., groups living in Canada were more similar to one another). Specifically, greater characterological attributions about causes of depression resulted in greater stigma in the Canadian groups, regardless of the level of empathy. Unlike the Hong Kong Chinese group, high empathy always resulted in fewer stigmatizing beliefs, even for those who had strong characterological attributions. As in the previous analyses, perspective-taking did not appear to have a significant moderating effect on stigmatizing attitudes.

The moderation results suggest that the impact of empathy may in fact be detrimental on stigma, and its role is reduced in individuals strongly affiliated with an East-Asian culture. The mechanism of an empathetic response entails understanding another's emotions regardless of whether those emotions are positive or negative, which elicit an affective-congruent response or reaction in the perceiver. However, the distinction between positive and negative empathetic responses may be an important mechanism of action in cross-cultural stigma expressions. Singer

and Klimecki (2014) delineate two empathetic responses, which both elicit affective responses to suffering with unique outcomes to the perceiver and empathizer. A compassionate response is generally understood to be evoked when witnessing another's suffering, which then leads to a positive response in the form of pity or concern and a subsequent offer of help (Singer and Klimecki, 2014; Singer & Lamm, 2009). Conversely, empathic distress, a counter-empathic response, is characterised by intense negative feelings that lead to the desire for social distance as one tries to extinguish or avoid the subsequent aversive internal response (Singer & Klimecki, 2014). The observed cross-cultural differences in the moderating role of empathy are consistent with this theory and imply that for individuals in the Hong Kong Chinese group, an empathic distress response may take place when thinking about persons with mental illness rather than the hypothesized compassionate response. Since the current study did not assess the type of empathic response an individual had to someone with depression, it is difficult to ascertain whether participants imagined an empathic compassionate response or an empathic distress reaction when filling out the empathy questionnaire, which would be accompanied by prosocial or stigmatization self-report responses respectively. Together, these findings highlight the importance of examining the mechanisms of action on stigma from a high-resolution, nuanced perspective since even processes that are traditionally hypothesized to be helpful, such as empathy, appear to potentially be detrimental in the right cultural context.

1.18.5 Cross-Cultural Differences in Self-Construal and Dimensions of Culture

The varied and nuanced cross-cultural findings in the current study highlight a key hypothesized property of culture as a social construct – it is dimensional and multifaceted. In addition to operating at the societal level, culture may also influence behaviour at the individual level. To evaluate culture at the individual level of analysis, the study's two Canadian cultural groups were compared on their levels of independent and interdependent self-construals.

Consistent with the hypotheses, the results of the comparison showed that European Canadians tended to endorse significantly more independent self-construals and fewer interdependent self-construals than Chinese Canadians. Given that the Self-Construal Scale could only be administered in Canada, a comparison to the Hong Kong Chinese group was not possible.

The hypotheses, specifically that European Canadians would endorse an independent self-construal more strongly than Chinese Canadians (Ryder et al., 2000), were in line with a large body of research (e.g., Oyserman et al., 2002; Ryder et al., 2000;) that shows group differences on cultural identity and orientations. Adherence to interdependent and independent self-construals offers one explanation for potential cross-cultural variability in depression related stigma. In this study's sample, Chinese Canadians endorsed an interdependent self-construal to a greater extent than European Canadians, which suggests the group adheres to East Asian norms, traditions, and values (i.e., belonging, fitting in, maintenance of social harmony and social roles). This adherence to the traditional Chinese values of saving face and filial piety may contribute to mental illness related stigma (e.g., induce shame, barriers to mental health services). The culture-specific mechanisms likely relate to the increased blame (responsibility beliefs) placed on the individual, and consequently the family, for the illness. Increased blame and shame, fueled by concern for how one and one's family are viewed by others, conceivably leads to concealment of mental illness. Conversely, adherence to an independent self-construal promotes the individual's self-interests, which in the context of mental illness may include effective treatment of psychological distress in an effort to promote self-advancement. Therefore, based on the self-construal framework, there are likely distinct culture-specific threats associated with adherence to an independent or an interdependent self-cultural. The former is likely associated with less threat and perhaps even comfort if help-seeking is the antidote to psychological pain. On the

other hand, the threat associated with disclosure when one adheres to an interdependent self-construal is ostensibly larger if moral and social standing as well as one's lineage are threatened (e.g., Yang et al., 2013). Overall, self-construals likely contribute to differences in endorsement of mental illness related stigma. Specifically, adherence to an interdependent self-construal likely underlies greater stigma. Given the evidence in support of different patterns of association in adherence to self-construals among groups, future research is needed to extend this work in Hong Kong Chinese and other Asian populations.

The impact of intraindividual cultural factors such as self-construal is becoming increasingly important in research at every level of analysis of stigma including the biological. For example, an emerging line of research in the field of cultural neuroscience has found that cultural orientation modulates brain function (Ma et al., 2014; Sui & Han, 2007). Han and Humphreys (2016) found that priming a self-construal mediates cognitive and affective processes. This is particularly relevant to the current study's findings, as adhering to a cultural orientation likely further complicates the process of empathic concern, which was found to moderate the relationship between characterological beliefs and depression related stigma. Taken together, the findings highlight the unique role of culture in the stigma process.

Expanding on the dimensional conceptualization of culture in the present study, a comparison of European Canadians and Chinese Canadians on levels of acculturation was partially consistent with the hypothesis: European Canadians endorsed greater identification with mainstream culture but did not endorse lower identification with heritage culture than Chinese Canadians. As before, a comparison to the Hong Kong Chinese sample was not possible due to study implementation differences internationally. This finding could potentially relate to the cross-generational cultural influences in the sample. For example, the Chinese Canadian students

in the sample, who were commonly children of first-generation immigrants, were likely to be heavily immersed in their heritage culture through their parents' traditions. Consequently, they may have been less likely to participate in mainstream culture if part of their time is also committed to heritage culture events and traditions (Doucerain et al., 2017). Continued participation in heritage culture groups likely serves to retain heritage culture identification. Although integration with mainstream culture occurs concurrently, it might not occur to the same extent in Chinese Canadians as Euro-Canadians, whose Western European culture is much more similar to the mainstream Canadian culture, thereby diminishing its impact on acculturation.

The Chinese Canadian group in the study adhered to heritage culture to the same extent as their Euro-Canadian counterparts. This finding may have occurred for several reasons: first, identification with heritage culture could be diminished because the Chinese Canadian individuals are currently residing in Canada and not in an East-Asian country. As years spent living in Canada was not measured in the study, the extent to which the participants adapted to Canadian culture due to greater exposure to Canadian norms is difficult to determine. Another explanation is that the European Canadians may have had a hard time differentiating mainstream culture (i.e., Canadian) from heritage culture (i.e., European culture), subsequently conflating them. The majority of participants identified a Western European culture as their heritage culture, and there are several overlapping values, norms, and languages between Canadian and Western European cultures. Moreover, the majority of European Canadians were born in Canada, and while it was unknown what generation they were, it may be that they perceived the two types of cultures (European and Canadian) as more similar than different.

The results of the reviewed cultural analysis provide strong rationale for considering and operationalizing culture at the level of the individual as each individual may endorse heritage and

mainstream culture identification to varying degrees in the context of their unique acculturation experience (e.g., years living in Canada, language spoken at home, etc.). Assessment of culture requires nuanced instrumentation and measurement - we cannot begin to understand the multidimensional complexity of culture unless we attempt to operationalize and explicitly measure its various aspects. One of the main messages of this study is that the dimensions of culture (e.g., self-construals, acculturation) play a role in the stigma process and require acknowledgement and measurement – a task that is frequently ignored in cross-cultural research.

1.19 Implications for Research, Theory, and Practice

The findings of the study have important implications for research on cross-cultural stigma in mental illness, as well as clinical applications of anti-stigma interventions. Primarily, the results support the utility of continued research into the cognitive and affective aspects of stigma development and expression. In this study, cultural influences on mental illness stigma were established to be both cognitive and affective in nature, with differential moderating impacts on stigmatizing beliefs and factors that predict them. Therefore, it is vital to continue to support the research of mechanisms of action that promote stigma, and conversely, reduce it. In addition, stigma appears to be uniquely conceptualized across different cultures. In a multicultural society like Canada, it is incumbent upon treatment providers in mental health to take this cross-cultural variation into account and to be informed about the cultural influences on their patients' beliefs and behaviours. Implementing anti-stigma interventions in a culturally sensitive manner can only be achieved through research in a variety of different cultural contexts, locations, and populations. The present study demonstrates the immense utility of going through the additional effort to recruit and gather data directly in non-Western countries rather than relying on convenience samples in Canada. Future research should attempt to gather data internationally to improve the generalizability and the accuracy of any data.

Another important implication of the results of the study is that culture cannot be conceptualized as a uniform construct. The observed cultural group differences in self-construals and degrees of acculturation demonstrate that there are nuanced cultural factors within the individual as well as at the societal level that influence the stigma process. In light of these findings, asking research participants or therapy clients what culture they identify with is simply insufficient. The dimensional nature of culture as a psychological and sociological construct suggests that it must be measured in a multifaceted manner. For example, as evident by the significant differences between the Chinese Canadian and European Canadian groups, citizenship and ethnicity must not be conflated with culture. Although both of these groups might be Canadian from a geographical/legal perspective, there were palpably demonstrable differences in their cultural views related to stigma about mental illness. On the other hand, being in Canada also seemed to exert cultural influence since the Hong Kong Chinese group was vastly different from the Chinese Canadian group, despite sharing heritage culture. As such, researchers in the area of cross-cultural stigma are encouraged to broaden their measurement tools and assessment strategy of culture to examine both intra- and interindividual mechanisms such as self-construals, acculturation, and societal expectations.

Overall, the findings support empathy as a potentially meaningful construct to further explore in stigma research. Empathy appears to not only predict stigmatizing beliefs related to depression but may also reduce stigma in individuals who attribute mental illness to a person's character. However, the role of empathy varied across cultural groups and appeared to have a diminished impact in an East Asian context compared to a Canadian context. The role of empathy may also be leveraged clinically to examine whether supplementing existing social contact anti-stigma interventions with psychoeducation about empathy would be useful. Despite

this promising line of research, it is prudent to acknowledge that the small effect sizes of empathy make it a limited explanation for stigma, though a meaningful one. Furthermore, a growing body of research examining the efficacy of anti-stigma interventions has found that stigmatizing attitudes and beliefs are relatively resilient to intervention; immediately following an intervention stigmatizing attitudes may decrease, but often return to baseline at follow-up (e.g., Luty, Rao, Arokiadass, Easow, & Sarkhel, 2008). As such, replication of the current study's findings and additional research is needed to clarify the role of empathy in the expression of stigma, its interaction with other predictors of stigma such as etiological models of belief, and the utility of attempting to incorporate empathy into social contact interventions.

One fruitful implication of the findings is the notion that empathy does not appear to be a positive influence on stigma in every context. Compared to Canadians, individuals from Hong Kong did not appear to benefit from having higher empathy if their characterological attribution of depression was high. Singer and Klimecki's (2014) model of empathy was a useful framework to interpret this finding because it underscored the potential for empathy to backfire in certain contexts and produce empathic distress and social distance rather than empathic concern. However, the authors of this theory also contend that through compassion training, empathetic distress can be extinguished and supplanted by empathic concern. The connotation is that much like culture, empathy may not be a uniform construct that is always a benefit in reducing stigma. A nuanced examination in research and careful application in interventions is the best approach going forward. Future studies should attempt to understand the types of cultural contexts that produce iatrogenic effects of empathy.

Finally, the current study replicated previous findings that individuals of East Asian heritage appear to be less likely to endorse struggling with depression and to have met others

with depression. They are also more likely to endorse stigmatizing beliefs related to depression. The cultural group differences on these factors appeared to fall across heritage rather than geographical lines, with Chinese Canadians and Hong Kong Chinese individuals being more similar to each other than to European Canadians. The results replicate previous epidemiological, and clinical study findings across the world of East-Asian individuals endorsing more hesitancy and apprehension around accepting mental illness in their cultures (Chaudhry & Chen, 2019; Chen et al., 2014; Gulliver et al., 2010; Steel et al., 2014). This pattern is particularly relevant for culturally-informed clinical work where hesitation around acknowledging mental health problems and showing understanding toward such problems in others are key ingredients to successful recovery. Clinicians working with Asian cultural groups in Canada are encouraged to conduct culturally sensitive assessments, and to carry out more comprehensive interviews about their clients' cultural views and beliefs. A necessary ingredient for successful therapy with such clients becomes the clinician's understanding and acknowledgment that their patient may not want to speak about mental illness; that it may be seen as a burden on their family and others; and that it brings shame, loss of face, and demonstrates a weakness of character. Without a nuanced understanding of culture and knowledge of appropriate assessment tools, an uniformed clinician runs the risk of applying a Western framework of mental illness and its stigma to an individual with profoundly different cultural attitudes and beliefs.

1.20 Strengths and Limitations

The present study has a number of important strengths. This was the first study to explicitly and formally measure dimensions of culture to provide an explanation for differences in the expression of mental illness stigma. By operationalizing both acculturation and adherence to self-construals and demonstrating their cross-cultural variability, the findings represent an important contribution to the theory and measurement of culture compared to past research that

has relied on the number of years an individual has lived in a Western or host country as a proxy for level of acculturation. In this regard, the results provide insight into the role of culture in stigma, and not ethnicity alone.

The study also involved a direct comparison of North American and Chinese individuals. By using an internationally recruited sample and studying individuals in their heritage geographical location, the study findings become more valid and generalizable since the role of Western cultural influence can be better isolated and controlled for. Therefore, the experimental manipulation in the study is more stringent than cultural research that uses ethnically diverse samples recruited in the same country since the latter population may be strongly influenced by mainstream culture.

Lastly, the use of a behavioural task of perspective-taking to confirm the findings from a self-report measure of perspective-taking provided valuable insight into the need for replication and confirmation of findings with behavioural measures. While measuring attitudes is important, it is perhaps more important to evaluate whether such attitudes translate to actions and different behavioural choices. The methodology employed in the present design serves as a preliminary model and first step toward incorporating both self-report and behavioural tasks into cross-cultural research. Such endeavors serve the larger goals of addressing a replication crisis in psychology and of demonstrating the impact of stigmatizing attitudes on real-world behaviours.

Despite its strengths, the study suffers from a number of methodological and theoretical limitations. A primary concern in any cross-cultural research is that of linguistic and cultural equivalence of its measurement instruments. Although a stringent method of instrument adaptation (the WHO guidelines) was used to develop and culturally adapt the main stigma outcome instrument for the Hong Kong Chinese participants, the other measurement tools

employed in the study were not developed cross-culturally. Consequently, it is unclear how well these tools generalize in their administration in a different language and a different culture. With regard to language equivalence, this can be problematic because two languages may not have equivalent words. For example, a commonly used English word in questionnaires such as “fair” has no identical equivalent in a French language (Leplege et al., 1998). Similarly, adapting a questionnaire for another culture requires going beyond mere language to understand the specific cultural customs that are being assessed. For example, the Health Assessment Questionnaire, a commonly used instrument in mental health research, asks participants about being able to sit in a bathtub. Yet, someone from an East Asian culture such as Thailand would find that puzzling because in that culture, people do not use bathtubs (Osiri, Deesomchok, & Tugwell, 2001). Accordingly, mere translation of the question into Tagalog would not be sufficient. Taken together, these equivalence concepts reveal a potential measurement problem within the study since the majority of its instruments were not developed cross-culturally.

A methodological limitation in the study arose when some instruments (e.g., Self-Construal Scale) could not be administered to the Hong Kong Chinese group due to difficulties with managing the international implementation of the study from Canada. Since the Hong Kong Chinese study team only had periodic check ins and contact with the Canadian team, some administrative decisions made by the Hong Kong Chinese team independently precluded having the same measures in each group. Thus, a direct comparison of all cultural components (e.g., acculturation, self-construal) were not possible, limiting the cross-cultural generalizability of the findings. All study groups were also a convenience sample of students. Although such participants are still reflective of their respective cultures, they represent a very specific type of demographic (young, educated), which may not be representative of the wider general population

of Canada and China. For example, would being younger and educated make one less likely to stigmatize compared to someone who is in rural China with less education? Future research needs to replicate the study with general population participants.

Statistically, although the analyses controlled for group differences such as social contact with depression, the nature of that contact may have still influenced the stigmatizing belief expression across cultural groups, acting as an uncontrolled confound. The extent, nature, and type of social contact with people with depression that was reported by the participants were not measured, all of which could have influenced self-reports of stigma beliefs. All analyses were also regression based and are therefore not causal. It is possible that the observed relationships are explained by unmeasured third variables rather than directly influencing one another.

The study employed self-report measures, which can be susceptible to the reference group effect for comparison across cultural groups (Credé, Bashshur, & Niehorster, 2010). The reference group effect occurs when individuals from one cultural group use different points of reference to evaluate themselves relative to another cultural group (Credé et al., 2010). For example, the Chinese Canadian participants may have responded to the self-report items based on how they compare to other Chinese Canadians, while the European Canadians may have evaluated themselves based on a comparison with other European Canadians and responded accordingly. The results of the study also showed that using a behavioural measure of a construct, such as perspective-taking, leads to different findings than self-report. However, almost all of the measures in the study were self-report. Though it was beyond the scope of the design to measure all constructs behaviourally, it nonetheless means that some of the constructs assessed in the study may not accurately reflect actual behaviours, which would be a more robust type of measure to employ in this type of research.

Historically, cross-cultural researchers have defined Western populations to include Americans, Canadians, Australians, Kiwis and Western European individuals (e.g., Ryder, Yang, & Heine, 2002). However, the present study expanded this definition to also include Eastern Europeans. Similarly, the Chinese Canadian group included participants from a variety of East-Asian countries. The homogenization of the latter group is inconsistent with the geographical and cultural diversity of East Asia and as such, there may have been intracultural differences that were present in the study, but were not explored (Chang, Tsai, & Sanna, 2010). The same caveat is also applicable to the European group given its cultural diversity. As such, the findings of the study cannot be generalized to all populations of Asian and European descent. It is also possible that the two Canadian groups in the study were not distinct enough, which may have obscured cross-cultural differences that exist in the population. For example, despite being overall lower in their endorsement of mainstream culture than European Canadians, Chinese Canadians still endorsed relatively high levels of identification with their mainstream culture, signalling strong acculturation. In addition, both of the Canadian cultural groups were recruited from the same English-speaking university, likely denoting similar socioeconomic backgrounds of the participants. Furthermore, such students would all have had sufficient knowledge of English to be able to complete advanced studies in the language. The fact that some differences between cultural groups were found in the present study, despite the above similarities between the two groups, suggests that more distinct differences may emerge between more culturally divergent samples.

1.21 Future Directions

The results of the study offer a platform for fruitful future research studies on cross-cultural expressions of stigma in mental illness. One important research avenue would be replicating the study with general population participants. Given that the current study recruited

university students who are likely of higher socioeconomic backgrounds and education levels, a replication with more typical representatives of the general population (e.g., mainland China) would reveal whether the observed relationships generalize to individuals from diverse backgrounds within each culture.

The successful application of the TASIT in the study supports continued experimentation and application of behavioural tasks in cross-cultural research in lieu of self-report measures. Future studies should attempt to compare more comprehensively findings from self-reports of stigmatizing attitudes to behavioural choices. This would be an important area to investigate given that stigmatizing attitudes and beliefs may have different mechanisms of action than stigmatizing behaviours. Similarly, assessing individual-level cultural variables such as self-construals appears to be useful in understanding cross-cultural differences. Future studies should attempt to explicitly measure culture rather than hold ethnicity as a proxy of culture.

Lastly, the present study reaffirms the utility of conducting international research when attempting to understand cross-cultural relationships. Although such studies are logistically more difficult and more costly than using convenience multi-cultural samples in North America, the results of this study demonstrate that immigrants from East-Asian countries do not appear to endorse the same stigma processes as individuals of the same culture who live in their country of heritage. Specifically, Chinese Canadians were significantly different from Hong Kong Chinese individuals despite sharing heritage. Consequently, geographical location appears to play a role in shaping stigma attitudes above and beyond cultural similarities. Researchers in the field of mental illness stigma should attempt to observe and compare cross-cultural phenomena in the individuals' host countries as often as possible.

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Appendix A: Study Questionnaires

Background Information Form

背景信息表

Please provide the following information in the spaces provided:
请在空格处填上相关信息

1. Gender: ☐ Male ☐ Female ☐ Transgender 2. Age: _____
性别 男 女 跨性别者（变性人） 年龄

3. What is your first language? _____
您的母语

4. What is your most fluent language? _____
您最擅长的语言

5. Countries of birth: You: _____ Father: _____ Mother:_____
出生国 您自己 父亲 母亲

Father's Side 父方 Mother's Side 母方

Grandfather: 祖父 _____ 外祖父 _____

Grandmother: 祖母 _____ 外祖母 _____

6. If you were not born in Canada, for how many years have you lived in Canada? _____
在加拿大居住的时长 本人是非加拿大生者填此栏

7. Heritage culture 传承的文化：_____

List the culture that has influenced you the most (other than North American culture). If you feel that you have not been influenced by a culture other than North American culture, identify the culture that may have had an impact on previous generations of your family).
列出你受影响最深的文化 除北美洲文化，若你认为自身并未受除北美文化外的其他文化影响，请指出可能影响你家族前辈的文化。

8. Religion: place a check beside the appropriate category. 宗教信仰：在相关类别前打勾

_____ Christian 基督教 _____ Jewish 犹太教
_____ Buddhist 佛教 _____ None 无
_____ Muslim 伊斯兰教 _____ Other (specify) 其他 具体指明：
_____

9. Degree major _____ Current year of degree _____
学位专业 当前学位年级

10. What is your household's average annual income over the past 5 years? Place a check beside the appropriate category. 过去五年平均家庭年收入，在相关类别前打勾。

_____ Under $20,000 **2**万美元以下 _____ $60,000-$70,000 **6-7**万美元
_____ $20,000-$30,000 **2-3**万美元 _____ $70,000 - $80,000 **7-8**万美元
_____ $30,000- $40,000 **3-4**万美元 _____ $80,000- $90,000 **8-9**万美元
_____ $40,000-$50,000 **4-5**万美元 _____ $90,000 - $100,000 **9-10**万美元

_____ $50,000-$60,000 **5-6万美元** _____ over $100,000 **10万美元以上**

11. Have you ever been diagnosed with depression ☐ Yes ☐ No
您是否曾有过抑郁症史？ 口是 口不是

12. Has anyone ever told you they have depression ☐ Yes ☐ No
有无他人告诉过你他们是抑郁症患者？口有 口无

b) If yes, who of the following has told you they have depression? Please check all that apply.
如果有，请指出是下列哪些人？可多选。

_____ Parent **父母** ____ Other family member **其他家庭成员** _____ Coworker **同事**
_____ Sibling **兄弟姐妹** _____ Friend **朋友** _____ Other **其他**

Attitudes Towards those with Depression
关于抑郁的态度倾向

The next questions deal with how people feel toward those who have had depression.
下面问题是关于人们面对曾有抑郁症的人的内在感受。
For each of the following statements, please indicate how you think most people you know (for example, family, friends, colleagues) would feel even if you don't share their opinion.
对于每句描述，请标出您所认识的大部分人中（如家人、朋友或同事）的可能感受即使您不同意他们的看法。
Place an "X" in the correct column for each item to indicate your response.
根据您对每句描述的反应倾向，在相应的栏内用**"X"**方式标记。

		Strongly Disagree 强烈反对	Disagree 反对	Unsure 不确定	Agree 同意	Strongly Agree 完全同意
1	Most people you know would not willingly accept someone who has had depression as a close friend. 您所认识的大部分人都不大愿意同曾有抑郁症的人成为好朋友					
2	Most people you know believe that someone who has had depression is not trust-worthy. 您所认识的大部分人认为曾有抑郁症的人是不值得信赖的					
3	Most people you know think less of a person who has had depression. 您所认识的大部分人看不起曾有过抑郁症患者					
4	Most employers would not consider an application from someone who has had depression. 大多公司不会考虑雇佣曾有过抑郁史的员工					
5	Most people you know would be reluctant to date someone who has had depression. 您所认识的大部分人不愿同曾有过抑郁史的人约会					
6	Once they know a person has had depression, most people you know would take their opinions less seriously. 一旦知道某人有抑郁史，您认识的大部分人不大会认真考虑他们的意见					

7	Now, think about your own feelings. Overall, you share the opinions of most people you know regarding people who have had depression. 现在，请考虑您自己的感受。总体上，你同意您所认识的大多数人面对曾有抑郁史的人的意见。					

Mental Illness Stigma Scale (MISS)
心理疾病耻感量表(MISS)

PLEASE RATE YOUR AGREEMENT WITH THE FOLLOWING STATEMENTS:
请根据下列陈述给出自己的同意性评价。

1. There are effective medications for depression that allow people to return to normal and productive lives.
现在有治疗抑郁症的有效药物能让人回归正常、有质量的生活

1	2	3	4	5	6
Strongly Disagree 强烈反对					Strongly Agree 完全赞同

2. I don't think that it is possible to have a normal relationship with someone with depression.
我认为与患有抑郁症的人保持正常关系是不可能的

1	2	3	4	5	6
Strongly Disagree 强烈反对					Strongly Agree 完全赞同

3. I would find it difficult to trust someone with depression.
我很难相信一个抑郁症患者

1	2	3	4	5	6
Strongly Disagree 强烈反对					Strongly Agree 完全赞同

4. People with depression tend to neglect their appearance.
患有抑郁症的人不在乎自己的外表

1	2	3	4	5	6
Strongly Disagree 强烈反对					Strongly Agree 完全赞同

5. It would be difficult to have a close meaningful relationship with someone with depression.
与一个患有抑郁症的人保持一种亲密而有意义的关系是很困难的

1	2	3	4	5	6
Strongly Disagree 强烈反对					Strongly Agree 完全赞同

6. I feel anxious and uncomfortable when I'm around someone with depression.
当抑郁症患者在我附近时，我就感到焦虑不安

1	2	3	4	5	6
Strongly Disagree 强烈反对					Strongly Agree 完全赞同

7. It is easy for me to recognize the symptoms of depression.
识别抑郁症的症状对我来说很简单

1	2	3	4	5	6
Strongly Disagree 强烈反对					Strongly Agree 完全赞同

8. There are no effective treatments for depression.
对于抑郁症，现在没有有效的治疗方法

1	2	3	4	5	6

Strongly Disagree Strongly Agree
强烈反对 完全赞同

9. I probably wouldn't know that someone has depression unless I was told.
除非有人告诉我，不然我很可能不知道谁患有抑郁症

1 2 3 4 5 6
Strongly Disagree Strongly Agree
强烈反对 完全赞同

10. A close relationship with someone with depression would be like living on an emotional roller coaster.
与抑郁症患者保持亲密关系就像乘坐一列感情的过山车

1 2 3 4 5 6
Strongly Disagree Strongly Agree
强烈反对 完全赞同

11. There is little that can be done to control the symptoms of depression.
对于抑郁症我们几乎无计可施

1 2 3 4 5 6
Strongly Disagree Strongly Agree
强烈反对 完全赞同

12. I think that a personal relationship with someone with depression would be too demanding.
我认为与抑郁症患者的人际接触将会特别吃力

1 2 3 4 5 6
Strongly Disagree Strongly Agree
强烈反对 完全赞同

13. Once someone develops depression, he or she will never be able to fully recover from it.
一旦患上抑郁症，将很难完全康复

1 2 3 4 5 6
Strongly Disagree Strongly Agree
强烈反对 完全赞同

14. People with depression ignore their hygiene, such as bathing and using deodorant.
抑郁症患者不注重个人卫生，比如洗澡或使用除臭剂

1 2 3 4 5 6
Strongly Disagree Strongly Agree
强烈反对 完全赞同

15. Depression prevents people from having normal relationships with others.
抑郁症影响了与他人的正常关系

1 2 3 4 5 6
Strongly Disagree Strongly Agree
强烈反对 完全赞同

16. I tend to feel anxious and nervous when I am around someone with depression.
当附近有人患有抑郁症时，我就会感到焦虑和紧张

1 2 3 4 5 6
Strongly Disagree Strongly Agree
强烈反对 完全赞同

17. When talking with someone with depression, I worry that I might say something that will upset him or her.
当与抑郁症患者交流时，我担心我说的某些话可能会令他或她沮丧

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

18. I can tell that someone has depression by the way he or she acts.
我可以通过他或她的行为来分辨出某人是否患有抑郁症

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

19. People with depression do not groom themselves properly.
抑郁症患者不会恰当的打扮自己

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

20. People with depression will remain ill for the rest of their lives.
抑郁症患者将终生患此病

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

21. I don't think that I can really relax and be myself when I'm around someone with depression.
当周围有抑郁症患者时，我就不能真正的放松和像原来的自己

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

22. When I am around someone with depression I worry that he or she might harm me physically.
当周围有抑郁症患者时，我担心他或她可能会对我造成人身伤害

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

23. Psychiatrists and psychologists have the knowledge and skills needed to effectively treat depression.
精神病学家和心理学家拥有有效治疗抑郁症的必备知识和技能

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

24. I would feel unsure about what to say or do if I were around someone with depression.
当周围有抑郁症患者时，我可能会不确定该说什么或做什么

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

25. I feel nervous and uneasy when I'm near someone with depression.

当我接近抑郁症患者时，我会感到紧张和不安

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

26. I can tell that someone has depression by the way he or she talks.
我可以通过他或她的谈话来分辨出某人是否患有抑郁症

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

27. People with depression need to take better care of their grooming (bathe, clean teeth, use deodorant).
患有抑郁症的人需要更加注重个人的仪表（如洗澡、刷牙、使用除臭剂））

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

28. Mental health professionals, such as psychiatrists and psychologists, can provide effective treatments for depression.
心理健康专业人士，比如精神病学家和心理学家，可以为抑郁症提供有效的治疗

1	2	3	4	5	6
Strongly Disagree					Strongly Agree
强烈反对					完全赞同

REASONS FOR DEPRESSION
抑郁症原因

This questionnaire presents you with a number of reasons why you might be depressed.
本问卷提供了几条可能导致您抑郁的理由。
Each reason is given as a statement in the form of, “Most people are depressed because...” followed by a specific reason.
每条理由的描述都是基于这样的格式来进行的：“大部分人感到抑郁是因为…”，具体的原因。
For each statement, consider whether or not this particular reason causes depression.
对于每条原因，请考虑这是否是导致抑郁的特殊缘由。
In a few sentences please describe what you think causes or caused your depression.
请结合你平常对抑郁的实际感受来选择。

Rate each reason on the following scale:
每条理由的选择请遵照以下标准：

1 = definitely not a reason
1=根本不是理由
2 = probably not a reason
2=可能不是理由
3 = probably a reason
3=可能是理由
4 = definitely a reason
4=肯定是理由

MOST PEOPLE ARE DEPRESSED BECAUSE....
大部分人感到抑郁是因为…..

1. they see the world the way it really is..... 1 2 3 4

他们按照世界的本源来如实理解世界….

2. they can’t accomplish what they want to..... 1 2 3 4

他们无法完成想要的任务

3. they don’t feel loved 1 2 3 4

感受不到被爱

4. that’s just the type of person they are..... 1 2 3 4

那正是人们的真实自己

5. no one really cares about them..... 1 2 3 4

没人在乎他们

6. they can’t decide what to do with their life..... 1 2 3 4

对自身的生活没有掌控感

7. this is the way they've learned to be..... 1 2 3 4

本来他们就想成为这样的

8. they haven't resolved some issues with their family..... 1 2 3 4

家庭存在的某些问题无法调解

9. they think about things in a depressing way..... 1 2 3 4

按照抑郁的思维来思考事情

10. no one really understands them..... 1 2 3 4

没人能真正理解他们

11. their family treated them poorly as a child..... 1 2 3 4

家人待他们如小孩

12. their spouse/partner treats them poorly..... 1 2 3 4

他们的伴侣/配偶没有照顾好他

13. they have not become the person they set out to be..... 1 2 3 4

没有成为他们期望成为的人

14. other people isolate them..... 1 2 3 4

被他人孤立

15. of certain things that happened to them as a child..... 1 2 3 4

童年的某些遭遇

16. they haven't done anything important in their life..... 1 2 3 4

生命中的任何一项重要事件都未完成

17. other people criticize them..... 1 2 3 4

来自他人的批评

18. they're not living up to their personal standards..... 1 2 3 4

违背了个人准则

19. they choose to be depressed..... 1 2 3 4

他们选择了抑郁

20. they haven't worked through things that happened to them as a child. 1 2 3 4
童年情结未了

21. they have no one to share their innermost thoughts and feelings

with..... 1 2 3 4

他们内心的感受与想法，没人来同他们分享

22. they had a difficult childhood..... 1 2 3 4

有段痛苦的童年经历

23. they're not active enough..... 1 2 3 4

自身不够活跃

24. they don't take care of themselves physically..... 1 2 3 4

完全没有照顾好自己

25. they have a chemical imbalance 1 2 3 4

他们物质滥用

26. they are pessimists..... 1 2 3 4

他们悲观

27. they inherited it from their parents..... 1 2 3 4

从父母中遗传过来的

28. it's a biological illness..... 1 2 3 4

生理疾病导致

29. they don't eat well enough..... 1 2 3 4

饮食不好

30. they are not fulfilling their potential..... 1 2 3 4

没有发挥他们的潜能

31. other people don’t like them..... 1 2 3 4

其他人不喜欢他们

32. they don’t know who they are or what they stand for..... 1 2 3 4

不知道自己是谁或他们自己象征着什么

33. they don’t get enough exercise..... 1 2 3 4

身体缺乏锻炼

34. they have always been this way..... 1 2 3 4

他们经常这样子

35. their nervous system is just wired this way..... 1 2 3 4

他们的神经系统作用

36. they’ve failed to achieve a specific goal they set for themself..... 1 2 3 4

没有达成他们的预期目标

37. they can’t make friends..... 1 2 3 4

无法与他人交朋友

38. they can’t get done the things they should be able to..... 1 2 3 4

无法完成应该做的事情

39. they have set no specific goals in their life..... 1 2 3 4

没有目标

40. people treat them poorly..... 1 2 3 4

他人待他们不好

41. people don’t give them the respect they deserve..... 1 2 3 4

未得到应有的尊重

42. this is the way they respond when things get tough..... 1 2 3 4

困难面前的惯有反应

43. it’s basically caused by genetics..... 1 2 3 4

肯定是基因问题

44. they’re stuck where they are in life, nothing ever changes..... 1 2 3 4

他们已搅进目前生活中且无法做出改变

45. they pay more attention to the bad things in their life than the good things ……. 1 2 3 4

过多关注生活中的负面经历

46. they’re stuck in a bad marriage or love relationship..... 1 2 3 4

糟糕的婚恋关系带来的困扰

47. their spouse/partner doesn’t understand them..... 1 2 3 4

他们的配偶/伴侣不能理解他们

48. they’re not good at expressing their innermost feelings..... 1 2 3 4

不擅长表达内心的感受

Attitudes Toward Seeking Professional Help

Your sex: _____ Male _____ Female

您的性别:_____男性_____女性

Your race/ethnicity: 您的种族:

_____ African American 非洲裔美国人（美国黑人）

_____ Asian/Asian American 美国亚裔

_____ White/European American 欧洲裔美国人（美国白人）

_____ Latino/a 拉丁美洲人

_____ Arab/Middle Eastern 阿拉伯人/中东

_____ Other: Please specify 其他：请具体描述_____

Instructions 说明

Read each statement carefully and indicate your degree of agreement using the scale below.仔细阅读下列表述后用以下的等级量尺表明您的同意性程度。

In responding, please be completely candid.

此外，请尽量坦诚回答。

0 = Disagree 1 = Partly disagree 2 = Partly agree 3 = Agree

0=不同意 1=部分不同意 2=部分同意 3=同意

_____ 1. If I believed I was having a mental breakdown, my first inclination would be to get professional attention.

如果我确信自己精神崩溃的话，我首先将求助于专业人士。

_____ 2. The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts.

同心理学家讨论问题将是摆脱情感冲突的糟糕方法。

_____ 3. If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in psychotherapy.

此生若我遇到严重的情感危机，我确信通过心理治疗可得以康复。

_____ 4. There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help.

未寻求专业帮助而独自处理冲突和恐惧的人在态度上是可敬的。

_____ 5. I would want to get psychological help if I were worried or upset for a long period of time.

若长时间被烦恼或不安所困扰，我将会向心理学家求助。

_____ 6. I might want to have psychological counseling in the future.

将来我可能会接受心理咨询。

_____ 7. A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help.

有情感问题的人是不大能独自处理问题的，可能更需要心理学家的介入。

_____ 8. Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me.

考虑到心理治疗的时间及费用，其价值性可能得到像我这样人的质疑。

_____ 9. A person should work out his or her own problems; getting psychological counseling would be a last resort.

自己的问题应需要自己解决，借助于心理咨询可能是最后不得已的选择。

_____ 10. Personal and emotional troubles, like many things, tend to work out by themselves.

人们的一些困扰，如情感问题等很多事情，更需要独立去解决。

Scoring计分

Reverse score items 2, 4, 8, 9, and 10, then add up the ratings to get a sum.

2,4,8,9和10条目反向计分，然后加总得出总分。

Higher scores indicate more positive attitudes towards seeking professional help.

高分显示其在求助于专业人士方面更有积极倾向。

Calculate a mean for males, for females, and for each of the ethnic groups to examine group differences.

计算出男性，女性及每个种族类别平均分，以比较这些类别之间的不同。

Discuss any observed similarities and/or differences between the groups with the class.

和同学讨论你所观察到的这些类别之间的异同点。

Cross-Cultural Depression Stigma Scale

For this survey a moderately depressed person is someone who feels sad and down almost always for two weeks. He or she is also likely to:

- feel more or less hungry than usual
- gain or lose weight
- have trouble focusing and/or sleeping
- have thoughts of suicide
- feel worthless and/or tired

When an item refers to a depressed person please assume that you are aware that this person has depression.

Some of the items refer to your heritage culture. This term refers to the culture that has *influenced you the most*. Your heritage culture may be the culture you were born into, or the culture that you were raised in. Some people feel that they have not been influenced by a culture other than Chinese culture; if you feel this way you should name the culture that may have influenced previous generations of your family. If you have been influenced by more than one heritage culture, name the culture that has influenced you the most.

Many of the items below refer to where you work. If you are a student answer these items instead related to your school setting. If you are not working or a student, answer these items in relation to your last workplace or school setting.

Please read and answer each item **as it refers to you** even if you have to imagine the situation. Please read and answer each item carefully.

		1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Moderately Agree	5 Mostly Agree	6 Agree	7 Strongly Agree
1	Members of my heritage culture see depression as shameful.	1	2	3	4	5	6	7
2	I would not start a business with someone who has depression.	1	2	3	4	5	6	7
3	My coworkers believe that people with depression are weak.	1	2	3	4	5	6	7
4	My parents believe that depression is a result of having weak character.	1	2	3	4	5	6	7

5	My coworkers believe that people with depression should quit because they will fail anyways.	1	2	3	4	5	6	7
		1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Moderately Agree	5 Mostly Agree	6 Agree	7 Strongly Agree
6	Members of my heritage culture devalue families that have a member with depression.	1	2	3	4	5	6	7
7	I would limit the amount of time my child spends with someone who has depression.	1	2	3	4	5	6	7
8	My coworkers believe that people with depression make excuses to get out of work.	1	2	3	4	5	6	7
9	Members of my heritage culture believe that people with depression are a burden to society.	1	2	3	4	5	6	7
10	My coworkers believe that people with depression harm the workplace environment.	1	2	3	4	5	6	7
11	Members of my family do not understand why people with depression do not just get over it.	1	2	3	4	5	6	7
12	My coworkers would not want to work with someone who has depression.	1	2	3	4	5	6	7
13	People with depression are less desirable friends than the average person.	1	2	3	4	5	6	7
14	My parents believe that depression is not a good enough reason to see a doctor.	1	2	3	4	5	6	7
15	My parents believe that people with depression are seeking attention.	1	2	3	4	5	6	7
16	People from my heritage culture view depression as a weakness.	1	2	3	4	5	6	7
17	My coworkers believe that people with depression are too lazy to work.	1	2	3	4	5	6	7

18	I would be unlikely to have an intimate relationship with someone if they had depression.	1	2	3	4	5	6	7
19	Members of my heritage culture believe that people with depression should be separated from the community.	1	2	3	4	5	6	7
		1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Moderately Agree	5 Mostly Agree	6 Agree	7 Strongly Agree
20	Members of my heritage culture would reject my family if they knew a family member had depression.	1	2	3	4	5	6	7
21	My family would see me as a burden if I had depression.	1	2	3	4	5	6	7
22	I would not want to see a physician who has depression.	1	2	3	4	5	6	7
23	I try to avoid being friends with someone who has depression.	1	2	3	4	5	6	7
24	Members of my family believe that depression is not a real illness.	1	2	3	4	5	6	7

Empathy Questionnaire

Davis'量表

INSTRUCTIONS:说明

The following statements inquire about your thoughts and feelings in a variety of situations.
以下句子主要询问您在具体情景下的想法和感受。
For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number.
对于每个条目，请根据符合您的实际情况按照A\B\C\D\E等级进行评价，并写在题号前面。
READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.
仔细阅读后，并尽可能如实回答。谢谢。
ANSWER SCALE:
答案标准：
A - DOES NOT DESCRIBE ME VERY WELL
A-与我实际非常不符合
B
C
D
E - DESCRIBES ME VERY WELL
E-与实际非常符合

1. Before criticizing somebody, I try to imagine how I would feel if I were in their place.
   在批评别人之前，我会试着去换位思考。
2. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
   如果我认为某件事是对的，我就不会再浪费时间听他们争论。
3. I sometimes try to understand my friends better by imagining how things look from their perspective.
   站在朋友角度来考虑问题时，我经常能更好理解他们的一些看法。
4. I believe that there are two sides to every question and try to look at them both.
   我认为问题都有两面性，都需要予以考虑。
5. I sometimes find it difficult to see things from the "other guy's" point of view.
   站在他人视角来考虑问题对我来说有时有些困难。
6. I try to look at everybody's side of a disagreement before I make a decision.
   决策之前，我会考虑每个人的不同观点。
7. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
   当对某人心烦时，我经常会暂时尝试站在他们立场考虑。
8. When I see someone being taken advantage of, I feel kind of protective toward them.

看到有人被利用时，我想要去保护他们。

9. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
   看到有人遭遇不公平待遇时，一般我不会太怜悯他们。
10. I often have tender, concerned feelings for people less fortunate than me.
    我经常关心和同情那些不如我运气好的人。
11. I would describe myself as a pretty soft-hearted person.
    我觉得自己是个仁慈、宽厚之人。
12. Sometimes I don't feel sorry for other people when they are having problems.
    当其他人被问题困扰时，一般我不会感到难过。
13. Other people's misfortunes do not usually disturb me a great deal.
    他人的不幸不大会影响我。
14. I am often quite touched by things that I see happen.
    我经常被自己亲眼所见的事深深触动。

Center for Epidemiologic Studies (CES-D)

INSTRUCTIONS:
Below is a list of the ways you might have felt or behaved in the past week. Please indicate how often you have felt this way during the past week.

0 RARELY OR NONE OF THE TIME (less than 1 day)
1 SOME OR LITTLE OF THE TIME (1-2 days)
2 OCCASIONALLY OR A MODERATE AMOUNT OF TIME (3-4 days)
3 MOST OR ALL OF THE TIME (5-7 days)

During the past week:

____ 1. I was bothered by things that usually don't bother me.

____ 2. I did not feel like eating; my appetite was poor.

____ 3. I felt that I could not shake off the blues even with help from my family or friends.

____ 4. I felt that I was just as good as other people.

____ 5. I had trouble keeping my mind on what I was doing.

____ 6. I felt depressed.

____ 7. I felt that everything I did was an effort.

____ 8. I felt hopeful about the future.

____ 9. I thought my life had been a failure.

____ 10. I felt fearful.

____ 11. My sleep was restless.

____ 12. I was happy.

____ 13. I talked less than usual.

____ 14. I felt lonely.

____ 15. People were unfriendly.

____ 16. I enjoyed life.

____ 17. I had crying spells.

____ 18. I felt sad.

____ 19. I felt that people dislike me.

____ 20. I could not get "going."

Self-Construal Scale

自我建构量表(SCS)

This is a questionnaire that measures a variety of feelings and behaviors in various situations. Listed below are a number of statements. Read each one as if it referred to you. Beside each statement write the number that best matches your agreement or disagreement. Please respond to every statement. Thank you.

这是一个测量在各种情景中的各种各样感受和行为。下面是具体的描述。仔细阅读这些可能跟你有关的描述。在每个描述前用数字标明最符合您的同意或反对倾向。每个描述都要回答。谢谢。

1=STRONGLY DISAGREE	4=DON'T AGREE OR	5=AGREE SOMEWHAT
2=DISAGREE	DISAGREE	6=AGREE
3=SOMEWHAT DISAGREE		7=STRONGLY AGREE

1=强烈反对 2=反对 3=有些反对 4=既不同意也不反对 5=有些同意 6=同意 7=完全同意

____1. I enjoy being unique and different from others in many respects.

在许多方面，我喜欢与别人与众不同。

____2. I can talk openly with a person who I meet for the first time, even when this person is much older than I am.

第一次见面的人即使比我年长，我也能公开交流。

____3. Even when I strongly disagree with group members, I avoid an argument.

即使我强烈反对组员的看法，但我会避免争论。

____4. I have respect for the authority figures with whom I interact.

我敬重那些我接触的权威人物。

____5. I do my own thing, regardless of what others think.

不管其他人怎么考虑，我会做自己的事。

____6. I respect people who are modest about themselves.

我敬重那些对自己谦虚的人。

____7. I feel it is important for me to act as an independent person.

成为独立的人对于我来说是重要的。

____8. I will sacrifice my self interest for the benefit of the group I am in.

为了团队的利益，我会牺牲自己的私欲。

____9. I'd rather say "No" directly, than risk being misunderstood.

与其冒着被误会的风险，不如直接说“不”。

____10. Having a lively imagination is important to me.

有个生动想象空间对我来说很重要。

____11. I should take into consideration my parents' advice when making education/career plans.

教育或职业规划时我会考虑父母的建议

____12. I feel my fate is intertwined with the fate of those around me.

我觉得我的命运同我周围人的命运紧密联系在一起。

____13. I prefer to be direct and forthright when dealing with people I've just met.

同我刚认识的人见面我更喜欢直接、坦率点。

____14. I feel good when I cooperate with others.

同其他人合作让我感觉很好。

_____15. I am comfortable with being singled out for praise or rewards.

单独被表扬或嘉奖我会觉得舒服。

_____16. If my brother or sister fails, I feel responsible.

如果我的弟弟弟或妹妹失败了，我觉得自己有责任。

____17. I often have the feeling that my relationships with others are more important than my own accomplishments.

我时常认为同其他人的关系比我个人的成就更为重要

_____18. Speaking up during a class (or a meeting) is not a problem for me.

课堂（或会议）中当众发言对我来说不是个问题

_____19. I would offer my seat in a bus to my professor (or my boss).

我喜欢将我的座位靠近我的教授（或我的老板）

_____20. I act the same way no matter who I am with.

不管与谁在一起我的行为都不会受到影响

_____21. My happiness depends on the happiness of those around me.

我的幸福感取决于我身边人的幸福。

_____22. I value being in good health above everything.

我认为健康高于一起。

____23. I will stay in a group if they need me, even when I am not happy with the group.

如果组织有需要我会留下来，即使在这个组织中我感觉不到开心。

____24. I try to do what is best for me, regardless of how that might affect others.

我尽力做最好的自己，不管会不会影响到其他人。

_____25. Being able to take care of myself is a primary concern for me.

有能力照顾好自己是我的首要任务。

_____26. It is important to me to respect decisions made by the group.

尊重组织的决定对我来说是重要的。

____27. My personal identity, independent of others, is very important to me.

个人的真诚、独立对我来说非常重要。

_____28. It is important for me to maintain harmony within my group.

团队保持和谐对我来说是重要的。

_____29. I act the same way at home that I do at school (or work).

在家庭或学校（或工作）中我都一样表现。

____30. I usually go along with what others want to do, even when I would rather do something different.

我经常遵从他人的意愿，即使我想做点什么不一样的。

Vancouver Index of Acculturation

文化适应温哥华指数

INSTRUCTIONS:

说明

Please answer each question as carefully as possible by circling *one* of the numbers to the right of each question to indicate your degree of agreement or disagreement.

请尽可能认真地回答每个问题，并用具体数字圈出您对每个问题的同意性程度。

Many of these questions will refer to your *heritage culture*, meaning the culture that has influenced you most (other than North American culture).

大部分问题都是与您继承的传统文化有关，也就是您最受影响的文化（除北美文化外）。

It may be the culture of your birth, the culture in which you were raised, or another culture that forms part of your background.

也可能是您出生、长大的地域文化，或者您深受影响的背景文化。

If there are several such cultures, pick the one that has influenced you *most* (e.g., Irish, Chinese, Mexican, Black).

如果涉及到几种文化，请选出最影响您的类型（如..爱尔兰,中国，墨西哥，黑人）

If you do not feel that you have been influenced by any other culture, please to identify a culture that may have had an impact on previous generations of your family.

如您感受不到被任何文化所影响，请明确之前曾影响您前代家庭的一种文化。

Please write your *heritage culture* in the space provided: _____

请在空白处填写上您传承的文化：_____

Use the following key to help guide your answers:

使用下列关键词来帮您回答问题：

Strongly Disagree 强烈反对		Disagree 反对		Neutral/ Depends 中性/中立		Agree 同意		Strongly Agree 完全同意
1	2	3	4	5	6	7	8	9

1. I often participate in my *heritage culture* traditions. 我经常参与到我所传承的传统文化中。	1	2	3	4	5	6	7	8	9
2. I often participate in mainstream North American cultural traditions. 我经常参与主流的北美文化传统中。	1	2	3	4	5	6	7	8	9
3. I would be willing to marry a person from my *heritage culture*. 我愿意同我传承的文化中的人结婚。	1	2	3	4	5	6	7	8	9
4. I would be willing to marry a North American person. 我愿意同北美人结婚。	1	2	3	4	5	6	7	8	9
5. I enjoy social activities with people from the same *heritage culture* as myself. 我喜欢同自己有共同文化信仰的人一起参加社会活动。	1	2	3	4	5	6	7	8	9
6. I enjoy social activities with typical North American people. 我喜欢同正统的北美人一起参加社会活动。	1	2	3	4	5	6	7	8	9
7. I am comfortable working with people of the same *heritage culture* as myself. 同我自己有共同文化信仰的人一起工作对我来说是舒服的。	1	2	3	4	5	6	7	8	9

8. I am comfortable working with typical North American people. 同正统的北美人一起工作对我来说是舒服的。	1	2	3	4	5	6	7	8	9
9. I enjoy entertainment (e.g., movies, music) from my *heritage culture*. 我喜欢我传承的文化中的娱乐活动（如，电影，音乐等）。	1	2	3	4	5	6	7	8	9
10. I enjoy North American entertainment (e.g., movies, music) 我喜欢北美人的娱乐活动（如，电影，音乐等）。	1	2	3	4	5	6	7	8	9
11. I often behave in ways that are typical of my *heritage culture*. 我经常表现出我传承的文化的典型行为。	1	2	3	4	5	6	7	8	9
12. I often behave in ways that are 'typically North American.' 我经常表现出正统北美人的典型行为。	1	2	3	4	5	6	7	8	9
13. It is important for me to maintain or develop the practices of my *heritage culture*. 保持或发展我传承的文化的活动对我来说是重要的。	1	2	3	4	5	6	7	8	9
14. It is important for me to maintain or develop North American cultural practices. 保持或发展北美文化的活动对我来说是重要的。	1	2	3	4	5	6	7	8	9
15. I believe in the values of my *heritage culture*. 我重视我传承的文化的价值。	1	2	3	4	5	6	7	8	9
16. I believe in mainstream North American values. 我重视主流北美文化的价值。	1	2	3	4	5	6	7	8	9
17. I enjoy the jokes and humour of my *heritage culture*. 我喜欢我传承的文化的开心及幽默元素。	1	2	3	4	5	6	7	8	9
18. I enjoy typical North American jokes and humour. 我喜欢正统北美人的开心及幽默元素。	1	2	3	4	5	6	7	8	9
19. I am interested in having friends from my *heritage culture*. 我喜欢同我传承的文化中的人交朋友。	1	2	3	4	5	6	7	8	9
20. I am interested in having North American friends. 我喜欢同北美人交朋友。	1	2	3	4	5	6	7	8	9

Appendix B: Recruitment and Consent Documents

Study Consent Form

Name of Researcher, Faculty, Department, Telephone & Email:

Jennifer Prentice, M.Sc., Faculty of Graduate Studies, Department of Psychology
Office Phone: 403-220-3697
Email: jlprenti@ucalgary.ca

Supervisor:

Keith S. Dobson, PhD., Department of Psychology
Office Phone: 403-220-5096
Email: ksdobson@ucalgary.ca

Title of Project: Beliefs and Attitudes about Depression

This consent form is only part of the process of informed consent. If you want more details about something mentioned here, or information not included here, you should feel free to email the researchers. Please take the time to read this carefully and to understand any accompanying information.

The University of Calgary Conjoint Faculties Research Ethics Board has approved this research study.

Purpose of the Study

The purpose of this study is to gain more knowledge of the attitudes and beliefs related to depression, and the role cognition, culture, demographics, and other variables play in the relationship of those beliefs. The information obtained in this study will inform a graduate student's Ph.D. dissertation research.

What Will I Be Asked To Do?

You will be asked to participate in two parts of one study. Part 1 of the study is conducted online. You will be asked to complete several questionnaires about how you feel or would behave in different situations, your attitudes and beliefs, and your demographics. Examples of questions you may be asked include: I would try to avoid someone with depression and; what is your current occupation. It will take approximately 45 minutes to complete the required questionnaires.

Part 2 is completed in the Depression Research Lab at a separate time. You must complete Part 1 of the study before you complete Part 2. You will also be asked to complete a series of tasks that examine perspective-taking and cognitive abilities. For example, you will be asked to provide the definition of words, and watch short video clips and answer questions about what you watched. It will take approximately 1.5 hours to complete the required tasks.

Your participation in this study is completely voluntary, and you may refuse to participate or withdraw without penalty up until the time that you submit your questionnaire data. Your responses up until the point of withdrawal will be erased. Once you submit your questionnaire, your data cannot be removed as it will be impossible to connect your name to your data. Specifically, your data cannot be withdrawn after the survey is submitted due to anonymity. If you withdraw from the study at any point you will still be awarded the previously agreed upon credit. You also may refuse to participate in parts of the study or decline to answer particular questions if you so choose.

Your cognitive task data can be withdrawn from the study up until the time you exit the lab. At this time, your data cannot be removed as it will be impossible to connect your name to your data. Specifically, your data cannot be withdrawn after your exit the lab due to anonymity. Again, if you withdraw from the study at any point you will still be awarded the previously agreed upon credit. You also may refuse to participate in parts of the study or decline to answer particular questions if you so choose.

What Type of Personal Information Will Be Collected?

Should you agree to participate, you will be asked to provide some background demographic information such as: gender, age, heritage culture, ethnic origin, religion, place of birth, parents'/grandparents place of birth, and education. This information, along with your responses to the questionnaires and tasks, will be kept separate from your name and will be identified only by code number.

Are there Risks or Benefits if I Participate?

In return for your participation in this study you will be granted 1 bonus credit to apply towards any Psychology course at the University of Calgary for your participation in Part 1 of the study, and 1.5 bonus credits to apply towards any Psychology course at the University of Calgary for your participation in Part 2 of the study. No more than 2 bonus credits may be assigned to any Psychology course.

A potential risk to you if you choose to participate is that some of the questionnaires deal with sensitive topics, such as stigma related to depression, and could potentially cause you distress.

The online survey is being administered by Qualtrics © an American software company. As such, your responses are subject to U.S. laws, including the USA Patriot Act. The risks associated with participation are minimal, however, and similar to those associated with many e-mail programs, such as Hotmail© and social utilities spaces, such as Facebook©.

During your participation, if you reveal information about your intention to harm yourself or someone else, or if you reveal information about child or elderly abuse, the researchers are obligated by law and their professional code of ethics to reveal this information to a law enforcement or other agency.

What Happens to the Information I Provide?

All of the information you provide will be kept private and confidential. Any information you provide will be encrypted and stored on a password protected computer. Only Jennifer Prentice and Keith Dobson, and others working under their direct supervision will have access to the information. Only group information will be provided in the case of publication or presentation of the study. The anonymized data will be retained indefinitely and may be used for future research purposes.

If you chose to withdraw from the study, all of your data up to the point of withdraw will be destroyed.

Participation

By agreeing to participate in the study you are agreeing to participate in both Part 1 and Part 2 of the study. By agreeing to proceed to these questionnaires, Part 1 of the study, you are agreeing that you fully understand that you are participating in this study as part of your educational experience in the Department of Psychology.

Your agreement, as indicated by clicking yes below, indicates that you:

1) understand to your satisfaction the information provided to you about your participation in this research project, and

2) agree to participate as a research subject.

In no way does your agreement to participate waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time.

☐ Yes, I agree to voluntarily participate in this study.

☐ No, I do not wish to participate in this study.

Questions/Concerns

If you have any further questions or want clarification regarding this research and/or your participation, please contact:

Jennifer Prentice
Department of Psychology, Faculty of Arts
jlprenti@ucalgary.ca
OR
Dr. Keith Dobson
Department of Psychology, Faculty of Arts
403-220-5096
ksdobson@ucalgary.ca

If you have any concerns about the way you've been treated as a participant, please contact the Research Ethics Analyst, Research Services Office, University of Calgary at 403-220-6289 or 403-220-4283; email cfreb@ucalgary.ca.

Debriefing Form

UNIVERSITY OF CALGARY

Attitudes and Beliefs toward Depression

Jennifer Prentice M.Sc
University of Calgary
Department of Psychology

Stigma can be broadly defined as a negative characteristic or feature associated with a particular person, affliction or illness, or circumstance (Link & Phelan, 2001). Stigmatizing attitudes continue to exist despite programs designed to reduce stigma (e.g., Mehta, Kassam, Leese, Butler, & Thornicroft, 2009). The maintenance of stigma is alarming, as there are several consequences of stigma. One key effect of stigma is that it can discourage help seeking behaviours, such as seeking treatment for a mental illness, and ultimately impede recovery from mental health problems, like depression.

A growing body of literature demonstrates that increased contact with a mentally disordered person is associated with fewer stigmatizing attitudes, particularly less social distance (Boyd, Katz, Link, & Phelan, 2010). The effectiveness of the anti-stigma interventions is further moderated by direct contact with a mentally disordered individual whether the contact is person-to-person or via video. It is likely that direct contact with a mentally disordered individual provides the opportunity for non-mentally disordered individuals, or the perceiver, to gain information that disconfirms stereotypes and biases by providing the perceiver the opportunity to gain the perspective of the mentally disordered person leading to an empathic response. Empathetic perceivers will conceivably hold more favourable attitudes toward individuals with a mental disorder. In this way, empathy and perspective-taking are likely mechanisms that exert an influence on the stigma process.

It is also likely that the relationship between empathy, perspective-taking and stigma differ across cultures, given that stigma differs across cultures. Cultural norms dictate which types of behaviours are sufficiently deviant from normal, are indicative of mental illness, and therefore are subject to mental illness stigma (Abdullah & Brown, 2011). Thus, there is variability within specific cultures in terms of what constitutes grounds for stigmatizing those with mental illness.

Thus, the purpose of the research project you participated in was to investigate the relationship between stigma related to depression, empathy, perspective-taking, and other variables (e.g., age, cognitive abilities, gender) across two cultural groups: European Canadians and Chinese-Canadians. To examine the relationship between these variables each participant completed several online questionnaires that measured their beliefs about stigma related to depression, demographic information, culture, and empathy and perspective-taking abilities. Each participant further participated in tasks that measured their perspective-taking abilities to gain a better ecological (i.e., real-life) estimate of their perspective-taking abilities, as well as an

estimate of their cognitive functioning. The data will be analyzed to determine the relationship among these variables as they relate to stigma.

To learn more about this study, or for more information, you can contact Jennifer Prentice at jlprenti@ucalgary.ca.

Thank you for your participation!

Research Participation System Recruitment Notice

Beliefs and Attitudes: The Role of Culture

In Part 1 of the study you will be asked to fill out a questionnaire about yourself. You also be asked to fill out surveys about your culture and beliefs and attitudes about depression. You will receive 1 credit for your participation. Part 1 of the study will take approximately 45 minutes.

In Part 2 of the study, you will be asked to complete tasks. You will further be asked to complete visual puzzles and watch short videos and then answer questions about what you saw. You will have the option to receive either 1.5 credits or enter your name in a draw for 1 of 3 iPod Touches for your participation. The study will take approximately 1.5 hours.

Must be fluent in English. Must be Chinese-Canadian (self-identify as Canadian or Chinese and ancestry for both parents is Chinese) or Euro-Canadian (self-identify as Canadian or European and ancestry for both parents is European).

Recruitment Poster

Study Participants Needed

Obtain the chance to win 1 of 2 Apple iPOD Touch's!

Eligible Participants include:

- University of Calgary Students
- Not currently enrolled in a Psychology course
- Must be **Asian-Canadian** or **European-Canadian**
- Must be fluent in English

The Study:

- Requires about 30 minutes
- You will be asked to fill out a questionnaire about yourself, your culture, and stigma

The Prize is 1 of 2 Apple iPOD Touch's (16 GB). A random draw will be made among all participants.

Please contact Jennifer at jlprenti@ucalgary.ca if you want to participate!

This study has been approved by the Conjoint Faculties Research Ethics Board. Ethics ID: 0253

Psych Study: chance to win an ipod! Email: jlprenti@ucalgary.ca

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