A Cross-Cultural Examination of Knowledge and Beliefs about Mental Disorders

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Dissertation submitted for the degree of Doctor of Philosophy

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April 2016

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Declaration

I hereby declare that this dissertation has not been and will not be submitted in whole or in part to another University for the award of any other degree. Some of the ideas, literature review (General Introduction) and results (Chapter 3) presented in this dissertation have been published:

Altweck, L., Marshall, T. C., Ferenczi, N., & Lefringhausen, K. (2015). Mental health literacy: a cross-cultural approach to knowledge and beliefs about depression, schizophrenia and generalized anxiety disorder. *Frontiers in psychology*, 6.

Other Publications

Altweck, L., & Marshall, T. C. (2015). When You have Lived in a Different Culture, Does Returning 'Home' not Feel like Home? Predictors of Psychological Readjustment to the Heritage Culture. *PLOS ONE*. doi: 10.1371/journal.pone.0124393

Reed, P., **Altweck, L.,** Broomfield, L., Simpson, A., & McHugh, L. (2012). Effect of Observing-Response Procedures on Overselectivity in Individuals With Autism Spectrum Disorders. *Focus on Autism and Other Developmental Disabilities*, doi: 1088357612457986.

Presentations

Altweck, L., & Marshall, TC. (2014). Knowledge and beliefs about mental illness: a cross-cultural comparison. *22nd International Congress: International Association for Cross-Cultural Psychology.*

Acknowledgements

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Abstract

How and why do the public's knowledge and beliefs about mental disorders differ across cultures? Research has widely established that knowledge and beliefs about the symptoms, causes, treatments and stigma towards mental illness vary across cultures. However, few studies have examined the factors that may be associated with this variation. The overall purpose of the present dissertation was twofold: first, to cross-culturally validate measures of beliefs about mental disorders, and, second, to examine the influence of cultural variables with the aim of explaining cross-cultural variation. The General Introduction outlines the current research strands of knowledge and beliefs of mental disorders (namely, mental health literacy [MHL] and mental illness stigma), describes the importance of examining culture and introduces its framework, and describes how knowledge and beliefs differ cross-culturally. Further, cultural variables (collectivism and its facets) and their possible role in determining cross-cultural variation in MHL and mental illness stigma are introduced. The present research also examined differences in beliefs between mental disorders (schizophrenia, depression, generalised anxiety disorder [GAD]). Studies 1 and 2 revealed that across cultures MHL was better regarding schizophrenia and depression than GAD. Study 1 further found that recognition of symptoms of mental illness was greater in the Caucasian British sample compared to the South Asian and African-Caribbean samples, which corroborated previous research. Study 2 tested the cross-cultural equivalence of measures of causal and help-seeking beliefs, and cross-culturally validated the MHL model in European Americans and Indians. Confirmatory factor analysis (CFA) eliminated culturally non-equivalent items and therefore established a sound measure of causal and help-seeking beliefs for mental disorders. Furthermore, structural equation modelling (SEM) found good support for the MHL model cross-culturally, with recognition being the best predictor of endorsing causal and help-seeking beliefs across cultures. However, the significant cross-cultural difference in the model was that Indians, but not European Americans, viewed lay help-seeking beliefs as vital in relation to treatment of mental illness.

The second part of Study 2 examined the relationship between MHL and mental illness stigma. Associations between the two constructs were non-significant across cultures, however implications are limited as only one aspect of mental illness stigma was measured. Study 3 cross-culturally validated a commonly-used measure of mental illness stigma and tested equivalence of the mental illness stigma model in European Americans and Indians. As in Study 2, CFA indicated which culturally-equivalent items to retain, and SEM of the mental illness stigma model established its applicability in both cultural groups. Finally, the second part of Study 3 examined social and cultural variables in relation to mental illness stigma. The results showed that classic religiosity, conformity to norms, familial support, honour and obligations were significant predictors of stigma. It was particularly noteworthy that conformity to norms significantly predicted lesser discrimination in the Indian sample, while endorsement of familial obligations indirectly predicted greater discrimination through prejudicial beliefs in the European American sample. The General Discussion evaluates the main findings, discusses implications, limitations, and directions for future research.

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1. General Introduction

We didn't know mental illness is like this. My daughter would say there is this faith healer, so we would call him. [My son] would get better for two or three days, then it would happen again. We ended up seeing seventeen faith healers… and he still didn't get better. Now I believe that there is no ghost inside him. It is a mental illness.

Indian father talking about his son who is diagnosed with a mental disorder
(The MINDS Foundation, 2012, 0:22)

The understanding and acceptance this father shows about his son's symptoms demonstrates that accurate knowledge about mental disorders can provide resolution and comfort to patients and their carers. Unfortunately, the majority of the public is unable to recognize and distinguish between different mental disorders (Angermeyer & Dietrich, 2006; Jorm, 2000; Jorm et al., 2006). What is more, large cross-cultural discrepancies exist in this regard, with Western individuals showing greater medical knowledge of mental disorders and lesser stigma towards mental illness compared to non-Western populations (Angermeyer & Dietrich, 2006; Ayalon & Areán, 2004; Jenkins, 1988; Jorm, 2000; Jorm, Nakane, Christensen, Yoshioka, Griffiths, & Wata, 2005). The World Health Report (WHO, 2001a) revealed that 1 in 4 families worldwide are likely to have at least one member with a behavioural or mental disorder. Thus, in order for patients and their families worldwide to receive the best possible care, it is essential that they demonstrate good MHL and hold positive beliefs towards mental illness.

Indeed, sound knowledge and positive attitudes about mental illness and mental health care are significantly associated with more positive beliefs about seeking professional help for symptoms of mental illness (Corrigan, Druss, & Perlick, 2013; Golberstein, Eisenberg, & Gollust, 2008; Schomerus & Matschinger, 2009; Schomerus, Matschinger, & Angermeyer, 2009). For example, Wright, Jorm, Harris, and McGorry (2007) found that correctly recognising symptoms of mental illness and labelling them as such was, on the one hand, significantly associated with choosing the most appropriate type of help and treatment (seeing a psychiatrist, psychologist or social worker, going for counselling or taking antipsychotics)

and, on the other hand, also significantly lowered the likelihood of endorsing inappropriate help (e.g., not seeking any help, abusing alcohol, cigarettes or marijuana). Similarly, more positive attitudes towards mental illness and health care are significantly associated with greater endorsement of seeking professional help (Barney, Griffiths, Jorm, & Christensen, 2006; Corrigan, Druss, & Perlick, 2014; Mojtabai, 2010). Mental health care use is significantly lower among individuals who believe that their family would be upset if they knew about their mental illness (Leaf, Bruce, & Tischler, 1986). People who develop a mental illness often prolong seeking help from a professional because they may be embarrassed about other people knowing about their illness (Gäbel, Zaske, & Baumann, 2004; Sewilan et al. 2015). Indeed, individuals with a mental disorder report that the fear of being stigmatised acts as a barrier to mental health care use (Cooper-Patrick et al., 1997; Gäbel et al., 2004; Rüsch, Angermeyer, & Corrigan, 2005) and Corrigan (2004) purports that the avoidance of being labelled is perhaps the most significant barrier to seeking professional help.

Thus, despite the availability of evidence-based interventions, a significant number of individuals with a mental illness do not seek appropriate help (Alonso, et al., 2007; Corrigan, Druss, & Perlick, 2014). A large-scale European survey found that of individuals in need for treatment 48% did not get any form of medical attention and 75% did not seek mental health care (Alonso et al., 2007). Furthermore, individuals whose onset was at least 15 years prior were twice as likely to have an unmet need for mental health care (Alonso, et al., 2007). These remarkable figures accentuate the need to explore factors affecting knowledge and beliefs about mental disorders, their causes, help-seeking options and stigmatising beliefs. The purpose of the present dissertation was to examine these factors. The main novelty of the present research is that it quantitatively examines the relationship of cultural variables with recognition of mental disorders, causal beliefs, help-seeking beliefs, and stigmatising beliefs about mental disorders.

1.1. Mental Health Literacy

Mental health literacy (MHL) refers to the "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm, Korten, Jacomb, Christensen, Rodgers, & Pollitt, 1997a, p. 184). The concept of MHL is multifaceted and includes: (a) the ability to recognise symptoms of mental illness, (b) knowledge of causes of mental disorders, (c) beliefs that promote recognition and seeking appropriate help, and knowledge of (d) lay sources of help and (e) professional sources of help (Jorm et al., 1997a). Please refer to Figure 1.1 for a visual reference of the associations between the variables within the MHL model (this model is proposed and explored in detail in Chapter 3). Below I describe the different aspects of MHL and associations between them.

Figure 1.1. Proposed Mental Health Literacy model.
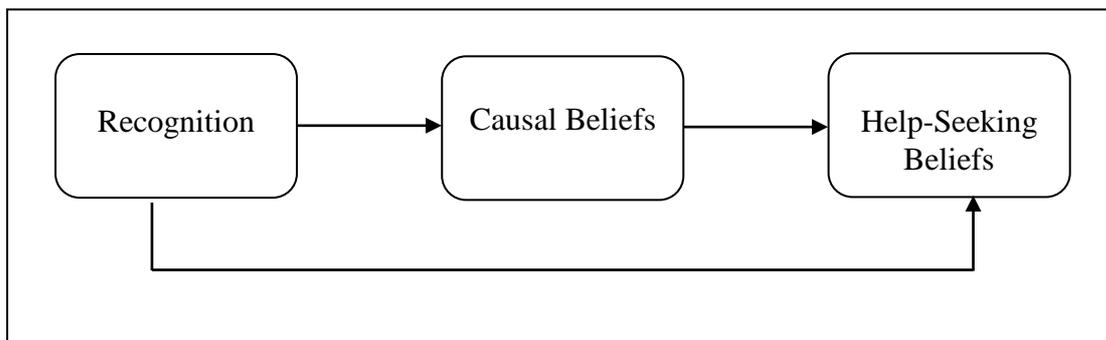
1.1.1. Recognition

The first aspect of MHL is the ability to correctly recognise symptoms of mental illness. Many members of the public display poor recognition of mental disorders and do not understand meanings of psychiatric labels (Angermeyer & Dietrich, 2006; Dahlberg, Waern, & Runeson, 2008; Jorm, 2000; Jorm et al., 1997a; Lauber, Nordt, Falcato, & Rössler, 2003).

For example, schizophrenia is often incorrectly associated with a split conscience or personality (Angermeyer & Matschinger, 1999), while symptoms of depression are sometimes perceived as a physical disorder such as a virus, nutritional deficiency or cancer (Jorm et al., 1997a). Goldney, Fisher, and Wilson (2001) investigated MHL in a public sample and

compared participants with and without depression. They found that both the depressed and the non-depressed samples did not significantly differ in their recognition of depression from a vignette, showing poor recognition overall (49-56%). This underlines that having symptoms of a mental disorder does not automatically imply knowing the implications and the type of help available to deal with these.

Individuals who are confronted with symptoms of mental illness – by developing a disorder themselves or by coming into contact with someone who has – will endeavour to manage these and an individual's approach will depend on their mental health literacy. Thus, better knowledge and more positive beliefs about mental illness will positively alter patterns of help-seeking as well as responses to treatment (Jorm, 2000, 2011; ten Have et al., 2010).

Good knowledge of mental illness is also important due to the strong association between recognition of mental illness with the other aspects of MHL. Labelling symptoms as a mental disorder may activate a schema that outlines the type of action to take (Jorm, 2011). Schema theory purports that when information is memorised it is automatically organised in a meaningful way (Piaget, 1932). Schema are blocks or units of knowledge that help shape how people understand and respond to the environment (McLeod, 2015). These units are a "richly-connected network of information relevant to a given concept" (Fiske & Linville, 1980, p. 552). That is, knowledge is stored according to similarity – e.g., an animal can be similar to other animals in several ways: size, reproductive characteristics, geographical location, presence of vertebrae, etc. – which allows for great richness and flexibility in cognitive processing (Mandler, 1984).

Returning to the MHL model, schema theory implies that knowledge and information about mental illness – including causality, symptoms, course, treatments, recovery outlook, etc. – would be stored in a manner that is interconnected. Indeed, research has shown that better knowledge about mental disorders in general is a good indicator of knowledge about treatment options and beliefs about causes of mental disorders (Jorm et al., 1997b; Lauber, Falcato et al.,

2003; Lauber, Nordt et al., 2003; Wright et al., 2007). Labelling symptoms as a mental illness is associated with identifying the need to seek professional help and, indeed, greater endorsement of seeking help from a professional (Lauber, Nordt et al., 2003; Wright et al., 2007). Further, better recognition of mental illness is related to lesser endorsement of lay coping strategies – such as drug use (Wright et al., 2007). Labelling symptoms as a mental disorder may activate a schema that outlines the type of action to take (Jorm, 2011); that is, better knowledge about mental disorders would encourage a preference for professional compared to lay help. Furthermore, Hillert and colleagues (1999) found that participants who somatised symptoms of mental illness were more likely to recommend seeking help from a doctor and taking medication, while participants who described symptoms psychologically or psychiatrically advised to go to therapy. Thus, recognising symptoms as a mental disorder and the ability to describe these in clinical terms to a professional enables better detection of said mental disorder and thus access to appropriate treatment.

1.1.2. Causal beliefs

A further facet of MHL concerns beliefs about the causal beliefs of mental disorders. People believe that understanding the occurrence of an event helps them control this behaviour in the future or will at the least help predict its re-occurrence (Heider, 1958; Fiske & Taylor, 1991). Heider (1958) purported that lay people are 'naïve scientists' in that they attribute (unobserved) causes to observed behaviours, which assigns meaning to the behaviour. He further asserted that people aim to determine responsibility for a behaviour; that is, whether the behaviour was due to internal (due to the person's character, e.g., ability, personality, mood, attitude, motivation) or external (as a result of the environment or social situation, e.g., the task, other people, luck) factors. Thus, social information is perceived, processed and stored with an explanation, and so causal attributions can form the basis of other thought processes, emotions and behaviours (Jones, Kanouse, Kelley, Nisbett, Valins, & Weiner, 1972).

When explaining causes of mental disorders psychopathological models draw on social

and biological factors, yet amongst patients with a mental disorder there is great variability in causes attributed to their symptoms (Lloyd et al., 1998; McCabe & Priebe, 2004). These may include interpersonal factors (e.g., an ended relationship), supernatural factors (e.g., evil forces), work-related stress, drug or alcohol abuse, bad childhood events (e.g., physical or sexual abuse) or not knowing the cause (McCabe & Priebe, 2004). In the Western public, psychosocial factors – including stress, life events, day-to-day problems, traumatic events, recent death and childhood events – are often perceived as the most important cause of mental illness while biological factors – e.g., hereditary or brain disease – are seen as less important (Angermeyer & Dietrich, 2006; Angermeyer & Matschinger, 1996, 1999; Jorm et al., 1997b; Lauber, Falcato, et al., 2003). It is noteworthy that the public's attributions vary according to different mental disorders (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). For example, biological causes are generally rated as more important in relation to schizophrenia than depression, while social factors are attributed significantly more to the latter (Angermeyer & Matschinger, 2003b).

Further, the literature shows a relationship between correctly recognising a mental disorder as such and types of causal factors attributed to it (Angermeyer & Matschinger, 1996; Jorm et al., 1997b; Lauber, Nordt et al., 2003). For instance, Angermeyer and Matschinger (1996) found that in relation to schizophrenia, participants were significantly more likely to endorse social causal beliefs (e.g., psychosocial stress or family environment) if they had correctly recognised the mental disorder. Similarly, Jorm and associates (1997b) found that respondents who correctly recognised symptoms of depression were less likely to endorse 'virus' or 'weakness of character' as a likely cause of the disorder.

Along the same lines, a strong association between causal beliefs of mental disorders and endorsed treatments has been shown (Angermeyer, Matschinger, & Riedel-Heller, 1999). For instance, Riedel-Heller, Matschinger, and Angermeyer (2005) found that participants who attributed the cause of the mental illness to brain disease were more likely to endorse

psychotherapy and psychotropic drugs and less likely to endorse relaxation, meditation or yoga. On the other hand, if life events were perceived as the cause, then psychotherapy was endorsed more. And, further, if work stress was seen as the cause for the mental illness, then relaxation and natural remedies were more often endorsed. The clinical literature purports that a mental disorder is caused by a combination of psychological, social and biological factors. This is mirrored in patients and their families who simultaneously hold multiple and often contradictory causal beliefs (Charles, Manoranjitham, & Jacob, 2007; Joel et al., 2003; Ohaeri & Fido, 2001). Joel and colleagues (2003) reported that 88% of patients attributed their mental illness to multiple non-biological causes (e.g., non-disease concept, black magic, evil spirits). Patients holding multiple causal theories reported utilising multiple systems of medicines, that is, clinical as well as traditional or religious healers (Charles et al., 2007). This underlines the close link between causal and treatment beliefs and ultimately types of help sought for symptoms of mental illness.

1.1.3. Help-seeking beliefs

Another aspect of MHL examines beliefs about help-seeking for symptoms of mental disorders. Overall, the public generally holds very negative views towards the use of psychiatric medication, electroconvulsive therapy and admission to a psychiatric ward, whereas speaking with family, friends, an herbalist or taking vitamins and minerals is generally believed to be more helpful (Jorm et al., 1997c). Vogel and Wester (2003) found that patients' anticipated comfort of disclosing information about their mental illness and their expected helpfulness of doing so was significantly positively related to positive help-seeking beliefs. This means that patients who felt more comfortable to talk about their symptoms and who expected that doing so would be helpful were more likely to hold positive beliefs about seeking help from a professional. Thus individuals who do not perceive seeking professional help for symptoms of mental illness as helpful would not endorse seeking this type of help.

The type of help perceived as helpful further differs depending on the mental disorder

(Riedel-Heller et al., 2005). For instance, Angermeyer and colleagues (1999) showed that in regards to schizophrenia, seeing a psychiatrist was the highest recommended solution, whereas for depression, a close family member or friend was recommended most often. This follows the notion that knowledge and awareness of schizophrenia appears to be greater than other mental disorders (Kohn, Sharma, Camilleri, & Levav, 2000). For instance, Kohn and colleagues (2000) found that virtually the entire public sample recognised that 'something was wrong' with persons described in both schizophrenia and depression vignettes (97% and 91% respectively). However, when participants were faced with a vignette of symptoms of schizophrenia, 71% reported that it displayed a mental disorder, while only 26% reported this in regards to depression; further, 70% agreed that the schizophrenia vignette displayed a serious problem, while only 50% agreed to this in regards to depression. Indeed, Kohn and colleagues (2000) found that 23% of the public sample was uncertain of the problem displayed in the depression vignette. These findings indicate that the type of treatment recommended for symptoms of a mental disorder depends on its recognition as a mental disorder and the perceived severity of these symptoms.

1.1.4. Professional help-seeking beliefs

The majority of the literature investigating beliefs about help-seeking for mental disorders has focused on seeking professional as opposed to lay help (Kuo, Kwantes, Towson, & Nanson, 2007; Tata & Leong, 1994; ten Have et al., 2010). Professional help may include seeing a general practitioner, psychologist, counsellor or psychiatrist, or going to a mental health clinic.

Perceived relevance and helpfulness of the type of help or treatment suggested for mental illness varies greatly between the public and professionals (Jorm et al., 1997c; Jorm et al., 2006). Medical practitioners hold significantly more positive beliefs about more specialised professional help (e.g., seeing psychiatrists, clinical psychologists or taking antidepressants) than the general public, while the latter prefers seeking help from more general health practitioners (e.g., GP; Jorm et al., 1997c; Goldney et al., 2001). The greatest divide lies in

relation to the helpfulness of medication for mental disorders, with the public showing overwhelmingly negative attitudes (Jorm et al., 2006).

1.1.5. Lay help-seeking beliefs

While the literature shows that patients generally seek help from multiple sources of professional service providers (Charles et al., 2007; Zachrisson, Rödje, & Mykletun, 2006), only a minority of individuals with symptoms of mental illness seek professional help (Jorm, 2000). When faced with symptoms of mental illness, support is sought from a range of informal sources before seeking professional help (Cooper-Patrick et al., 1997; Van Hook, 1999). Indeed, individuals with symptoms of mental illness look for support from a wide range of informal sources (Chadda, Agarwal, Singh, & Raheja, 2001; Cooper-Patrick et al., 1997; Penny, Newton, & Larkin, 2009; Shankar, Saravanan, & Jacob, 2006; Van Hook, 1999). Individuals with a mental illness draw informal support primarily from in-group members – i.e., family members, friends or religious leaders (Daly, Jennings, Beckett, & Leashore, 1995; Van Hook, 1999). Patients who have sought help for their mental illness report that if a friend or family member endorsed professional help they were more likely to seek support from a professional (Penny et al., 2009), highlighting the importance of good MHL in not only patients but also family members, friends and the public in general.

Depending on the focus of the literature, the definition of lay help varies from maladaptive strategies to reduce symptoms (e.g., drug use, Wright et al., 2007) to speaking with friends and family (Riedel-Heller et al., 2005; Burns & Rapee, 2006). In line with the majority of MHL research (e.g. Jorm et al., 1997a), the present research conceptualised lay help for mental illness as seeking help or advice from a non-medical professional – e.g., family, friends, spiritual leader – as well as engaging in positive activities with the aim of reducing symptoms of mental illness – e.g., doing exercise or going on holiday.

1.1.6. Summary

The above literature review aimed to give insight into the different aspects of MHL and

to further demonstrate the associations between these aspects that the literature has established to date. To this effect, greater recognition of mental disorders was found to relate to schemas through which mental disorders were interpreted; namely, causal beliefs and help-seeking beliefs (Jorm et al., 1997b; Lauber, Falcato, et al., 2003; Wright et al., 2007). Beliefs about causes of mental illness were found to lay the framework for type of help recommended and perceived as helpful to manage the symptoms (Angermeyer, Matschinger, & Riedel-Heller, 1999). Finally, this review demonstrated the link between lay and professional help-seeking beliefs (Penny et al., 2009) and outlined the importance of considering lay sources of help as lay populations regularly draw on these first before turning to professional sources (Cooper-Patrick et al., 1997; Van Hook, 1999).

A related, yet distinct, concept of MHL is mental illness stigma – namely, prejudicial beliefs and discriminatory behaviour towards individuals with a mental illness. More positive attitudes towards mental illness and health care are significantly associated with greater endorsement of seeking professional help (Barney et al., 2006; Corrigan et al., 2014; Mojtabai, 2010). It is likely that this association would generalise, namely that greater mental illness stigma would be associated with worse MHL. The next section introduces the concept of mental illness stigma.

1.2. Mental Illness Stigma

You are going to carry that stigma until you die, once yuh mad yuh mad.
Jamaican patient with a mental illness (Arthur et al., 2010, p. 265)

People with mental disorders suffer on two fronts – first, debilitating symptoms that may impede their mental, physical and social capacities, and, second, the generally negative beliefs held by the public that often lead to rejection and discrimination (Angermeyer & Dietrich, 2006; Chaudhuri, 2006; Corrigan, 1998, 2000; Corrigan, Green, Lundin, Kubiak, & Penn, 2001; Corrigan & Watson, 2002; Link & Phelan, 2001; Rüsch et al., 2005). Indeed, stigma about mental illness is widespread (Chaudhuri, 2006; Corrigan, 2000; Corrigan & Watson, 2002).

Mental illness stigma is not limited to the general public; in fact, high rates of mental illness stigma are also found in friends and family members of individuals with a mental illness as well as trained professionals such as mental health nurses, doctors, psychologists and psychiatrists (Kirkby & James, 1978; Ku, 2007; Magliano, Fiorillo, de Rosa, Malangone, & Maj, 2004; Ngirababyeyi, 2012; Sévigny, et al. 1999; Tanaka, et al. 2004; Vibha, Saddichha, & Kumar, 2008). For instance, compared to mental health professionals, the public hold significantly more positive beliefs about recovery (Caldwell & Jorm, 2001; Magliano et al., 2004), positive outcome beliefs (e.g., having a good marriage or being a caring parent; Jorm, Korten, Jacomb, Christensen, & Henderson, 1999) and significantly less negative outcome beliefs (e.g., being violent, abusing alcohol and drugs excessively; Jorm et al., 1999) for patients with schizophrenia. However, mental health professionals do express a more positive view towards community mental health care (Lauber, Anthony, Ajdacic-Gross, & Roessler, 2004).

Stigma can prevent people with a mental disorder from taking advantage of opportunities that would aid them in achieving their life goals (Corrigan, 2004). The Mental Health Foundation (2015) reported that compared to other long-term health conditions or disabilities, people with a mental disorder are least likely to be in a long-term relationship, live in good accommodation or be integrated in the community. Individuals with a mental illness are also less likely to be hired for a job (Chaudhuri, 2006; Tsang, Tam, Chan, & Chang, 2003; Kapungwe et al., 2010) and are more often pressured into leaving their job (Arthur et al., 2010). For example, a survey in the UK reported that 39% of people with mental health problems gave up work because they felt a lack of support from employers (Citizens advice, 2004). Furthermore, some persons with mental illness may suffer from self-stigma (Corrigan & Watson, 2002; Corrigan, Watson, & Barr, 2006; Rüsch et al., 2005; Watson, Corrigan, Larson, & Sells, 2007). Individuals who experience greater self-stigma also report lower self-esteem and self-efficacy (Corrigan et al., 2006; Link, Struening, Neese-Todd, Asmussen, & Phelan, 2014; Livingston & Boyd, 2010; Watson et al., 2007) as well as greater hopelessness

(Livingston & Boyd, 2010). Individuals with a mental disorder report stigma as one of the main barriers from seeking help for their symptoms (Masuda, Hayes, Twohig, Lillis, Fletcher, & Gloster, 2009; Van Hook, 1999).

Addressing stigmatisation and discrimination of people with mental illness is globally seen as a priority (The World Health Organisation [WHO], 2010). Therefore, several public campaigns have been started that aim to alter the public's beliefs and as a result reduce discrimination; some examples include the Mental Health Gap Action Programme by the WHO (2010), the 'Open the doors' campaign focusing on schizophrenia (World Psychiatric Association, 2016), the National Alliance of Mental Illness (2015) or the British national campaign focusing on depression, 'Defeat Depression' (Royal college of psychiatrists, 2015). Campaigns mainly focus on dispelling false beliefs and educating the public. In fact, studies have shown that more accurate knowledge about mental disorders is significantly associated with lower endorsement of stigmatising beliefs about mental illness (Corrigan et al., 2001; Hahn, 2002; Holmes, Corrigan, Williams, Canar, & Kubiak, 1999; Penn, Kommana, Mansfield, & Link, 1999; Rüsch et al., 2005).

1.2.1. Definition and Conceptualisation

The word *stigma* has its roots in ancient Greek, where it "[referred] to bodily signs designed to expose something unusual and bad about the moral status of the signifier" (Goffman, 1963, p. 1). Littlewood, Jadhav, and Ryder (2007, p. 180) define mental illness stigma as:

> The perception of a response to people who have the particular characteristic under study (here psychiatric illness) which restricts them to a lesser participation in everyday civil and family life than others, and which devalues them as of lesser moral or social worth. Such attitudes and responses are manifest in personal relations through avoidance, segregation, extrusion from the family and public participation, or punishment; while they may be manifest implicitly or explicitly in official policies or customary assumptions. Stigma may be represented in particular notions of contagion, violence, attractiveness, incompleteness, sexuality, heredity or through other ideas. These may be developed more formally in popular systems of medicine, psychology or ethics.

Littlewood and colleagues (2007) stress that stigma refers to people's beliefs and ensuing behaviours about the stigmatised characteristic or group, rather than its reality. In essence, stigma is "deeply discrediting" to the targeted individuals (Goffman, 1963, p. 3).

Corrigan (2000) and Corrigan and Watson (2002) proposed a socio-psychological model of mental illness stigma. They argue that stigma can come from two sources: on the one hand externally, from the public (e.g., *people with depression are weak*), and on the other from the afflicted person themselves (e.g., *I am weak*; Corrigan & Watson, 2002). The current research examined lay beliefs of the public and therefore only focuses on public stigma. Corrigan and Watson (2002) purported that mental illness stigma encompasses three components: stereotypes, prejudice and discrimination. A *stereotype* is a belief about a group of people that is generally negative in nature, agreed upon by a group and is meant to help efficiently generate impressions and expectations of members belonging to that group (Corrigan & Watson, 2002). Stereotypes are general knowledge, with people readily being able to recall them, yet this does not mean that they agree with them (Jussim, Nelson, Manis, & Soffin, 1995). For example, many people can recall stereotypes about people from different ethnicities but do not necessarily agree with their verity (Corrigan & Watson, 2002). A prejudicial attitude takes this one step further, with an individual agreeing with the said stereotype (Corrigan & Watson, 2002). Prejudicial attitudes involve an evaluative component, which is generally negative, and may produce an emotional response. Prejudice may then lead to discrimination, a behavioural response (Corrigan & Watson, 2002). For example, 'people with a mental illness are unpredictable' (stereotype), 'I agree with this statement, which makes me scared of them' (prejudice), 'so I will avoid people with a mental illness' (discrimination).

The mental illness stigma model and supporting literature will be explored in greater detail in Chapter 5. For the moment, note that the main principle of this model is the link between the endorsement of negative beliefs towards a group and the discriminatory behaviour that follows. While some studies examine this link (Angermeyer, Buyantugs, Kenzine, &

Matschinger, 2004; Angermeyer & Matschinger, 2003a; Corrigan, 1998; Corrigan et al., 2001; Dietrich, Bujantugs, Kenzine, Matschinger, & Angermeyer, 2004), the majority of the literature investigating mental illness stigma focuses on stigmatising beliefs (Angermeyer & Matschinger, 1996; Angermeyer, Matschinger, & Corrigan, 2004; Anglin, Link, & Phelan, 2006; Brockington, Hall, Levings, & Murphy, 1993; Chambers et al., 2010; Feldman & Crandall, 2007; Freeman, 1961; Högberg, Magnusson, Ewertzon, & Lützén, 2008; Högberg, Magnusson, Lützén, & Ewalds-Kvist, 2012; Howell, Weikum, & Dyck, 2011; Morris et al., 2012; Sévigny et al., 1999; Sørensen & Sørensen, 2013; Taylor & Dear, 1981; Vibha et al., 2008).

1.2.2. Stigmatising beliefs

A variety of stigmatising beliefs have been examined in the literature, including blaming individuals for the onset of their mental illness (Feldman & Crandall, 2007), a pessimistic outlook for recovery (Freeman, 1961), perceiving people with a mental illness as a nuisance (Gureje, Lasebikan, Ephraim-Oluwanuga, Olley, & Kola, 2005), as unpredictable (Angermeyer & Matschinger, 1996), dangerous (Angermeyer et al., 2004; Anglin et al., 2006) or violent (Anglin et al., 2006), and the endorsement of blaming people with a mental illness for such violent behaviours (Anglin et al., 2006), or preference for social distance (Angermeyer & Matschinger, 1996; Matschinger & Angermeyer, 1996; Arkar & Eker, 1994; Lauber et al., 2004).

Several studies have carried out factor analyses to better understand the main types of stigmatising beliefs held by the public towards people with a mental illness (Brockington et al., 1993; Cohen & Struening, 1962; Rahav, Struening, & Andrews, 1984; Taylor & Dear, 1981; Taylor, Dear, & Hall, 1979). Depending on the sample and the beliefs that were investigated different factors emerged, however the main four that held across studies were: *authoritarianism*, *benevolence*, *community mental health ideology* and *social distance* or *social restrictiveness*. The first, *authoritarianism*, embodies the belief that people with mental

disorders are different and inferior to people who are not mentally ill and that their life decisions should be made by others. This prejudicial attitude encompasses aspects such as a person with mental illness should not be treated with other patients, one should not marry a mentally ill person and a person with a history of mental illness should not be allowed to take public office (Rahav et al., 1984; Wolff, Pathare, Craig, & Leff, 1996). Second, *benevolence* represents the belief that people with mental disorders are childlike and need to be taken care of. This attitude encompasses a positive yet patronising view and includes aspects such as that the public is responsible for people with mental illness and more funding should go towards mental health services (Wolff et al., 1996). Third, *community mental health ideology (CMHI)* represents the acceptance of mental health facilities and people with mental illness in the community. This includes the impact of mental health facilities on the community, the merit of deinstitutionalised care and the therapeutic value of the community (Taylor & Dear, 1981). Finally, *social distance* or *social restrictiveness* embodies the fear and the desire for excluding people with a mental illness from the community. This factor encompasses a reluctance to work with, live next to or marry someone with a mental illness (Link, Cullen, Frank, & Wozniak, 1987). The terms social distance or social restrictiveness are used interchangeably in the literature to describe this prejudicial belief, going forward I will only refer to it as social distance. The present research will focus on these four stigmatising beliefs.

1.2.3. Dimensions of mental illness stigma

Stigma towards someone with a mental disorder is also linked to the schemata of MHL – recognition, causal and help-seeking beliefs of mental disorders. Endorsement of stigma varies depending on the type of characteristic or group that is in question. For instance, greater stigma is attached to having a mental illness than a physical illness such as AIDS or cancer (Corrigan et al., 2000). Mental illness is perceived as being more controllable than physical illness and is associated with a preference for greater social distance (Corrigan, 2000; Corrigan et al., 2001; Crandall & Moriarty, 1995). Jones, Farina, Markus, Miller, and Scott (1984) developed

dimensions to explain variation in stigma in term of interpersonal relations, namely: concealability, course, disruptiveness, aesthetics, origin and peril. For example, unlike other stigmatised groups (e.g., women or minority ethnic groups), it is not always apparent that an individual has a mental illness (Corrigan & Rüsch, 2002; Rüsch et al., 2005). Therefore, lesser *concealability* – the extent that a characteristic or condition is visible or can be hidden – may indicate that the display of symptoms of mental illness, such as more blatantly different behaviours, would trigger greater stigmatisation (Jones et al., 1984). Conversely, Hinshaw (2007) purported that people with less severe mental disorders may be subject to more stigmatisation as they may be seen to have less will power to conceal their illness. Similarly, in regards to the dimension of *disruptiveness*, the more apparent a mental disorder the more disruptive it can be considered. Furthermore, in regards to *origin*, the more a person is believed to be responsible for their condition the more likely they will be stigmatised (Jones et al., 1984). For most conditions the reasons for onset are not clear, therefore assumed responsibility of origin will vary and be higher for some conditions (e.g., crime, alcoholism, obesity) and lower for others (e.g., a person's height or being aesthetically unappealing; Jones et al., 1984). Hinshaw (2007) postulated that the core assumption is that deviant behaviour due to mental illness is often perceived as being due to weak will power. Weiner (1979) purported that the extent that a behaviour is in somebody's control can determine the likelihood that they will receive help from others. Indeed, Freeman (1961) found a strong negative association between beliefs about onset of mental disorder and outlook for recovery. That is participants who blamed their relatives for the onset of their mental disorder were less likely to think positively about possible recovery. Testing the above assumptions, Feldman and Crandall (2007) investigated dimensions of stigma in relation to preference for social distance towards people with mental illness. They found that participants stigmatised mental illness significantly more if they viewed them as rare, dangerous and the person's fault.

It is important to note that stigma varies depending on the mental disorder in question

(Corrigan, 2000; Corrigan et al., 2001; Feldman & Crandall, 2007). Schizophrenia can be perceived as a more severe mental disorder due to more apparently deviant and disruptive symptoms (e.g., delusions, hallucinations, catatonia). Conversely, mood and anxiety disorders may be seen to be more concealable than schizophrenia. Feldman and Crandall (2007) found that participants reported greater preference for social distance towards both schizophrenia and major depression, yet lower rates of stigma towards anxiety disorders (such as social phobia or posttraumatic stress disorder). Furthermore, Corrigan and associates (2000, 2001) found that participants perceived psychosis as more and depression as less controllable. They further found that psychosis was perceived to have a lesser chance for recovery while depression was perceived as most likely to benefit from therapy and medication. Thus, dimensions of stigma partially explain variations in stigma towards mental illness. Next, associations between stigmatising beliefs and social-demographic variables are examined.

1.2.4. Socio-demographic variables as predictors of mental illness stigma

Angermeyer and Dietrich (2006) conducted a systematic review of the literature on beliefs about mental illness. Age has generally been shown to be significantly positively associated with mental illness stigma, with older participants endorsing more negative beliefs about mental illness (Angermeyer & Dietrich, 2006). Age, for example, significantly positively predicted social distance (Angermeyer & Matschinger, 1996; Corrigan et al., 2001; Ku, 2007; Lauber et al., 2004) and endorsing responsibility of individuals for their mental illness (Freeman, 1961) as well as significantly negatively predicting recovery prognosis (Freeman, 1961) and perceived unpredictably of patients with mental illness (Angermeyer & Matschinger, 1996).

Gender in relation to mental illness stigma generally shows mixed results (Angermeyer & Dietrich, 2006). Most studies show no significant association (Angermeyer & Dietrich, 2006; Angermeyer & Matschinger, 1996; Dietrich et al., 2004), some found that men endorse mental illness stigma significantly more than women (Lauber et al., 2004; Mojtabai, 2010) and yet

others found the reverse relationship (Angermeyer & Matschinger, 2003a).

Similar to gender, education shows mixed results in relation to beliefs about mental illness (Angermeyer & Dietrich, 2006). While some studies find that more educated participants endorse mental illness stigma less (Angermeyer & Matschinger, 1996; Freeman, 1961; Mojtabai, 2010), several studies also found no significant association between education level and their endorsement of mental illness stigma (see Angermeyer & Dietrich, 2006).

In the same fashion, familiarity with mental illness also shows an ambivalent association with mental illness stigma (Angermeyer & Dietrich, 2006). Familiarity with mental illness ranges from having no experience with mental illness, to having watched a movie or documentary about mental illness, to being friends with, working with or having a mental illness oneself (Holmes et al., 1999). Overall, the public shows great experience with mental illness: for example, Corrigan and colleagues (2001) found that more than 90% of participants had some kind of previous experience with mental illness. Research has found that greater familiarity was significantly associated with greater endorsement of authoritarianism (Ku, 2007), lesser endorsement of dangerousness (Penn et al., 1994, 1999) and greater endorsement of social distance (Corrigan et al., 2001; Ku, 2007; Penn et al. 1994). Schema theory purports that when new information is assessed it is either assimilated (i.e., the information is congruent with the existing schema) or it is accommodated (i.e., the information is inconsistent with the existing schema and, therefore, the schema needs to be updated; Piaget, 1932). Thus, becoming more familiar with mental illness potentially exposes individuals to new, incongruent information, which in turn would update the mental illness schema. However, Angermeyer and Dietrich (2006) also noted several studies that did not find a significant relationship.

Angermeyer and Dietrich (2006) concluded that mental illness stigma was only slightly associated with socio-demographic variables. The present research will endeavour to examine other variables that are associated with mental illness stigma.

1.2.5. Summary

This section intended to introduce the concept of stigma towards mental illness and variables that are associated with it. Stigma towards mental illness is widespread (Corrigan, 2000; Corrigan & Watson, 2002). It can restrict people with a mental illness from fulfilling their life goals (Corrigan, 2004) and keep them from seeking appropriate health care (Masuda et al., 2009; Van Hook, 1999). Corrigan (2000) and Corrigan and Watson (2002) conceptualised mental illness stigma as stereotypes, prejudicial beliefs and discrimination, although the majority of the mental illness stigma literature has focused on prejudicial beliefs (see Angermeyer & Dietrich, 2006). The main four stigmatising beliefs that the public endorses are authoritarianism, benevolence, community mental health ideology and social distance (e.g., Taylor & Dear, 1981). Socio-demographic variables (see Angermeyer & Dietrich, 2006) and dimensions of mental illness stigma (e.g., concealability and perceived control; Feldman & Crandall, 2007) showed limited significant associations with endorsement of mental illness stigma. Thus, it is important to examine other potential variables that may explain this phenomenon.

Knowledge, MHL, and stigma towards mental illness have been shown to vary between cultures (Abdulla & Brown, 2011; Angermeyer & Dietrich, 2006; Ayalon & Areán, 2004; Jenkins, 1988; Jorm, 2000; Jorm et al., 2005; Murthy, 2002; Rüsch et al., 2005). In the following section I will introduce this relationship and lay the foundation for the role of culture.

<div align="center">

1.3. Culture

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Dhat syndrome is a term that was coined in South Asia little more than half a century ago to account for common clinical presentations of young male patients who attributed their various symptoms to semen loss.

(Diagnostic and Statistical Manual of Mental Disorders, 5th Edition [DSM-V], 2013, p. 833)

Dhat is a commonly-known syndrome in India that Western psychiatry would identify as symptoms of anxiety and depression (Castillo, 1997; DSM-V, 2013). Common cultural beliefs purport that this syndrome is due to excessive semen loss (e.g., frequent masturbation or sexual

intercourse; Castillo, 1997), because in Hindu tradition semen is a *dhatu* or essential element of the physical body (Castillo, 1997). According to Hindu tradition, disease can enter the body through an essential element (Halpern, 2016) and imbalance of the essential elements affects a person's health (Heyn, 1990). Therefore, it is understandable that symptoms related to the male reproductive function are more prevalent in a culture that emphasizes the gravity of excessive loss of semen (DSM-V, 2013). The importance of culture in relation to mental disorders is recognised by the Diagnostic and Statistical Manual of Mental Disorders (2013). It is explained that mental disorders and their core symptoms are found world-wide, but that symptoms and the course of mental disorders may be influenced by cultural and ethnic factors. As a result, a section outlining possible cultural variations is available in the DSM-V (2013) for relevant mental disorders.

In this way, as demonstrated by the example of the *dhat* syndrome, cultural beliefs shape how symptoms of mental disorders are manifested and which are more pronounced. Taking an example, Marsella, Kinzie, and Gordon (1973) compared Japanese, Chinese and Caucasian American depressed patients. They found significant differences in types of symptoms prevalent in each ethnic group. For instance, as compared to the Caucasian and Japanese American patients, the Chinese sample reported less existential symptoms (e.g., feeling hollow and empty, useless, depressed, sad or hopeless) but more pronounced somatic symptoms (e.g., diarrhoea, heartburn, chest pain). Similarly, Suhail and Cochrane (2002) compared Pakistanis from Pakistan, Pakistani British and Caucasian British patients with schizophrenia. They found, for instance, that delusions of control (e.g., thought broadcasting or thought insertion) were significantly more common in Caucasian British patients (25%) compared to both the Pakistani (13%) and Pakistani British (14%) samples, whereas delusions of grandiose identity (e.g., belief of being God or a famous person) were significantly less common in the Caucasian (7%) and Pakistani British (12%) than the Pakistani (41%) sample.

How the type and frequency of symptoms of mental illness can differ across cultures is

widely reported in the literature (Bhugra, 2006; DSM-V, 2013; Raguram, Weiss, Keval, & Channabasavanna, 2000; Williams & Healy, 2001). If the manifestation of mental disorders differs across cultures, beliefs about these mental disorders are bound to vary as well. Returning to the *dhat* syndrome, traditional Hindu gurus, as a treatment, advise sexual abstinence and to reduce sexual thoughts by focusing on meditation and yoga (Castillo, 1997). In the same vein, patients with schizophrenia whose delusions make them believe that they are speaking with God are more likely to speak with a spiritual leader than seek psychiatric treatment. It is therefore highly relevant to understand how culture may be associated with beliefs about mental illness, such as relating to causes, help-seeking and stigma.

1.3.1. History of and beliefs about mental illness across cultures

In ancient Greece mental illness was seen as something undesirable, disruptive and socially harmful (Fabrega, 1990). Since ancient times in Europe, people with severe illnesses, including mental illnesses, have been closely monitored and controlled by the state, its agencies and religious institutions, and an emphasis on segregation has prevailed (Fabrega, 1990, 1991b). In Hellenistic times, 'madness or insanity' was seen as a punishment from God (Fabrega, 1990), and similarly in the 16th century, Catholic practice focused highly on sin, demonism and performing exorcisms (Fabrega, 1991b). Already in the 17th century, families of people with mental illness were able to ask for support if they were not able to cope on their own, however this was deemed as 'social failure' and a declaration of dependence on the community and its resources (Fabrega, 1991b). By the late 18th century, mental as opposed to physical illness was differentiated as a distinct social issue, but handling of people with a mental illness remained similar – namely, the focus remained on segregation (Fabrega, 1991b).

In non-European cultures, a similar theme prevails: that of seeing mental illness as sorcery, witchcraft or punishment for breaking religious rules and neglect of traditional practices (Cooper & Sartorius, 1997; Fabrega, 1991a; Patel, 1995). In India, contrary to the western conception, mental illness is not seen as separate from physical illness (Fabrega,

1991a). In Ayurveda – a system of Hindu traditional medicine that is commonly found in India – illness is explained naturally and in terms of an imbalance of various elements, humours and qualities in the body (Fabrega, 1991a; Wagner, Duveen, Themel, & Verma, 1999; Weiss, et al., 1986, 1988). The bodily principles or *manas*, that are responsible for mental health, manage the "activation and direction of sensory and motor organs, self-regulation, reasoning and the combination of deliberation, judgement and discrimination" (Wagner et al., 1999, p. 417). Purity, temperament and inertia are said to balance the *manas*, while strong emotions (e.g., fear, grief, lust, anger), desires and repulsion can bring them out of balance (Wagner et al., 1999). Faith healers are commonly involved in the treatment of mental disorders, as it is believed that particular Hindu deities protect individuals against evil powers that cause mental illness (Khandelwal, Jhingan, Ramesh, Gupta, & Srivastava, 2004; Padmavati, Thara, & Corin, 2005). Furthermore, medical pluralism is prevalent in India, with patients seeking help from multiple folk healers (Fabrega, 1991a; Weiss et al., 1986).

Similar to the Indian culture, African-Caribbean cultures[1] appear to conceptualise the mind and body as integrated (Patel, 1995). However, there does appear to be a distinction between physical and mental disorders, which is evident by the existence of traditional healers who specialise in diagnosis and treatment of mental disorders (Patel, 1995). Furthermore, there appears to be a distinction between milder or transient mental illness and more chronic conditions (Arthur et al., 2010). For example, Arthur et al. (2010) investigated mental illness stigma in Jamaican communities and found that the public distinguished between 'madness' (a chronic condition, which is often associated with violent behaviours) and 'mental illness' (a milder condition). Less stigma is attributed to individuals with chronic, as opposed to milder,

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[1] The literature has often studied West African (e.g., Ghana, Nigeria) and Caribbean (e.g., Jamaica, Trinidad and Tobago) cultures as a single cultural group (Chaturvedi, McKeigue, & Marmot, 1993; Bhui, Stansfeld, Hull, Priebe, Mole, & Feder, 2003) and this approach will also be taken in the current research. It is noteworthy, though, that West African and Caribbean cultures differ along value dimensions (Hofstede, Hofstede, & Minkov, 2010) and the limitations of this approach are discussed in Chapter 2.

mental illness and the family and community are expected to take care of them (Okello & Ekblad, 2006).

The belief that life events are caused by external factors – spirits or witchcraft – is common in African-Caribbean cultures (Patel, 1995). While the characteristics of these spirits vary across African-Caribbean cultures (Patel, 1995; Ventevogel, Jordans, Reis, & de Jong, 2013), there are two main types (Okello & Ekblad, 2006; Patel, 1995). On the one hand, spirits may take the form of dead ancestors, who are generally perceived as being benevolent, but may cause illness or misfortune if they are upset (e.g., if a living relative disobeyed social norms; Okello & Ekblad, 2006; Patel, 1995). On the other hand, alien or evil spirits may be seen as a form of punishment (Teuton, Bentall, & Dowrick, 2007) and are believed to cause illness randomly (Okello & Ekblad, 2006; Patel, 1995). In line with these causal theories of mental illness, a study in Nigeria revealed that as treatments, 62% of traditional healers prescribed traditional sedatives, 9% relied on incantations, while 9% believed in making sacrifices to the gods (Odejide, Olatawura, Sanda, & Oyeneye, 1978).

The above provides a brief introduction to conceptualisations of mental illness in different cultures. Before cultural similarities or differences are explored further, the question, 'What is culture?' needs to be addressed.

1.3.2. Culture: concept and definition

Overall, culture has been recognised as an important variable studied in the psychology literature. Most psychological theories and data stem from Western samples, yet 70% of the world's population are non-Western (Triandis, 1995, 1996). The definition of culture in the social sciences proves controversial (Triandis, 1996). Kroeber and Kluckhohn (1952) reviewed the literature and found more than one hundred definitions of culture. They proposed the following definition (p. 181):

> Culture consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artefacts; the essential core of culture consists of

traditional (i.e. historically derived and selected) ideas and especially their attached values; cultural systems may on the one hand be considered as products of action, on the other as conditioning elements of further action.

This definition separates culture into two aspects; namely, on the one hand, tangible and observable behaviours and artefacts that remain permanent over time (Berry, Poortinga, Breugelmans, Chasiotis, & Sam, 2011). On the other hand, it comprises underlying values and meanings, which are inside people, created and shared between people during interactions and are more changeable (Berry et al., 2011). Wan and Chiu (2009, p.79) further define this second aspect of culture as "the assumptions that are widely shared among members of a certain group about values, beliefs, preference and behaviours of most members of the group or the culture of the group". The former has been used in anthropological research, while the latter is gaining great acceptance in social and cultural psychology research (Berry et al., 2011). The present research places itself within the realm of social and cultural psychology; as such culture is viewed from the second perspective.

There have been several different projects aiming to define and measure culture. The most widely known framework is Hofstede's (1980, 1984) cultural value dimensions – *Individualism-Collectivism*, *Power Distance*, *Uncertainty Avoidance*, *Masculinity-Femininity*, and later adding *Long Term Orientation* and *Indulgence-Restraint* (see Table 1.1 for definitions). These culture-level value dimensions have laid the conceptual framework for numerous subsequent cross-cultural studies. For example, Schwartz (1994) proposed seven individual-level value dimensions – namely, *Embeddedness* (conforming to status quo and restraint in behaviours), *Intellectual autonomy* (desiring to independently pursue intellectual directions and ideas), *Affective autonomy* (desiring to pursue own positive, emotional experience), *Hierarchy* (acceptance of unequal power, roles and resources), *Egalitarianism* (foregoing personal interests for voluntary engagement to promoting the welfare of others), *Mastery* (competition through proactive self-assertion), and *Harmony* (behaving harmoniously in relation to the environment). Similarly, Inglehart conducted the European/World Value

survey measuring attitudes, values and beliefs, and identified two dimensions: *"traditional versus secular-rational"* and *"survival versus self-expression"* values (Inglehart & Baker, 2000, p. 23). Smith and Bond (1998) concluded that these different projects produced converging results and lend support for Hoftede's (1980) original framework.

Table 1.1. Definitions of Hofstede's (1980, 1984) cultural dimensions (Hofstede, Hofstede, & Minkov, 2010).

Cultural Dimension	Definition	Reference
Individualism vs collectivism	Individualism can be defined as a preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families. Its opposite, collectivism, represents a preference for a tightly-knit framework in society in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioning loyalty. A society's position on this dimension is reflected in whether people's self-image is defined in terms of I or we.	(Individualism versus Collectivism (IDV), para. 1)
Power distance	the degree that the less powerful members of society accept and expect that power is distributed unequally	(Power Distance Index (PDI), para. 1)
Masculinity vs femininity	The Masculinity side of this dimension represents a preference in society for achievement, heroism, assertiveness and material rewards for success…Its opposite, femininity, stands for a preference for cooperation, modesty, caring for the weak and quality of life.	(Masculinity versus Femininity (MAS), para. 1)
Uncertainty avoidance	the degree to which members of a society feel uncomfortable with uncertainty and ambiguity	(Uncertainty Avoidance Index (UAI), para. 1)
Long Term Orientation	[a] prefer[ence] to maintain time-honoured traditions and norms while viewing societal change with suspicion…[as opposed to] encourage[ing] thrift and efforts in modern education as a way to prepare for the future.	(Long Term Orientation versus Short Term Normative Orientation, para. 1)
Indulgence vs. Restraint	Indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms.	(Indulgence versus Restraint (IND), para. 1)

While values have been the dominant cultural dimensions in cross-cultural research, Leung, Bond, de Carrasquel, Muñoz, Hernández, and colleagues (2002) recommended the need for additional constructs to measure cultural dimensions to explain cultural variation that cannot be detected by values. They proposed the five-factor model of social axioms ("generalized beliefs about oneself, the social and physical environment, or the spiritual world, and are in the form of an assertion about the relationship between two entities or concepts"; Leung et al.,

2002, p. 289): namely, *cynicism*, *social complexity*, *reward for application*, *spirituality/religiosity*, and *fate control*.

This raises the question of how these frameworks may explain cross-cultural variation in MHL and mental illness stigma. Below I briefly outline how some of the cultural dimensions may potentially be related to stigma and MHL. First, individuals endorsing power distance more would be more likely to hold people in authoritarian positions in high esteem – e.g., doctors or psychologists – and would therefore be more likely to endorse seeking help from them for symptoms of a mental disorder. Second, greater femininity embodies a preference for cooperation and, like Schwartz's egalitarianism, greater willingness to care for the weak. Thus, it is likely that this would transfer to caring for people with a mental disorder and helping in treating their symptoms. Third, studies have shown that individuals who have a preference for certainty were more likely to participate in health practices like regular vision, dental or cholesterol checks (Brouwers & Sorrentino, 1993) or undergo genetic testing to screen for potential onset of illnesses (Wolff et al., 2011). Thus, one can infer that this would translate to mental health treatments, with individuals preferring greater certainty being more inclined to seek a diagnosis for symptoms of mental disorders as well as start and continue treatment. On the other hand, in a context where the Western medical model is not the main framework, seeking help from Western sources – e.g., psychologists, psychiatrists – may be endorsed less by individuals who score high on uncertainty avoidance, and these individuals may instead be more likely to draw on lay sources of help and traditional medicines. Along the same lines, individuals scoring high on long-term orientation – who firmly follow traditions and norms – would be more likely endorse traditional or lay help-seeking beliefs for symptoms of mental disorders. Fifth, greater individualism as well as intellectual and affective autonomy would be related to the expectation that people are successful on their own and fulfil roles and duties independently. Thus, individuals who require assistance from others in order to be successful – for example debilitating symptoms of mental illness – may be stigmatised (Abdullah & Brown,

2011). Alternatively, Oyserman and colleagues' (2002) meta-analysis revealed that greater collectivism was associated with making less internal attributions and rather more external attributions – this is likely to translate to causal beliefs about mental disorders. Also, greater endorsement of embeddedness and harmony may be related to greater stigma towards mental illness if symptoms are perceived as outside the norm and may be related to greater endorsement of treatments congruent to the local medical model. One study that investigated the relationship between social axioms as well as value dimensions and belief towards disability (autism spectrum disorder) was Qi, Zaroff and Bernardo (2016). They found that none of the social axioms were significantly related to causal beliefs, whereas higher endorsement of the mind–body holism value was related to greater endorsement of the belief that parenting style caused autistic spectrum disorder.

While there may be merit in further exploration of any of these cultural dimensions in relation to the topic at hand, the present dissertation will solely focus on collectivism. This is because, first, collectivism is the only cultural dimension that has been previously examined in relation to MHL or mental illness stigma (Abdulla & Brown, 2011; Papadopoulous et al., 2002, 2012). A common approach in cross-cultural psychology in general – and indeed the majority of cross-cultural MHL research – does not measure value dimensions directly but rather applies Hofstede's (1980) country ratings to their research in an attempt to explain cross-cultural differences (Oyserman et al., 2002). This approach assumes that mean collectivism levels are accurate across life domains and stable over time, however there is little empirical support for these assumptions (Oyserman et al., 2002). In contrast, the present research measures participants' endorsement of collectivism directly and thus is an opportunity to build on the cross-cultural MHL and stigma literature.

Another reasons this value dimension was chosen, was because one aspect of MHL is the endorsement of lay strategies – e.g., relaxing, doing yoga, seeing a traditional or faith healer, speaking to family or friends – as treatment for symptoms of mental illness. While lay help is

endorsed worldwide (Chadda, et al., 2001; Cooper-Patrick et al., 1997; Penny, et al., 2009; Shankar, et al., 2006; Van Hook, 1999), this has been found to be even more so the case in non-Western compared to Western cultures (e.g., McCabe & Priebe, 2004). More collectivist individuals are more likely to draw on the in-group versus the out-group for guidance and support (Oyserman et al., 2002). Thus, the aim was to explore whether the more collectivist' tendency to rely on the in-group would translate to issues of mental health and would in turn be associated with lesser endorsement of professional treatments.

Furthermore, the present research solely examined collectivism and not individualism – this begs the question as to why the latter was not examined as well. Hofstede (1980, 2001) purported that a person with strong individualist tendencies would in turn score low on collectivism. The results of his study (1980) confirmed this notion, as factor analysis found that items of this dimension mapped on to a single bipolar dimension with individualism at one pole and collectivism at the other. Although conceptually this may make sense, recent research generally finds individualism and collectivism to be conceptualised along two orthogonal dimensions (Freeman & Bordia, 2001; Matsumoto, Weissman, Preston, Brown, & Kupperbusch, 1997; Rhee, Uleman, & Lee, 1996), indicating that individuals can be both individualist and collectivist at the same time. Freeman and Bordia (2001) noted that individuals can endorse individualism and collectivism in the same context and noted that this is different to someone being collectivist in one context and individualist in another. Thus, because recent research has found individualism and collectivism to be orthogonal I felt that also including individualism would have required the incorporation of another framework and, thus, made the research too convoluted. Also, past research has found high correlations between individualism and collectivism measures (Freeman & Bordia, 2001; Rhee et al., 1996), which shows a high level of overlap in spite of being distinct constructs, and thus inclusion of individualism may be repetitive. Furthermore, omitting individualism was also a practical decision, because it was desirable to reduce the number of measures to curb participant non-

completion and attrition rates.

1.3.3. Collectivism

Next, the concept of collectivism is outlined in greater detail. Collectivism denotes a priority given to group goals and needs, which results in a strong group- or social identity (Marshall, Chuong, & Aikawa, 2011; Shulruf, Hattie, & Dixon, 2007) and a heightened sense of belonging to the group (Hofstede, 2011). In collectivist cultures, social groups with common values are salient and thus people are oriented towards their in-group and away from out-groups (Oyserman, Coon, & Kemmelmeier, 2002). Further, in-group harmony and cohesion is highly valued (Imada, & Yussen, 2012). This heightened sense of group identity is counterbalanced by individuals' assurance that they will be looked after by their in-group (Hofstede, 1980, 2001; Oyserman et al., 2002). Collectivism is also positively associated with conservatism (Hofstede, 2001) whereby norms, customs and duties in collectivist cultures are highly valued and closely followed (Lykes & Kemmelmeier, 2014). Furthermore, Triandis (1995) purported that collectivism is related to: *social identity* (collectivists would closely link themselves with part of one or more collectives and form an interdependent identity), *cognition* (more collectivist individuals are motivated by norms and duties imposed by the collectives even when these oppose personal ones), *goals* (collectivists tend to prioritise collective goals over personal goals) and *relationships* (collectivists tend to emphasize their connectedness to collectives).

Markus and Kitayama (1991) proposed that the concept of the self differs across cultures and that "for many cultures of the world the Western notion of the [independent] self as an entity containing significant dispositional attributes…and inherent separateness of distinct persons…is simply not an adequate description of self-hood" (p. 226). They purported that more collectivist individuals hold interdependent self-construals, whereby they view themselves as connected to others and define themselves according to their group membership and the context they are in (Markus & Kitayama, 1991). A review by Matsumoto (1999) revealed that the independent and interdependent self-construals are orthogonal and not, as

originally conceptualised, polar opposites, and, further, that findings of these concepts and social phenomena often do not support predictions made by Markus and Kitayama (1991). Instead Matsumoto (1999) purported that cultural variables may be influencing self-construals, which in turn may be influencing cognitions, emotions and motivations.

Having defined collectivism and potential relationship with other social phenomena, this begs the questions of how cultures score on this culture dimension. Non-Western cultures such as India, Japan and Nigeria yield some of the highest scores for collectivism, whereas Western cultures like the UK and USA scored lowest on this dimension (Hofstede, 1980, 2001; Hofstede et al., 2010). Nonetheless, the literature has shown that highly collectivist cultures differ in regards to collectivism (Realo, Allik, & Greenfield, 2008; Rhee et al., 1996), and as a result, more specific aspects of collectivism have been utilised. For example, Triandis (1995) distinguished between vertical and horizontal collectivism (variability in the extent that individuals accept inequality, do not cooperate and emphasize difference to others). Further research investigated differences in specificity of the in-group – namely, defining the in-group as spouse, parent, kin, neighbour, friend or co-worker (Allik & Realo, 1996; Freeman & Bordia, 2001; Gelfand, Bhawuk, Nishii, & Bechtold, 2004; Hui, 1988; Matsumoto et al., 1997; Rhee et al., 1996). Indeed, Westerners reported treating close in-group members – e.g., close friends or co-workers – similarly, which was not the case in non-Westeners (Oyserman et al., 2002). Westerners compared to non-Westerners also report to having greater freedom to decide which groups they belong to as well as belonging to a greater number of groups (Oyserman et al., 2002). Furthermore, Matsumoto and associates (1997) found that compared to the USA and South Korea, Japan was less collectivist in relation to family, but highly collectivist in relation to friends, colleagues and strangers.Taking people of Asian descent into account, Kim, Atkinson, and Yan (1999) defined collectivism in the Asian context as putting the group before oneself, considering needs of others before one's own and viewing personal achievements as the family's. Further, conformity to familial and social norms and expectations are important

in Asian cultures (Kim et al., 1999), in order to avoid bringing disgrace and dishonour to the family and in-group. In the same vein, relying on the family, as opposed to outsiders, for support in terms of resources and advice is of great importance in Asian cultures (Kim et al., 1999).

Similarly, in relation to people of African descent – sub-Saharan Africans and Caribbeans – collectivism in the form of *communalism* has been studied (e.g., Jagers & Mock, 1995). According to Boykin, Jagers, Ellison, and Albury (1997), communalism encompasses fundamental interdependence with the group and identity being tied to group membership, importance of social relationships, superiority of group duties over personal responsibilities, and sharing knowledge and resources to support the group. One important aspect, specific to communalism, is that of kinship-like bonds that refers to family-like relationships with people outside one's blood relations (Hill, 2003). For example, this is reflected in the use of the words "brother" and "sister" to address people in one's in-group even when one may not personally know them (Abdulla & Brown, 2011). This is supported by findings that show that African Americans are very highly collectivist in relation to family, while this was not the case in relation to the out-group (Matsumoto et al., 1997).

Schwartz and colleagues (2010) compared different cultural-specific definitions of collectivism, namely communalism, familism and filial piety, in Caucasian, African, Hispanic and Asian Americans. They found that Caucasian participants scored lowest on all forms of collectivism, while African Americans scored highest on all followed by Asian Americans. This lends support to the notion that the particulars of collectivism may vary between cultures, and yet there is an underlying communality.

1.3.4. Summary

This section evidenced the importance of examining culture in relation to the current research. Following Wan and Chiu's (2009) conceptualisation, the present research views culture in terms of underlying values and meanings, particularly focusing on the cultural dimension of collectivism. I further demonstrated how collectivism may vary between different

cultural groups, depending on which aspect is emphasised or how the in-group is defined. Next, I outline how culture and collectivism may be associated with the aspects of MHL – recognition, causal beliefs, lay help-seeking beliefs and professional help-seeking beliefs.

1.4. Mental Health Literacy and Culture

> *We've had a lot of trouble with Western mental health workers…They would do this bizarre thing. They didn't take people out in the sunshine, where you begin to feel better… They didn't involve the whole community…Instead what they did was they took people one at a time into dingy little rooms and had them talk for an hour about bad things that had happened to them.*
>
> Rwandan man (Solomon, 2010, 15:58)

The Rwandan man's confusion over Western mental health care illustrates how beliefs about mental illness and their treatment can differ across cultures (Jorm, 2000). Large cultural differences exist in this respect, with Western cultures showing greater medical knowledge of mental disorders and lesser stigma towards mental illness compared to non-Western populations (Angermeyer & Dietrich, 2006; Ayalon & Areán, 2004; Jenkins, 1988; Jorm, 2000; Jorm, Nakane, Christensen, Yoshioka, Griffiths, & Wata, 2005). The concept of MHL was proposed by Jorm et al., (1997a) in Australia and since then has been approached from a Western perspective. Thus, one caveat to this line research has been that it assumes the correctness of the Western medical model and measures MHL against this standard. The previous section highlighted that this approach will have its limits in explaining mental illness in non-Western settings – as, for example, illustrated by the *dhat* syndrome found in India (DSM-V, 2013). However, although interpretations of mental illness can vary between cultures, core symptoms of mental disorders have been found to be universal (Bhugra, 2006; Williams & Healy, 2001). Thus, while researchers should be mindful of this when examining MHL and stigma in non-Western settings, this does not discredit the non-Western, MHL and stigma literature to date; and therefore this approach will also be adopted in the present dissertation. Below I outline cultural differences in aspects of MHL and associations between them.

1.4.1. Recognition

Cultural differences are evident in the public's recognition of mental disorders, with European individuals being significantly better at recognizing symptoms of mental disorders (65-100%) than their Asian and African-Caribbean counterparts (20-84%; Ayalon & Areán, 2004; Jenkins, 1988; Jorm et al., 2005; Loo, Wong, & Furnham, 2012; May, Rapee, Coello, Momartin, & Aroche, 2014). Lawrence and colleagues (2006) investigated the concept of depression in Caucasian, Caribbean and South Asian British participants. They found that three fourths of Caribbean and two thirds of Caucasian British perceived depression as an illness, while only one third of the South Asian British sample did. Interestingly, Lawrence and associates (2006) further found that while the majority of Caucasian British distinguished between depression and sadness or grief, only one-third of the Caribbean and one-fourth of the South Asian participants agreed with this view. Thus, although, similar to the Caucasian sample, Caribbean participants saw depression as an illness, it appears that their concept of depression differed and sadness and grief is perceived as an illness.

Similarly, Vijayalakshmi, Reddemma, and Math (2013) found that 81% of a rural, lay, Indian sample reported that they had no previous contact with mental illness. However, as the Indian national prevalence rate of mental illness is estimated at 5.8% (World Health Organisation & Wonca, 2014), Vijayalakshmi and colleagues' (2013) findings indicate a low level of awareness and clinical knowledge about mental disorders. Furthermore, Jorm and colleagues (2005) compared MHL in Japanese and Australian samples. They found that the Australian sample predominantly correctly assigned psychiatric labels to symptoms of a mental disorder displayed in a vignette, whereas the Japanese sample showed more variability in responses, indicating greater uncertainty and lower awareness of the clinical conditions. Thus, while the mental illness schemata in the Australian sample was mainly connected to the medical model, the Japanese sample displayed a greater range of connections to other schemata (i.e., non-medical, lay models of mental illness).

1.4.2. Causal beliefs

Endorsement of causal beliefs of mental disorders also varies between cultures (Narikiyo & Kameoka, 1992; Sheikh & Furnam, 2000). For example, individuals from some Asian or African-Caribbean cultures may attribute causes of mental disorders to supernatural phenomena (Hatfield, Mohamad, Rahim, & Tanweer, 1996; Ohaeri & Fido, 2001; Razali, Khan, & Hasanah, 1996; Sheikh & Furnam, 2000; Suhail, 2005), whereas in Western cultures such attributions are less prevalent (Angermeyer & Matschinger, 1999; Lloyd et al., 1998; McCabe & Priebe, 2004). Further, Lloyd and colleagues (1998) found that 31% of Asian British patients with a mental disorder reported that they did not know the reason for the onset of their symptoms, compared to only 13% of Caucasian and 20% of African-Caribbean patients.

Similarly, attribution styles of social events in general vary across cultures; with Westerners making more dispositional attributions, and non-Westerners making more situational attributions (Choi, Nisbett, & Norenzayan, 1998; Morris & Peng, 1994). Non-Western, collectivist, cultures are more socially focused – giving priority to group goals and needs (Hofstede, 1980; Marshall et al., 2011; Shulruf et al., 2007) – reasonably then this pattern would translate to attribution styles for symptoms of mental illness. In line with this, first, social causes are endorsed significantly more by individuals of Asian and African-Caribbean compared to European descent (Dietrich et al., 2004; McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992). Second, individuals of European descent attribute causes of mental illness to biological factors significantly more often than their Asian and African-Caribbean counterparts (McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992).

Studies examining the association between cultural variables and causal beliefs about mental disorders are rare. Wong, Tran, Kim, Kerne, and Calfa (2010) examined causal beliefs of mental disorders in an Asian American sample and found no significant correlation between Asian American values and endorsement of causal beliefs. However, Wong and colleagues (2010) examined Asian American values as a single variable, which consisted of the

subcategories of conformity to norms, family recognition through achievement, emotional self-control, collectivism and humility. Thus, it is possible that they would have gained more meaningful results if they had used the sub categories instead of a compound variable. It is proposed here that the characteristics of collectivism would indicate that collectivists would be more likely to attribute causes of mental illness to the community. Indeed, because Asian and African-Caribbean ethnicities and cultures tend to be more collectivist than European ones (Hofstede, 1980, 2001; Hofstede et al., 2010), this notion is supported by the findings that Europeans tend to attribute mental illness more to biological than social causes compared to Asian and African-Caribbean populations and vice versa (Dietrich et al., 2004; McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992).

1.4.3. Professional help-seeking beliefs

Continuing along the same lines, beliefs about appropriate help for mental disorders vary greatly across cultures (Chen & Mak, 2008; Karasz, 2005; Loo et al., 2012; McCabe & Priebe, 2004; Yoo, Goh, & Yoon, 2005). As collectivist individuals tend to value in-group relations and seeking advice from the in-group (Hofstede, 1980; Marshall et al., 2011; Shulruf et al., 2007), collectivists would be more inclined to seek help from lay sources, and from professional sources, if doing so would be endorsed by the in-group. Indeed, Loo and colleagues (2012) found that a Malaysian, as compared to a British sample, reported greater confidence in being able to find some kind of help for someone with a mental disorder. This indicates that the desire to find help to manage the symptoms of mental illness was greater in the Malaysian – more collectivist (Hofstede et al., 2010) – sample. Similarly, Kuo and associates (2007) found that individuals who reported greater interpersonal harmony – the belief in social cooperation, familial support and unity – were more likely to positively endorse seeking professional psychological help. They inferred that individuals endorsing interpersonal harmony perceived the psychological relationship as nurturing, safe and trustworthy.

Collectivism is linked with an interdependent self-construal – the perception that the self

is embedded in important social relationships (Markus & Kitayama, 1991). Yeh (2002) investigated interdependent self-construals in relation to beliefs about going to counselling. The results showed that greater endorsement of an interdependent self-construal was related to more positive beliefs about seeking professional help. These findings indicate that individuals who placed greater value on relationships and connectedness tended to have more positive beliefs about professional psychological help-seeking. Thus, it is viable to propose that this association would translate to the cultural-level: namely, that greater collectivism would be associated with greater endorsement of seeking professional help for symptoms of mental illness. Indeed, Tata and Leong (1994) found that greater endorsement of collectivism was related to more positive beliefs about professional psychological help-seeking. A limitation with this study is that collectivism was conceptualized as one end of the pole along a unipolar individualism-collectivism dimension, yet, as described in the previous section, research generally finds that individualism and collectivism are two orthogonal dimensions (Freeman & Bordia, 2001).

1.4.4. Lay help-seeking beliefs

Preference for type and degree of use of lay help also differs cross-culturally (Van Hook, 1999). For example, compared to Caucasian British patients with a mental disorder, Bangladeshi British patients were more likely to use natural remedies and engage in spiritual activities in the aim to reduce their symptoms of mental illness (McCabe & Priebe, 2004). Similarly, Sewilam and colleagues (2014) report that in Middle Eastern cultures, it is the responsibility of family, friends, neighbours and entire communities to offer social support and, likewise, that it must be accepted by the party in question. On the other hand, Weiss, Jadhav, Raguram, Vounatsou, and Littlewood (2001) found that Caucasian British patients with a mental disorder reported not wanting to "burden" (p. 82) friends and family with their mental health issues and felt that these social relationships would not endure as a result of speaking about their mental illness.

Religion and spirituality is regularly named as a helpful source to alleviate symptoms of

mental illness by individuals of African or Asian descent (Furnham & Hamid, 2014; Sewilam et al., 2014; Stansbury, Peterson, & Beecher, 2013). For example, Stansbury and colleagues (2013) found that in a sample of African Americans, 'reading your bible', 'prayer' and 'belief in God' were often advocated to manage symptom of mental illness (p. 229). Similarly, Sewilam and colleagues (2014) report that in Arabic cultures, traditional faith healers are seen as the first source of help for symptoms of mental disorders. On the other hand, the literature demonstrates that participants of European decent rarely, if at all, mention religion or spirituality as a way to manage their mental illness (May et al., 2014).

Because collectivists tend to seek help and support from the in-group, it is reasonable to surmise that more collectivist individuals would utilize lay sources of help for symptoms of mental illness to a greater extent. Indeed, in more collectivist cultures, mental illness is perceived as a communal concern; for example, in the Filipino culture, the whole family identifies as having a mental illness (Sanchez & Gaw, 2007). Similarly, in the Indian culture, the primary responsibility for the care of a person with mental illness lies with the family, who will make crucial decisions about treatment and care (Khandelwal et al., 2004). Conversely, less collectivist individuals would aim to manage symptoms of mental illness independently. Indeed, support for this notion stems from May and colleagues' (2014) results. They compared MHL in Australians and Iraqi and Somali refugees and found that Australian participants identified self-help methods as the most helpful in symptom management, which was significantly greater compared to the Iraqi and Somali samples.

1.4.5. Summary

The present section examined the relationship of culture and collectivism with aspects of MHL – knowledge and beliefs about mental disorders. The literature showed that schemata about mental illness varied across cultures. One the one hand, Westerners' schemata were highly rooted in the medical model of mental illness [Westerners' attributions of symptoms of mental illness were more often drawing on biological factors (McCabe & Priebe, 2004;

Narikiyo & Kameoka, 1992) and were more likely to endorse professional help (McCabe & Priebe, 2004; Weiss et al., 2001)]. On the other hand, non-Westerners' schemata of mental illness were more highly connected to a number of lay frameworks (Jorm et al., 2005) and, so, were more likely to endorse lay help for mental illness (Weiss et al., 2001). Just as knowledge and beliefs about symptoms, causes and available treatment vary between cultures, so does the endorsement of stigma about mental illness, which will be examined in the coming section.

1.5. Mental Illness Stigma and Culture

The literature widely demonstrates that stigma is present in all cultures, but recognises that the extent and the type of stigma towards people with mental illness differs according to ethnicity and culture (Abdulla & Brown, 2011; Angermeyer & Dietrich, 2006; Kurihara, Kato, Sakamoto, Reverger, & Kitamura, 2000; Murthy, 2002; Rüsch et al., 2005). Overall, the literature finds that Asian and African-Caribbean populations compared to European ones hold more stigmatising beliefs, including implicitly showing more stigma (Cheon & Chiao, 2012), perceiving people with a mental illness to be more dangerous (Whaley, 1997), more violent (Anglin et al., 2006), or perceiving people with a mental illness as not being able to fulfil their duties and roles (Weiss et al., 2001). For instance, Barke, Nyarko, and Klecha (2011) investigated mental illness stigma in Ghana and found that 57% of participants did not believe that mental illness was like any other illness and 80% of participants felt that it was easy to distinguish a person with a mental disorder from 'normal' people. Following suit, Gureje and colleagues (2001) focused on a Nigerian sample and found that the majority of participants believed individuals with a mental illness to be mentally retarded (89-93%), a public nuisance (93-98%) and dangerous (93-98%).

One study that compared mental illness stigma cross-culturally was Weiss and colleagues (2001), who employed both qualitative and quantitative methodologies to compare neurotically depressed patients from London, UK and Bangalore, India. The authors found a higher percentage of self-perceived stigma in the British sample. They explained that British

individuals valued their independence and would be less willing to involve family or other possible caretakers in their illness. However, because no inferential statistics were reported, it is difficult to gain insight into the empirical importance of these findings. The qualitative part of their study identified a number of cultural aspects associated with mental illness stigma. In the Indian sample, not being able to fulfil roles and duties or not finding a marriage partner for oneself or family members emerged as important aspects of mental illness stigma. On the other hand, the British sample reported greater concerns about disclosure because they felt that being labelled as mentally ill was seen as a sign of weakness and being a burden to others.

Similarly, Whaley (1997) investigated stigmatising beliefs towards mental illness in the USA and compared a range of ethnic groups (Caucasian, African, Hispanic, Asian-Pacific Islander & Native American). Their results showed that, apart from the Native American group, all other ethnic groups reported significantly higher perceived dangerousness towards people with a mental illness than their Caucasian counterparts. One limitation to this study is that they investigated attitudes toward homeless and homeless mentally ill people. Homelessness was not controlled for and therefore the extent that stigma was due to this characteristic or due to perceptions of mental illness is unclear. By the same token, Anglin and colleagues (2006) investigated perceived violence attributed to people with a mental illness in African and Caucasian Americans. Similar to the results of Whaley (1997), they found that the African American group reported perceiving people with mental illness to be significantly more violent than the Caucasian group, but African Americans were significantly less likely to blame and expect punishment for possible violent behaviours. These findings imply that while violence may be more highly expected from people with a mental disorder by African Americans, there is also less of an expectation of punishment for and perhaps higher acceptance of potential violent behaviour. Thus, these findings lend further support to the notion that individuals with an Asian or African background show greater stigma towards mental illness stigma than people of European descent.

Research examining the link between acculturation and mental illness lends further support. For instance, Fan (1999) investigated mental illness stigma in Anglo Australians, short-term Chinese and longer-term Chinese immigrants. They found that short-term Chinese-immigrants to Australia held the most authoritarian, socially restrictive and benevolent beliefs toward people with mental illness, whereas Anglo-Australians held the least stigmatising beliefs and long-term immigrants lay somewhere in the middle. They concluded that long-term immigrants were more acculturated into the Australian culture and therefore endorsed stigmatising beliefs less. Studies investigating mental illness stigma in relation to acculturation as a continuous variable report results along the same lines (Atkinson & Gim, 1989; Mellor, Carne, Shen, McCabe, & Wang, 2012). Greater acculturation to and endorsement of mainstream, cultural practices was significantly associated with lower levels of mental illness stigma, whereas endorsement of heritage cultural practices was significantly related to higher levels (Mellor et al., 2012). These studies investigated participants who were from an Asian background and acculturating to a mainstream culture with European values. Thus one can infer that individuals who endorse and embody European values to a greater extent and Asian values to a lesser extent hold less stigmatising beliefs about mental illness.

1.5.1. Cultural variation in authoritarianism, benevolence, community mental health ideology and social distance

The next section will examine cultural differences in relation to the four specific stigmatising beliefs that will be investigated in the present research, namely: authoritarianism, benevolence, community mental health ideology and social distance.

First, authoritarian beliefs are examined in relation to culture. Vijayalakshmi and colleagues (2013) investigated mental illness stigma in India. They found high endorsement of authoritarianism; for example, 64% of participants agreed that *there is something about adults with mental illness that makes it easy to tell them from normal people*. They compared the levels of mental illness stigma from their sample with results from a Ghanaian (Barke et al., 2011)

and a German sample (Angermeyer et al., 2003) and concluded that the Indian sample held more authoritarian views. Yet the implications of this conclusion should be very few, as no empirical evidence was given. In line with Vijayalakshmi and colleagues' (2013) conclusions, Papadopoulos Foster, and Cadwell (2012) did find significantly higher endorsement of authoritarian beliefs amongst White English and US immigrants to the UK, compared to Chinese British participants. Thus, it appears that persons with European as opposed to African-Caribbean or Asian descent endorse authoritarianism significantly less (Corrigan, Edwards, et al., 2001; Shokoohi-Yekta & Retish, 1991; Papadopoulos et al., 2012).

Next, benevolence is examined in relation to culture. Shokoohi-Yekta and Retish (1991) found that Chinese Americans showed greater benevolence than their Caucasian American counterparts, and further studies also report significantly greater benevolence in individuals of European than Asian ancestry (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Papadopoulos et al., 2012).

The link between community mental health ideology and culture is considered next. Papadopoulos and colleagues (2012) found that Caucasian British and European Americans living in the UK reported significantly less endorsement of people with mental illness living and being treated in the community than Chinese British participants. Similarly, Shokoohi-Yekta and Retish (1991) found that as compared to Caucasian Americans, Chinese Americans significantly preferred treatment options in the community to institutionalised ones. Thus, it appears that individuals from Asian descent endorse community mental health ideology significantly more than those of European heritage.

Finally, social distance is examined in relation to culture. People with a mental illness, more often than not, are categorised as out-group members (Angermeyer & Dietrich, 2006; Corrigan, 1998, 2000; Corrigan, Green et al. 2001). Thus, as more collectivist individuals tend to distance themselves from out-groups (Oyserman, et al., 2002), greater collectivism would be related to greater stigmatisation. Indeed, in support of this Shokoohi-Yekta and Retish (1991)

found that Chinese Americans preferred greater social distance to people with mental illness than European Americans. In conclusion, it appears that individuals of Asian descent endorse social distance more than those of European descent (Papadopoulos et al., 2012; Shokoohi-Yekta & Retish, 1991). Thus, the pattern of greater endorsement of stigma towards mental illness in people of Asian as opposed to European descent holds across all four stigmatising beliefs that are examined in the present research.

A number of studies have examined mental illness stigma across different cultures and ethnicities (Anglin et al., 2006; Cheon & Chiao, 2012; Kurihara et al., 2000; Weiss et al., 2001; Whaley, 1997), yet studies that include cultural variables to explain this variation are scarce in the literature (Ku, 2007; Papadopoulos, 2009; Papadopoulos, et al., 2012). The latter research will be examined in greater detail in Chapter 4 and 6.

1.5.2. Summary

This section aimed to introduce cultural differences in mental illness stigma by examining culture in relation to mental illness stigma overall (Anglin et al., 2006; Atkinson & Gim, 1989; Fan, 1999; Mellor et al., 2012; Weiss et al., 2001; Whaley, 1997) as well as in relation to the four stigmatising beliefs that are examined in the present research (Corrigan, Edwards, et al., 2001; Papadopoulos et al., 2012; Shokoohi-Yekta & Retish, 1991). The literature report that European individuals display less stigma towards people with mental illness than those from Asian or African-Caribbean cultures. This concludes the general literature review, and the next section will give an introduction to the present research rationale and aims.

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1.6. Research Overview

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Going back to the Indian father of a son with mental illness (The MINDS Foundation, 2012) and the Rwandan man talking about Western mental health care (Solomon, 2012), both display understanding and perceptions of mental health and its care that differs drastically from Western ones. The literature review examined MHL and mental illness stigma in relation to culture and the importance of studying this relationship. The overall aim of the present research

is to examine beliefs about mental illness in relation to culture amongst lay samples.

It is important to mention that when reviewing the literature and explaining findings, studies that examine beliefs about mental illness make use of both the literature focusing on MHL and mental illness stigma interchangeably (see Abdulla & Brown, 2011). However, methodologies vary depending on whether MHL or mental illness stigma is being studied. Few studies have examined the relationship between MHL and mental illness stigma (e.g., Shea & Yeh, 2008), yet as the previous literature review has demonstrated, these concepts are innately linked. As such, the present research will be examining culture and cultural variables in relation to both MHL and mental illness stigma. While throughout the dissertation Eastern versus Western cultures (i.e., highly vs. less collectivist) are compared, there are notable differences in samples between studies. On the one hand, Study 1 used a migration sample, comparing the Eastern versus Western cultural influences between migrants (African-Caribbean & South Asian) and host nationals (Caucasian British) in a Western context (UK). On the other hand, Studies 2 and 3 were cross-cultural and cross-national comparisons, focusing more narrowly on European Americans from the USA and Indians from India.

Study 1 of the present research investigated MHL in three ethnic groups: Caucasian, South Asian and African-Caribbean British. Most research examining MHL focuses on depression and schizophrenia, but Study 1 additionally looked at generalised anxiety disorder (GAD). Thus the aim of the first study was two-fold: first, to compare MHL between mental disorders, and, second, between ethnic groups. First, I proposed that participants will be more likely to recognise schizophrenia than depression and GAD and that they will hold different causal and help-seeking beliefs depending on the mental disorder. Second, I hypothesised that Caucasian British participants will demonstrate better recognition of mental disorders compared to South Asian and African-Caribbean British participants as well as that the ethnic groups will report different causal and help-seeking beliefs.

The majority of literature has used a qualitative approach or employed percentages to

explain variation in MHL (Dahlberg, Waern, & Runeson, 2008; Jorm et al., 1997a, 1997b, 1997c; Goldney et al., 2001; Lauber, Nordt, et al., 2003; Riedel-Heller et al., 2005; Wright et al., 2007). As I was interested in empirically examining cross-cultural variation in MHL in Study 2 I developed quantitative measures for MHL, and used multi-group confirmatory factor analysis to validate these. The measures were then used to compare MHL in European Americans and Indians, and the MHL model was validated in both cultures using multi-group structural equation modelling. The final aim of the second study was to examine collectivism as a predictor of the MHL model.

As discussed earlier, the literature has rarely studied the link between MHL and mental illness stigma (e.g., Shea & Yeh, 2008). Therefore, in the second part of Study 2, I investigated mental illness stigma in the form of social distance and its relationship with the MHL model from a cross-cultural perspective.

In Study 3, I examined mental illness stigma – authoritarianism, benevolence, community mental health ideology and social distance – cross-culturally. I used the *Community Attitudes Towards the Mentally Ill* (CAMI) measure (Taylor & Dear, 1981; Taylor, Dear, & Hall, 1979), as it has been used in numerous cross-cultural studies (Brockington et al., 1993; Chambers et al., 2010; Guise, Chambers, Välimäki, & Makkonen, 2010; Chew, Jensen, & Rosén, 2009; Granello & Granello, 2000; Högberg, Magnusson, Ewertzon, & Lützén, 2008; Högberg, Magnusson, Lützén, & Ewalds-Kvist, 2012; Howell, Weikum, & Dyck, 2011; Masuda et al., 2009; Morris et al., 2012; Papadopoulos, Leavey, & Vincent, 2002; Papadopoulos et al., 2012; Sévigny et al., 1999; Sørensen, & Sørensen, 2013; Taylor & Dear, 1981; Vibha et al., 2008; Wolff, Pathare, Craig, & Leff, 1996). Nonetheless, the measure had not been robustly validated in previous studies. Thus, similar to Study 2, I used multi-group confirmatory factor analysis to cross-culturally validate the CAMI measure. Following this, I aimed to test the cross-cultural validity of Corrigan's (2000) and Corrigan and Watson's (2002) mental illness stigma model, examining the link between prejudicial beliefs and discrimination.

Finally, in the second part of Study 3, I examined cultural variables in relation to the mental illness stigma model. Previous studies have reported inconsistent findings between collectivism and mental illness stigma (Ku, 2007; Papadopoulos, 2009; Papadopoulos et al., 2012). Therefore, the present research examined the indirect effects between collectivism and mental illness stigma through specific aspects of collectivism. Further, the literature has found religion as a prominent predictor of beliefs of mental illness (e.g., Cinnirella & Loewenthal, 1999; Gureje et al., 2001). As such, the last study also examined classic religiosity and spirituality in relation to mental illness stigma. Thus, the second part of Study 3 used multi-group structural equation modelling to cross-culturally test cultural and religious variables in relation to the mental illness stigma model. Further details of Studies 1-3 are given in Chapters 2-6.

2. Mental Health Literacy in Caucasian British, African-Caribbean and South Asian samples in the UK

The purpose of the first study was twofold: to examine MHL – specifically, recognition, causal beliefs and help-seeking beliefs – first, between mental disorders and, second, across ethnicities in the UK.

2.1.1. Mental Disorders

First, I will consider how MHL varies depending on the type of mental disorder. Most studies examining MHL have focused on depression and schizophrenia (Angermeyer & Dietrich, 2006; Dahlberg et al., 2008; Dietrich et al., 2004; Furnham & Hamid, 2014; Jorm, 2000; Jorm et al., 1997a, 1997b, 1997c; Lauber et al., 2001; Lauber, Nordt, et al., 2003; Riedel-Heller et al., 2005; Wright et al., 2007). Compared to depression (26-69%), the public recognises symptoms of schizophrenia (69-88%) as a mental disorder significantly more often (Angermeyer & Dietrich, 2006). In relation to schizophrenia, biological causes are endorsed the most, followed by psychosocial stress, whereas the reverse is the case for depression (Angermeyer & Dietrich, 2006). Seeing a GP is recommended most when faced with depressive symptoms, while seeing a psychiatrist is more readily recommended in relation to symptoms of schizophrenia and indeed when symptoms of any mental disorder are recognised as a mental illness (Angermeyer & Dietrich, 2006). MHL regarding both depression and schizophrenia was examined in the present study.

On the other hand, studies examining MHL in relation to anxiety disorders are rare; for example, Reavley and Jorm (2011a) examined social phobia and post-traumatic stress disorder. They found low recognition for both disorders (social phobia: 9%, post-traumatic stress disorder: 38%) and further participants were very unlikely to identify them as a mental disorder (social phobia: 4%, post-traumatic stress disorder: 3%). Seeing a counsellor was the most recommended type of help (social phobia: 18%, post-traumatic stress disorder: 33%), followed by seeing a GP (social phobia: 12%, post-traumatic stress disorder: 16%) and further, for social

phobia *'getting out more or being more social'* was the third highest recommendation (11%). In the current study, generalized anxiety disorder (GAD) was investigated because, first, to the best of my knowledge it has not been examined in relation to MHL previously and second, because the prevalence worldwide for this disorder is high (Kessler, Chiu, Demler, & Walters, 2005; WHO, 2001a).

Below are descriptions of the inherent features, causes and prevailing treatments in the UK of schizophrenia, depression and GAD.

2.1.1.1. Schizophrenia

> *What was real and what was not? I couldn't tell the difference any longer*
> Patient with schizophrenia (Mind, 2014, p. 4)

Worldwide the incidence of schizophrenia is 0.1-0.4 per 1000 population (WHO, 1996) and in the UK about 1% of the population will experience schizophrenia in their lifetime (NHS, 2014a). Men and women are affected equally (NHS, 2014a). Schizophrenia is characterised by "fundamental and characteristic distortions of thinking and perception, and by inappropriate or blunted affect" (ICD-10, 1992, p. 78). See Table 2.1 for full DSM-V and ICD-10 diagnostic criteria for schizophrenia. Common symptoms of schizophrenia include the following (Mind, 2014; NHS, 2014b):

- Positive symptoms:
    - Hallucinations
    - Delusions
    - Confused thoughts (thought disorder)
    - Changes in behaviour
- Negative symptoms:
    - Difficulty concentrating
    - The desire to avoid people and participating in activities
    - Stunted or inappropriate emotional responses

      o Lack of interest and motivation in life and activities

Research shows that there is no single causal factor, but rather that a combination of factors contribute to onset of schizophrenia (NHS, 2014c). Factors may include:

- *Genetic*: schizophrenia tends to run in the family. A combination of genes was identified that make people more vulnerable to onset of the disorder (Mind, 2014; NHS, 2014c).

- *Neurotransmitters*: an imbalance in dopamine and serotonin neurotransmitters or a change in the body's sensitivity to these two has been proposed as a cause (NHS, 2014c).

- *Stress and stressful life events* can make individuals vulnerable to schizophrenia – e.g., bereavement, living in poverty, social isolation, losing a job, end of a relationship or abuse (Mind, 2014; NHS, 2014c).

- *Drug abuse*: as a result of using certain street drugs (e.g., cannabis, cocaine, LSD, amphetamines) individuals may develop or worsen symptoms of schizophrenia (Mind, 2014; NHS, 2014c).

In the UK, schizophrenia is treated with a combination of medication and talking therapy (NHS, 2015):

- *Medication*: doctors generally prescribe antipsychotic drugs to manage the positive symptoms, although newer antipsychotics have been found to help with both positive and negative symptoms (Mind, 2012a, 2014).

- *Psychological treatment*: these aim at helping patients cope better with hallucinations and delusions and can help with some of the negative symptoms like apathy or lack of enjoyment or motivation (NHS, 2015). Common psychological treatments include cognitive behavioural therapy, family therapy and art therapy (Mind, 2012b, 2014).

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Table 2.1. DSM-IV and ICD 10 symptoms of Depression, Schizophrenia and GAD.

DSM-V (APA, 2013, p. 99): Diagnostic criteria of Schizophrenia	ICD-10 (WHO, 1992, p. 79-81): Diagnostic guidelines of Schizophrenia
A. Two (or more) of the following, each present for a significant portion of time during a 1-month period (or less if successfully treated). At least one of these must be (1), (2), or (3): 1. Delusions. 2. Hallucinations. 3. Disorganized speech (e.g., frequent derailment or incoherence). 4. Grossly disorganized or catatonic behavior. 5. Negative symptoms (i.e., diminished emotional expression or a volition). B. For a significant portion of the time since the onset of the disturbance, level of functioning in one or more major areas, such as work, interpersonal relations, or self-care, is markedly below the level achieved prior to the onset (or when the onset is in childhood or adolescence, there is failure to achieve expected level of interpersonal, academic, or occupational functioning). C. Continuous signs of the disturbance persist for at least 6 months. This 6-month period must include at least 1 month of symptoms (or less if successfully treated) that meet Criterion A (i.e., active-phase symptoms) and may include periods of prodromal or residual symptoms. During these prodromal or residual periods, the signs of the disturbance may be manifested by only negative symptoms or by two or more symptoms listed in Criterion A present in an attenuated form (e.g., odd beliefs, unusual perceptual experiences). D. Schizoaffective disorder and depressive or bipolar disorder with psychotic features have been ruled out because either 1) no major depressive or manic episodes have occurred concurrently with the active-phase symptoms, or 2) if mood episodes have occurred during active-phase symptoms, they have been present for a minority of the total duration of the active and residual periods of the illness. E. The disturbance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition. F. If there is a history of autism spectrum disorder or a communication disorder of child hood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations, in addition to the other required symptoms of schizophrenia, are also present for at least 1 month (or less if successfully treated).	The normal requirement for a diagnosis of schizophrenia is that a minimum of one very clear symptom (and usually two or more if less clear-cut) belonging to any one of the groups listed as (a) to (d) above, or symptoms from at least two of the groups referred to as (e) to (h), should have been clearly present for most of the time during a period of 1 month or more. Conditions meeting such symptomatic requirements but of duration less than 1 month (whether treated or not) should be diagnosed in the first instance as acute schizophrenia-like psychotic disorder and reclassified as schizophrenia if the symptoms persist for longer periods. Symptom (i) in the above list applies only to the diagnosis of Simple Schizophrenia, and a duration of at least one year is required. Viewed retrospectively, it may be clear that a prodromal phase in which symptoms and behaviour, such as loss of interest in work, social activities, and personal appearance and hygiene, together with generalized anxiety and mild degrees of depression and preoccupation, preceded the onset of psychotic symptoms by weeks or even months. Because of the difficulty in timing onset, the 1-month duration criterion applies only to the specific symptoms listed above and not to any prodromal nonpsychotic phase. The diagnosis of schizophrenia should not be made in the presence of extensive depressive or manic symptoms unless it is clear that schizophrenic symptoms antedated the affective disturbance. If both schizophrenic and affective symptoms develop together and are evenly balanced, the diagnosis of schizoaffective disorder should be made, even if the schizophrenic symptoms by themselves would have justified the diagnosis of schizophrenia. Schizophrenia should not be diagnosed in the presence of overt brain disease or during states of drug intoxication or withdrawal. The course of schizophrenic disorders can be classified by using the following five-character codes: Continuous, Episodic with progressive deficit, Episodic with stable deficit, Episodic remittent, Incomplete remission, Complete remission, Other, Course uncertain, period of observation too short Paranoid schizophrenia The general criteria for a diagnosis of schizophrenia (see introduction above) must be satisfied. In addition, hallucinations and/or delusions must be prominent, and disturbances of affect, volition and speech, and catatonic symptoms must be relatively inconspicuous. The hallucinations will usually be of the kind described in (b) and (c) above. Delusions can be of almost any kind but delusions of control, influence, or passivity, and persecutory beliefs of various kinds are the most characteristic. Includes: paraphrenic schizophrenia Differential diagnosis. It is important to exclude epileptic and drug-induced psychoses, and to remember that persecutory delusions might carry little diagnostic weight in people from certain countries or cultures. Excludes: involutional paranoid state, paranoia

Table 2.1. DSM-IV and ICD 10 symptoms of Depression, Schizophrenia and GAD (Continued).

	ICD-10 (WHO, 1992, p. 79-81): Diagnostic guidelines of Schizophrenia (Continued)
	Hebephrenic schizophrenia The general criteria for a diagnosis of schizophrenia (see introduction above) must be satisfied. Hebephrenia should normally be diagnosed for the first time only in adolescents or young adults. The premorbid personality is characteristically, but not necessarily, rather shy and solitary. For a confident diagnosis of hebephrenia, a period of 2 or 3 months of continuous observation is usually necessary, in order to ensure that the characteristic behaviours described above are sustained. Includes: disorganized schizophrenia hebephrenia Catatonic schizophrenia The general criteria for a diagnosis of schizophrenia (see introduction above) must be satisfied. Transitory and isolated catatonic symptoms may occur in the context of any other subtype of schizophrenia, but for a diagnosis of catatonic schizophrenia one or more of the following behaviours should dominate the clinical picture: (a) stupor (marked decrease in reactivity to the environment and in spontaneous movements and activity) or mutism; (b)excitement (apparently purposeless motor activity, not influenced by external stimuli); (c) posturing (voluntary assumption and maintenance of inappropriate or bizarre postures); (d) negativism (an apparently motiveless resistance to all instructions or attempts to be moved, or movement in the opposite direction); (e) rigidity (maintenance of a rigid posture against efforts to be moved); (f) waxy flexibility (maintenance of limbs and body in externally imposed positions); and (g) other symptoms such as command automatism (automatic compliance with instructions), and perseveration of words and phrases. In uncommunicative patients with behavioural manifestations of catatonic disorder, the diagnosis of schizophrenia may have to be provisional until adequate evidence of the presence of other symptoms is obtained. It is also vital to appreciate that catatonic symptoms are not diagnostic of schizophrenia. A catatonic symptom or symptoms may also be provoked by brain disease, metabolic disturbances, or alcohol and drugs, and may also occur in mood disorders. Includes: catatonic stupor schizophrenic catalepsy schizophrenic catatonia schizophrenic flexibilitas cerea Undifferentiated schizophrenia This category should be reserved for disorders that: (a) meet the general criteria for schizophrenia; (b) either without sufficient symptoms to meet the criteria for only one of the subtypes, or with so many symptoms that the criteria for more than one of the paranoid, hebephrenic, or catatonic subtypes are met. Includes: atypical schizophrenia

Table 2.1. DSM-IV and ICD 10 symptoms of Depression, Schizophrenia and GAD (Continued).

DSM-V (APA, 2013, p. 160-161): Diagnostic criteria for Major Depressive Disorder	ICD 10 (WHO, 1992, p. 100): Diagnostic guidelines of a depressive episode
A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning: at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure. Note: Do not include symptoms that are clearly attributable to another medical condition. B. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad, empty, hopeless) or observation made by others (e.g., appears tearful). (Note: In children and adolescents, can be irritable mood.) C. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation). D. Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. (Note: In children, consider failure to make expected weight gain.) E. Insomnia or hypersomnia nearly every day. F. Psychomotor agitation or retardation nearly every day (observable by others, not G. merely subjective feelings of restlessness or being slowed down). H. Fatigue or loss of energy nearly every day. I. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick). J. Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others). K. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation with L. out a specific plan, or a suicide attempt or a specific plan for committing suicide. M. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. N. The episode is not attributable to the physiological effects of as ubstance or to another medical condition. Note: Criteria A-C represent a major depressive episode.	In typical depressive episodes of all three varieties described below (mild, moderate, and severe), the individual usually suffers from depressed mood, loss of interest and enjoyment, and reduced energy leading to increased fatiguability and diminished activity. Marked tiredness after only slight effort iscommon. Other common symptoms are: (a) reduced concentration and attention; (b) reduced self-esteem and self-confidence; (c) ideas of guilt and unworthiness (even in a mild type of episode); (d) bleak and pessimistic views of the future; (e) ideas or acts of self-harm or suicide; (f) disturbed sleep (g) diminished appetite.

Table 2.1. DSM-IV and ICD 10 symptoms of Depression, Schizophrenia and GAD (Continued).

DSM-V (APA, 2013, p. 160-161): Diagnostic criteria for Major Depressive Disorder (Continued)	
Note: Responses to a significant loss (e.g., bereavement, financial ruin, losses from a natural disaster, a serious medical illness or disability) may include the feelings of intense sadness, rumination about the loss, insomnia, poor appetite, and weight loss noted in Criterion A, which may resemble a depressive episode. Although such symptoms may be understandable or considered appropriate to the loss, the presence of a major depressive episode in addition to the normal response to a significant loss should also be carefully considered. This decision inevitably requires the exercise of clinical judgment based on the individual's history and the cultural norms for the expression of distress in the context of loss. O. The occurrence of the major depressive episode is not better explained by schizoaffective disorder, schizophrenia, schizophreniform disorder, delusional disorder, or other specified and unspecified schizophrenia spectrum and other psychotic disorders. There has never been a manic episode or a hypomanic episode. Note: This exclusion does not apply if all of the manic-like or hypomanic-like episodes are substance-induced or are attributable to the physiological effects of another medical condition.	
DSM-V (APA, 2013, p. 222): Diagnostic criteria for Generalized Anxiety Disorder	**ICD-10 (WHO, 1992, p. 116): Diagnostic guidelines for Generalized Anxiety Disorder**

A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance).
 	
B. The individual finds it difficult to control the worry.
 	
C. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms having been present for more days than not for the past 6 months)
 	
Note: Only one item is required in children.
 	
  1. Restlessness or feeling keyed up or on edge.
  2. Being easily fatigued.
  3. Difficulty concentrating or mind going blank.
  4. Irritability.
  5. Muscle tension.
  6. Sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep).
	The sufferer must have primary symptoms of anxiety most days for at least several weeks at a time, and usually for several months. These symptoms should usually involve elements of:
	
	(a) apprehension (worries about future misfortunes, feeling "on edge", difficulty in concentrating, etc.)
	(b) motor tension (restless fidgeting, tension headaches, trembling, inability to relax); and
	(c) autonomic overactivity (light headedness, sweating, tachycardia or tachypnoea, epigastric discomfort, dizziness, dry mouth, etc.).
	
	In children, frequent need for reassurance and recurrent somatic complaints may be prominent.
	
	The transient appearance (for a few days at a time) of other symptoms, particularly depression, does not rule out generalized anxiety disorder as a main diagnosis, but the sufferer must not meet the full criteria for depressive episode, phobic anxiety disorder, panic disorder, or obsessive-compulsive disorder

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Table 2.1. DSM-IV and ICD 10 symptoms of Depression, Schizophrenia and GAD (Continued).

DSM-V (APA, 2013, p. 222): Diagnostic criteria for Generalized Anxiety Disorder (Continued)	
D. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. E. The disturbance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition (e.g., hyperthyroidism). E. The disturbance is not better explained by another mental disorder (e.g., anxiety or worry about having panic attacks in panic disorder, negative evaluation in social anxiety disorder [social phobia], contamination or other obsessions in obsessive-compulsive disorder, separation from attachment figures in separation anxiety disorder, reminders of traumatic events in posttraumatic stress disorder, gaining weight in anorexia nervosa, physical complaints in somatic symptom disorder, perceived appearance flaws in body dysmorphic disorder, having a serious illness in illness anxiety disorder, or the content of delusional beliefs in schizophrenia or delusional disorder).	

2.1.1.2. Depression

> *It was like I'd fallen into a deep abyss... Even when I tried scrambling up the sides, it was no good, as exhaustion and an overwhelming feeling of nothingness pulled me back down again. I felt like I'd never see the light again...*
>
> Patient with depression (Mind, 2012c, p. 6)

Next, the symptoms, causes and treatments of depression are examined. Depression is a leading cause of disability, with 350 million people being affected worldwide (WHO, 2015). In the UK, 2.6% of the population have depression in a given year (Mind, 2013). "The individual usually suffers from depressed mood, loss of interest and enjoyment, and reduced energy leading to increased fatigability and diminished activity" (ICD 10, 1992, p. 100). See Table 2.1 for a full list of the DSM-V and ICD-10 diagnostic criteria for depression. Common symptoms of depression include (NHS, 2014d):

- Psychological:
    - Low mood or sadness
    - Feelings of hopelessness and helplessness
    - Low self-esteem
    - Lack of motivation or interest in things
    - Irritability
    - Indecisiveness
    - Anhedonia
    - Anxiety or worrying
    - Suicidal thoughts or self-harm
- Physical:
    - Slowed movement or speech
    - Change in appetite or weight
    - Aches and pains
    - Lack of energy

- o Changes to the menstrual cycle

  - o Changes to sleep

- Social

  - o Drop in performance at work

  - o Avoidance of social activities, hobbies and meeting people

Research suggests that multiple factors can cause and trigger onset of depression (Mind, 2012c; NHS, 2014e):

- *Stressful life events*: including bereavement, relationship breakdowns or traumatic event (Mind, 2012c; NHS, 2014e).

- *Illness*: risk of onset of depression is higher in someone with a long-standing illness (e.g., coronary heart disease, cancer, head injury; NHS, 2014e).

- *Hereditary*: depression tends to run in the family. No specific genes have been identified and depression may be a result of learnt behaviours (Mind, 2012c).

- *Drugs and alcohol*: alcohol and street drugs can trigger depressed mood if used repeatedly (Mind, 2012c).

In the UK, treatment generally consists of a combination of self-help, medication and talking therapies (Mind, 2012c; NHS, 2014f):

- *Self-help*: exercise has been suggested to be helpful for mild depression (Mind, 2012c; NHS, 2014f). Talking to friends and family and seeking help from peer support groups is also recommended for mild to moderate depression (Mind, 2012c; NHS, 2014f).

- *Antidepressant drugs* are recommended for moderate and severe depression to alleviate low mood and enable patients to deal with symptoms (Mind, 2012c).

- *Talking therapy* is recommended for moderate depression, including cognitive behavioural therapy, counselling, behavioural activation or mindfulness (Mind,

2012c; NHS, 2014f).

- For severe depression a combination of antidepressant drugs and talking therapies are recommended for best outcome (NHS, 2014f).

2.1.1.3. Generalised Anxiety Disorder

I was worried all the time about everything. It didn't matter that there were no signs of problems, I just got upset. I was having trouble falling asleep at night, and I couldn't keep my mind focused at work

Patient with GAD (National Institute of Mental Health, n.d., para. 3)

Last, common symptoms, causes and treatments for generalised anxiety disorder (GAD) are examined. The prevalence of GAD worldwide is 7.9% (WHO, 2001a), while the 12-month UK prevalence for anxiety disorders was 18% (Fineberg et al., 2013). "The essential feature [for GAD] is anxiety, which is generalized and persistent but not restricted to, or even strongly predominating in, any particular environmental circumstances" (ICD-10, 1992, p. 115). See Table 2.1 for full DSM-V and ICD-10 diagnostic criteria of GAD. Common symptoms of GAD include the following (Mind, 2015; NHS, 2016a):

- Psychological:
  - Feeling tense, nervous and on edge
  - Having a sense of dread
  - Irritability
  - Difficulty concentrating
  - Rumination
  - Feeling numb
  - Racing thoughts
- Physical:
  - Tiredness
  - Dizziness
  - Increased heartbeat

- o Muscle aches

- o Trembling or shaking

- o Dry mouth

- o Sweating or hot flushes

- o Quick and shallow breathing

- o Stomach ache

- o Nausea

- o Insomnia

- o Panic attack

As of yet, research is still unsure about what causes GAD, yet common theories point to the following factors (Mind, 2015):

- *Everyday life and habits*: someone's lifestyle can make them more prone to GAD. This may include exhaustion or stress, money or housing problems.

- *Genetic*: some research suggests people may inherit genetic tendencies to be more anxious.

- *Physical and mental health*: having depression, a long-term physical condition or experiencing chronic pain can make individuals more prone to experiencing anxiety.

- *Drugs and medication*: taking certain prescribed medication (e.g., steroids, anti-malaria medication) or taking street drugs or alcohol can increase vulnerability to anxiety.

In the UK, GAD is generally treated with a mixture of self-help resources, medication and psychological talking treatments (Mind, 2015; NHS, 2016b):

- *Self-help resources*: initially, self-help resources are recommended. These may include relaxation techniques (e.g., yoga, pilates, breathing exercises), patients

working independently from a book or computer programme, or attending a group course (NHS, 2016b, 2016c).

- *Talking therapy*: talking to a mental health professional to uncover causes of the person's anxiety (e.g., cognitive behavioural therapy or applied relaxation; NHS, 2016b; Mind, 2015).

- *Medication*: if self-help resources and talking therapies do not alleviate symptoms, medication may be prescribed (NHS, 2016b). Examples of medication for GAD include selective serotonin reuptake inhibitors, serotonin and noradrenaline reuptake inhibitors, pregabalin and benzodiazepines (NHS, 2016b).

2.1.1.4. Comparison of mental disorders

Next I will compare beliefs about schizophrenia, depression and GAD. Schizophrenia is often seen as the hallmark of mental illness; that is, when the public is asked to describe mental illness, they often give symptoms of schizophrenia (Sartorius & Schulze, 2005). Indeed, schizophrenia (19-35%) is more often perceived as a mental disorder compared to depression (3%), social phobia (4%) and post-traumatic stress disorder (3%; Reavley & Jorm, 2011a). Furthermore, Dahlberg and colleagues (2008) found that 20% of participants labelled symptoms of depression as stress or day-to-day problems. Similarly, GAD is often seen as a personal weakness (World Federation for Mental Health, 2008). Different mental disorders also appear to elicit varying levels of stigma (Reavley & Jorm, 2011b). For example, participants reported that persons with symptoms of schizophrenia would be discriminated against most (74-84%), compared to depression (59-60%) and anxiety disorders (40-56%; Reavley & Jorm, 2011b). One explanation for this difference in stigmatisation is that more severe mental illnesses may elicit more blatantly different or abnormal behaviours; as well, symptoms considered disruptive and different to the norm, which could be subject to greater stigmatisation (Feldman & Crandall, 2007; Jones et al., 1984). One may consider schizophrenia a more severe

disorder with greater possible deviations from the norm. Conversely, Hinshaw (2007) noted that people with less severe mental disorders may be subject to more stigmatisation as they may be seen to have less will power to conceal their illness. Reavley and Jorm's (2011b) findings support the former explanation, as schizophrenia was found to be more stigmatising compared to depression and anxiety disorders.

To the best of the author's knowledge, the present study is novel in two ways: on the one hand, it is the first to examine MHL in relation to GAD and, on the other hand, it is the first to use inferential statistics to compare recognition of, causal beliefs, and help-seeking beliefs between mental disorders. Thus the following hypotheses were proposed:

Hypothesis 1.1: Participants will show significantly greater recognition of schizophrenia compared to depression and GAD.

Hypothesis 1.2: Participants will hold significantly different a) causal beliefs and b) help-seeking beliefs depending on the mental disorder.

2.1.2. Ethnicity

The second aspect that was examined in the current study was ethnic differences in MHL in individuals living in the UK. Phinney (1990) defines ethnicity as "one's ethnic group membership as determined by one's parents' ethnic group or country of origin" (p. 38), and ethnic identity as "an individual's sense of self as member of an ethnic group and the attitudes and behaviours associated with that sense…the major components that have been identified: self-identification as a group member, identification with the group, ethnic attitudes and behaviours" (p. 37).

Individuals from the following ethnicities were compared: Caucasian British, African-Caribbean and South Asian. First, the Caucasian British ethnic group consisted of White Welsh, Scottish, English and Northern Irish individuals. Second, similar to previous studies (Chaturvedi et al., 1993; Bhui et al., 2003), participants were categorised as African-Caribbean

if their family origin was either from West African (e.g., Ghana, Nigeria) or Caribbean (e.g., Jamaica, Trinidad and Tobago) countries. Third, Marshall and Yazdani's (2000) definition of the South Asian ethnic group was followed, namely individuals with a cultural or family background from India, Sri Lanka, Pakistan, Bangladesh or East Africa were included.

These three ethnic groups were chosen, first because African-Caribbeans and South Asians make up the greatest minorities in the UK. The Office for National Statistics (2012) examined the English and Welsh population in 2011 and reported that 5.3% of the population was of an Indian, Pakistani or Bangladeshi background, while 3.4% was of an African or Caribbean background.

The second reason for choosing these ethnic groups is because, as compared to Caucasian British, South Asians and African-Caribbeans demonstrate large cultural differences. South Asian and African-Caribbean populations in the UK tend to be more collectivist than their Caucasian counterparts (Willis, 2012). South Asian and African-Caribbean individuals often use 'we' and 'our' to describe care giving behaviours, while this is less the case in Caucasian British individuals (Willis, 2012). Similarly, regular contact with and reliance on family for social support is high among South Asians and African-Caribbeans compared to Caucasians (Campbell & McLean, 2002).

Third, these three ethnic groups were studied because the literature revealed that the issue of mental illness stigma is raised more among minority than mainstream groups (Anglin et al., 2006; Cheon & Chiao, 2012; Cinnirella & Loewenthal, 1999; Cooper-Patrick et al., 1997; Mishra, Lucksted, Gioia, Barnet, & Baquet, 2009; Van Hook, 1999; Whaley, 1997). On the one hand, patients with a mental disorder from minority groups report greater perceived stigma (Cooper-Patrick et al., 1997; Van Hook, 1999). On the other hand, lay individuals from ethnic minorities report greater stigma towards people with a mental illness (Cheon & Chiao, 2012; Papadopoulos, 2009; Papadopoulos et al., 2002, 2012); including greater endorsement of

stigmatising beliefs such as greater perceived dangerousness (Whaley, 1997) and perceived violence (Anglin et al., 2006) of people with mental illness. Indeed, individuals from African-Caribbean and South Asian background in the UK follow this pattern of higher levels of stigma towards mental illness (Cinnirella & Loewenthal, 1999; Mackenzie, 2006). For instance, a British African-Caribbean lay person being interviewed about the relationship between mental illness and ethnicity stated, "The one thing Black people hate is for anybody to find out that there is any form of mental illness in their families…it's the old taboo subject" (Cinnirella & Loewenthal, 1999, p. 519). The idea that mental illness is a negative reflection of not only the individual but also of the associated social circle is also mirrored in South Asian British individuals (Mackenzie, 2006). Similarly, Marshall and Yazdani (1999) reported that young South Asian women in the UK with a history of self-harm found that honour and shame is central to inability to fulfil familial expectation, especially in regards to the family's reputation in the community.

Fourth and finally, the prevalence of mental disorders and use of mental health services differs between the chosen ethnic groups (Mental Health Foundation, 2007; Nazroo, 1998; NIMHE, 2003; Department of Health, 2010; Weich et al., 2004). Immigrants and minority groups report significant practical barriers to seeking help for mental disorders – such as not knowing about available services (Kayrouz et al., 2014). The Department of Health (2010) asked migrants in the UK what they thought the main health needs of migrants were. They found that 35% of respondents reported mental health issues as a major health issue (these figures varied depending on the type of migrant group: 33% in relation to economic migrants and workers, 40% international students, 60% refugees and 79% asylum seekers).

In 2007, 23% of the British population reported having one psychiatric disorder and 7% reported having two or more (The Health & Social Care Information Centre, 2009). However, compared to Caucasians, Caribbean individuals in the UK are 75% more likely to be diagnosed

with a psychotic disorder (Nazroo, 1998) and individuals with an African-Caribbean background are significantly more likely to be admitted to hospital due to mental illness compared to Caucasian British (Claassen, Ascoli, Berhe, & Priebe, 2005; Care Quality Commission, 2010). It is noteworthy that systemic racism may be contributing to these elevated rates.

While there appear to be more diagnoses of mental disorders in the African-Caribbean population living in the UK, the rates are mixed amongst South Asians (Bhugra & Bhui, 2003; McKenzie, Bhui, Nanchahal, & Blizard, 2008; Nazroo, 2001). Compared to Caucasian British, South Asians show equivalent to slightly elevated rates of schizophrenia and lower rates of affective disorders (Cochrane, 1977; Nazroo, 1998, 2001). One pattern that appears consistent across studies is that of young South Asian women showing elevated rates of suicide (Anand & Cochrane, 2005; Bhugra, Baldwin, Desai, & Jacob 1999; Nazroo, 2001; Raleigh, 1996), with suicide in South Asian women being twice as likely compared to their Caucasian counterparts (Nazroo, 2001).

Furthermore, despite higher prevalence of mental illness, individuals from ethnic minorities use mental health services significantly less than Caucasian British individuals (Smaje & LeGrand, 1997). It has been found that as little as 32% of immigrant individuals reporting stress, anxiety and low mood seek help for these symptoms (Kayrouz et al., 2014). Similarly, Smaje and LeGrand (1997) reported that Pakistani women utilise GP services 30% less than their Caucasian counterparts. Explanations for the difference in mental health care use between mainstream and immigrant populations include language barriers, ethnic minorities' double stigma (i.e., enduring discrimination due to both ethnicity and mental illness) as well as differences in conceptualisation of the illness between patients and practitioners, cultural differences in conceptualisation of symptoms and professionals' lack of knowledge and understanding of these, as well as service users' lack of knowledge of available support services

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(Ahmed & Bughra, 2006; Gary, 2005; Jayaweera, 2014; The Sainsbury Centre for Mental Health, 2002). For example, Jacob, Bhugra, Lloyd, and Mann (1998) found that GPs were significantly less likely to diagnose mental illnesses when patients did not report all symptoms and particularly not psychological symptoms. This is noteworthy as individuals from Asian cultures tend to focus on physical symptoms as opposed to cognitive or psychological symptoms of mental illness (Marsella et al., 1973), providing an explanation for low diagnosis of mental disorders in Asian groups. Thus a better understanding of conceptualisations of mental illness, causes and treatments in different ethnic groups is essential to better shape effective support services.

Returning to the present research, differences in MHL between these ethnic groups will be examined. As described previously, the literature has generally found that European individuals are significantly better at recognizing symptoms of mental disorders (65-100%) compared to Asian and African-Caribbean samples (20-84%; Ayalon & Areán, 2004; Jenkins, 1988; Jorm et al., 2005; Loo et al., 2012; May et al., 2014). It was also demonstrated that Asian and African-Caribbean individuals endorsed social causes in relation to mental illness significantly more compared to individuals of European descent (Dietrich et al., 2004; McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992), while the reverse was the case when examining endorsement of biological factors (McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992). Further, because individuals with an immigrant background perceive a number of barriers to seeking professional help for mental disorders – e.g., lack of knowing about available services, language barriers, or cultural differences in conceptualisation of symptoms (Ahmed & Bughra, 2006; Gary, 2005; Jayaweera, 2014; Kayrouz et al., 2014; The Sainsbury Centre for Mental Health, 2002) – it is likely that endorsing to seek professional help for symptoms of mental illness would be lower in these populations. In sum, as it is likely that these trends would translate to the present sample, it was hypothesised that:

Hypothesis 2.1: Caucasian British participants will show significantly better recognition compared to their South Asian and African-Caribbean counterparts.

Hypothesis 2.2: Compared to the African-Caribbean and South Asian samples, Caucasian British participants will be a) significantly less likely to endorse social causal beliefs and b) significantly more likely to endorse professional help-seeking beliefs.

2.2. Method

2.2.1. Ethics Statement

Ethical approval was obtained from the Brunel University Psychology Research Ethics Committee. Participants provided written informed consent at the beginning of the survey and all responses were confidential and anonymous.

2.2.2. Participants

Caucasian British (N = 72), African-Caribbean (N = 35) and South Asian (N = 50) individuals living in the UK participated in this study. ANOVA and chi-square tests were conducted to compare ethnic group differences on demographic variables (see Table 2.2). Age, familiarity with mental illness and education did not significantly differ between ethnic groups. English skills were significantly different; Tukey HSD post hoc tests indicated that the South Asian sample reported significantly lower English skills than both the Caucasian British and the African-Caribbean samples (Caucasian British – South Asian: p = .02; African-Caribbean – South Asian: p = .009; Caucasian British – African-Caribbean: p > .05). Further, frequencies in gender significantly differed between ethnic groups. Post-hoc chi-square tests revealed that, first, there were significantly fewer male participants in the African-Caribbean compared to the Caucasian British sample [$X^2(1) = 6.81$, p = .007], second, there were also more males in the African-Caribbean compared to the South Asian sample, although this difference only trended towards significance [$X^2(1) = 2.73$, p = .08], and, there was no difference in frequency of male

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participants between the South Asian and Caucasian British samples ($p > .05$). Finally, country of birth significantly differed between ethnic groups (although the UK was the most frequent country of birth across all groups).

Table 2.2. Demographic Variables – Mean, Standard Deviation and one-way between subjects ANOVA and chi-square tests.

	Cultural group	*M*	*SD*	*F*	*df*	*p*
Age	Caucasian British	25.19	10.61	2.06	2, 154	.13
	African-Caribbean	21.49	6.14			
	South Asian	25.06	9.36			
English skills	Caucasian British	4.92	.28	6.30	2, 63	.003
	African-Caribbean	4.90	.44			
	South Asian	4.31	.90			
Familiarity*	Caucasian British	1.26	1.00	1.73	2, 112	.18
	African-Caribbean	1.24	1.09			
	South Asian	.86	1.10			

	Frequencies			X^2	*df*	*p*
Cultural group	Caucasian British	African-Caribbean	South Asian			
Gender						
Male	25	4	13	6.54	2	.04
Female	47	31	37			
Education						
Less than high school	0	0	0	9.01	10	.53
High school graduate	14	10	9			
Some university	28	10	18			
University graduate	14	11	8			
Master degree	13	4	12			
Doctorate	3	0	3			
Country of birth	UK 68	UK 26	UK 26	79.10	22	<.001
	Australia 1	Nigeria 6	India 5			
	Hungary 1	Somalia 2	Pakistan 7			
		Namibia 14	Other 8			

* Familiarity = familiarity with mental disorders.

2.2.3. Procedure

The study was conducted online through a survey-building website. Participants were invited to take part in a study about knowledge and beliefs about mental health. A hyperlink to the survey was distributed through Brunel University's intranet site and psychology participant pool, posters advertising the hyperlink were displayed around the university, and through social networking sites (e.g., Facebook, Pinterest)[2]. Participants recruited through the university's

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[2] A chi-square test revealed no significant differences in frequencies in ethnic group depending on recruitment type (Psychology participant pool: $N_{Caucasian} = 15$, $N_{African-Caribbean} = 10$, $N_{South Asian} = 15$; Other: $N_{Caucasian} = 57$, $N_{African-Caribbean} = 25$, $N_{South Asian} = 35$).

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psychology participant pool received two course credits, while the other participants did not receive compensation. All materials were in English only.

2.2.4. Measures

2.2.4.1. Vignettes

Participants were asked to read three vignettes, each describing a person with symptoms of depression (Jorm et al., 1997a), schizophrenia (Jorm et al., 1997a) or GAD (Leitschuh, 2008) respectively. The vignettes were shortened for the present study. See the modified vignettes in the Appendix.

2.2.4.2. Recognition

After reading each vignette, participants answered the question, "What do you think is going on with the person?" to measure their recognition of the mental disorder presented in each vignette. If participants gave non-mental health-related responses they received a score of '1', any mental illness-related responses (e.g., 'mental disorder') scored '2', and naming the particular mental disorder displayed in the vignette scored '3' (e.g., 'depression' in relation to the depression vignette). Thus, higher scores represented greater recognition.

2.2.4.3. Causal and Help-Seeking Beliefs

After reading each vignette, participants were also posed the following open-ended questions: "What do you think are the causes of his behaviour?" to determine causal beliefs, and "How do you think he could best be helped?" to determine help-seeking beliefs. Content analysis was used to code the responses. According to Rose, Spinks, and Canhoto (2015):

> Content analysis refers to a family of procedures for the systematic, replicable analysis…In essence it involves the classification of parts of [data] through the application of a structured, systematic coding scheme from which conclusions can be drawn about the message content. (p. 1)

Content analysis facilitates the analysis of written and oral communication (Insch, Moore, & Murphy, 1997) and has been used to study a range of social science topics (including gender, culture and violence; Rose et al., 2015). While content analysis has commonly been applied to

analyse written texts and recorded communication – including books, websites, newspapers, speeches, letters (Babbie, 2005; Insch et al., 1997; Rose et al., 2015) – this approach has also been used in relation to first hand data, such as interview or discussion transcripts or open-ended questionnaires (Barker, Rimler, Moreno, & Kaplan, 2004; Blaxter, 1983; Insch et al., 1997; Milberg, Strang, & Jakobsson, 2004).

The key feature of quantitative content analysis is that it systemises the data by coding the data into categories (Holsti, 2011). Some other approaches may reveal the prevalence of a category within the data – for example, thematic analysis has 'conventions' for embodying prevalence by using phrases such as 'the majority of participants' or 'many participants' (Braun & Clarke, 2006, p. 83) – however, content analysis is the only approach where "qualitative data…[is converted] into a quantitative form" (Wilkinson, 2000, p. 434). In this approach, the frequency within each category is calculated and these are often summarized as total or percentage scores (Wilkinson, 2000). Indeed, the majority of the MHL research used content analysis in this manner to analyse their data (Angermeyer et al., 1999; Angermeyer & Matschinger, 2003b; Dahlberg et al., 2008; Goldney et al., 2001; Jorm et al., 1997a, 1997b 1997c; 2005; Riedel-Heller et al., 2005; Wright et al., 2007). The present investigation aimed to take the analysis one step further and to use inferential statistics to compare response categories between mental disorders and between ethnic groups. Similar to previous MHL research (Angermeyer et al., 1999; Angermeyer & Matschinger, 2003b; Dahlberg et al., 2008; Goldney et al., 2001; Wright et al., 2007), the present investigation used inferential statistics to determine differences in response categories between mental disorders and ethnic groups.

The flexibility of content analysis was another reason this approach was chosen. For example, analysis using grounded theory generates codes solely from the data (Braun & Clarke, 2006), which is not practical for the present research as it is based on Jorm and colleagues' (1997a) MHL model. In contrast, content analysis begins with conceptualising the construct

under investigation and identifying the literature from which the research question or hypotheses are developed (Boettger & Palmer, 2010). Researchers develop fixed categories before analysing the data (Boettger & Palmer, 2010), yet retain the opportunity to generate codes from within the data they analyse (Hsieh & Shannon, 2005). That is, researchers generate coding categories from existing theory or research and can also generate new codes for data that could not be coded using the predetermined categories (Hsieh & Shannon, 2005).

Like any methodology, quantitative content analysis has both strengths and limitations. Content analysis lies between the realms of qualitative and quantitative methodology (Insch et al., 1997). This approach has the advantage of generating data that is rich in detail and contextual information – which is generally associated with qualitative research (Insch et al., 1997) – while also enabling the quantification of this data and performing inferential statistical tests. Yet others have questioned the value and meaningfulness of extracting codes and categories from this rich data set (Insch et al., 1997). Another strength is the ability to examine large amounts of data (Holsti, 2011; Rose et al., 2015). Further, content analysis also allows the examination of codes that support as well as contradict existing theory, thus enabling the researcher to extend the literature (Hsieh & Shannon, 2005).

The main limitation of content analysis is that the findings of the analysis depend highly on the codes used to analyse the data and the coders doing so (Holsti, 2011). As the original codes are generated from theory and previous research, the researcher's perspective is clouded by an informed bias (Boettger & Palmer, 2010; Hsieh & Shannon, 2005; Insch et al., 1997; Rose et al., 2015). Although, hypothetically, a strength of content analysis is the fact that the data can give rise to new codes, a researcher's bias makes it more likely for them to focus on concepts that support, as opposed to contradict, the theory (Hsieh & Shannon, 2005). Thus it is vital to examine the biases affecting the research. For the present investigation the researcher's biases from previous theoretical frameworks are explored in the methods section, while biases

from the researcher's personal experience are explored in the discussion.

Returning to the present research, selected words and phrases from the open-ended responses were manually coded. The advantages of manual coding are that it is low-tech and easy to implement, however a disadvantage is that it is time-consuming (Boettger & Palmer, 2010). Categories were recognised as significant in relation to the present data set if at least 5 percent of responses in relation to at least one vignette were coded in this category. Responses were coded as follows: if a participant mentioned a particular response category, it was coded as '1' in that category, whereas if they did not mention a specific category it was coded as '0' in that category. An example response to the causal beliefs question was, "The causes of his behaviour could be a result of a negative change in his life, loss of a friend, relative moving away from home" (P. No. 2447075097). This was coded as follows: Significant life event: 1, Biological: 0, Work or school problems: 0, Loss of a loved one: 1, Low social support: 0, Relationship or family problems: 0, Stress: 0, Personality: 0, and Lifestyle: 0.

2.2.4.3.1. Causal beliefs categories

Next I describe the categories used in relation to perceived causal and help-seeking beliefs. While there are some overlapping causal beliefs categories in the literature, these varied between studies (Angermeyer & Matschinger, 1996, 2003b; Goldney et al., 2001; Joel et al., 2003; Jorm et al., 1997b; Lauber, Nordt, et al., 2003; Link et al., 1999; Matschinger & Angermeyer, 1996; McCabe & Priebe, 2004). Several studies used specific mental disorders or mental illness in general as a category for causal beliefs [e.g., "depression" (Goldney et al., 2001, p. 279); "depressive disorder" (Lauber, Nordt, et al., 2003, p. 97); "psychological problems" (Goldney et al., 2001, p. 279; Joel et al., 2003, p. 68)]. In the present sample, several participants also mentioned this as a cause; however, as this overlaps with recognition of the mental disorder and this was measured separately, I did not feel that it would be relevant to include this as a category for causal beliefs.

The two categories that appeared to be measured most across studies were *stress* (Goldney et al., 2001; Lauber, Nordt, et al., 2003; Link et al., 1999; McCabe & Priebe, 2004) and *significant life events* (Angermeyer & Matschinger, 2003; Jorm et al., 1997b; Lauber, Nordt, et al., 2003; Matschinger & Angermeyer, 1996; McCabe & Priebe, 2004). Some studies separated this from significant events that occurred in childhood ["childhood events" (Jorm et al., 1997b, p. 145; Lauber, Nordt, et al., 2003, p. 97; McCabe & Priebe, 2004, p. 27); "sexual abuse during childhood" (Matschinger & Angermeyer, 1996, p. 311); "having grown up in a broken home, lack of parental care, overprotective parents" (Angermeyer & Matschinger, 1996, p. 318); "wrong upbringing" (Matschinger & Angermeyer, 1996, p. 311); "lack of parental affection" (Angermeyer & Matschinger, 2003, p. 528)]. However, this specification did not emerge in the present data and was therefore not used.

Another category for causal beliefs that was commonly found in the literature pertained to *biological* causes; these were often divided into specific aspects ["inherited, genetic" (Jorm et al., 1997b, p. 145); "chemical imbalance" & "genetic or inherited problem" (Link et al., 1999, p. 1330); "heredity" (Angermeyer & Matschinger, 1996, p. 318, 2003, p. 528; Lauber, Nordt, et al., 2003, p. 97; Matschinger & Angermeyer, 1996, p. 311); "brain disease" (Angermeyer & Matschinger, 1996, p. 318, 2003, p. 528); "disorder of the brain" (Matschinger & Angermeyer, 1996, p. 311); "birth injury" (Angermeyer & Matschinger, 1996, p. 318)]. In the present data, specific aspects of biological causes also emerged (e.g., "Something in the brain is not as it should be", P. No. 2432466326; "likely to be from the amount of neurotransmitters in the brain", P. No. 2369410404; "Chemicals in the brain. It could be genetic", P. No. 2409789959), however the frequency of these was small and therefore they were combined into an overarching category of biological causes.

Another category that emerged from the literature pertained to blaming the person for their mental disorder due to personal attributes – "nervous person" (Jorm et al., 1997b, p. 145),

"weak character" (Jorm et al., 1997b, p. 145), "personality" (McCabe & Priebe, 2004, p. 27), "own bad character" (Link et al., 1999, p. 1330), "unstable personality" and "weak mental constitution" (Matschinger & Angermeyer, 1996, p. 311), "lack of will-power", "exaggerated demands on oneself" and "immoral life style" (Angermeyer & Matschinger, 1996, p. 318). In the present data, participants mentioned a range of concepts that were coded for this category, for example, "insecurities" (P. No. 2454569467), "low self-esteem" (P. No. 2428023834) or "has low confidence therefore feels like a failure" (P. No. 2402124060). This category was defined as *personality* in the present investigation.

Work-related problems was another category that was reported in the literature as a commonly perceived cause for mental illness (Angermeyer & Matschinger, 1996, 2003; Goldney et al., 2001; Matschinger & Angermeyer, 1996). This was found in the present data as well; however, while going through the data, this category was expanded to also include school- or university-related problems. Examples of participant responses included, "maybe not doing his work well" (P. No. 2381139348), "problems at university/school" (P. No. 2369377521), "work/school pressures" (P. No. 2360394845). The higher frequency of school-related problems as a cause is likely due to the high number of participants who were university students or had completed at least an undergraduate degree (79%), and thus this issue would be more relevant to them.

Substance abuse was another category that the literature found as a perceived cause for mental illness (Angermeyer & Matschinger, 2003; Link et al., 1999; Matschinger & Angermeyer, 1996; McCabe & Priebe, 2004). This category was broadened to include lifestyle-related aspects such as "not enough exercise" (P. No. 2340940595), "lack of sleep" (P. No. 2356128809) and "change in lifestyle" (P. No. 2355797699). Consequently, this category was termed *lifestyle*.

Another causal belief that was commonly found in the literature was related to

supernatural causes (McCabe & Priebe, 2004) – e.g., "black magic" and "evil spirits" (Joel et al., 2003, p. 68); "God's will or fate" (Matschinger & Angermeyer, 1996, p. 311). This was originally included as a category as it would have been expected to be seen more in the South Asian and African-Caribbean ethnic groups (Angermeyer & Matschinger, 1999; Hatfield et al., 1996; Lloyd et al., 1998; McCabe & Priebe, 2004; Ohaeri & Fido, 2001; Razali et al., 1996; Sheikh & Furnam, 2000; Suhail, 2005); however, because none of the responses fell in this category (0%) it was excluded.

Other categories of causal beliefs that emerged from the data were *loss of loved one* ("A death of someone close", P. No. 2457823961; "loss/mourning", P. No. 2416281220), *low social support* ("perhaps not having a good social support network", P. No. 2397099533; "social isolation", P. No. 2366986263) and *relationship or family problems* ("Family or breakup in love affair", P. No. 2485588057; "I would look into if everything is ok…[in] family life", P. No. 2430773028).

To sum up the causal beliefs categories that were examined were as follows: significant life event, biological, work or school problems, loss of loved one, low social support, relationship or family problems, stress, personality, and lifestyle. All codes were common across the three mental disorders – except for low social support and stress, which were not found in relation to the GAD vignette.

Weber (1990) urged that when using content analysis, it is vital to assess construct validity (the degree to which a scale's items reflect the construct being measured and encompasses the entirety of the construct; Field, 2009). Thus to measure construct validity in the present analysis, chi-square tests were run, testing associations between *significant life event* and the other categories of causal beliefs (see Table 2.3). Conceptually *significant life events* should not be related with *biological* but be positively associated with the other categories. The results generally followed the proposed trend, indicating that the categories held adequate

construct validity.

Table 2.3. *Significant life event* **in relation to the other categories.**

	Depression	Schizophrenia	GAD
Biological	$p > .05$	$p > .05$	$p > .05$
Work or school problems	$\chi^2(1) = 18.23, p < .001$	$\chi^2(1) = 4.89, p = .04$	$p > .05$
Loss of loved one	$\chi^2(1) = 20.96, p < .001$	$\chi^2(1) = 11.32, p = .001$	$\chi^2(1) = 6.89, p = .008$
Low social support	$\chi^2(1) = 5.84, p = .01$	$\chi^2(1) = 11.32, p = .001$	-
Relationship or family problems	$\chi^2(1) = 29.90, p < .001$	$p > .05$	$p > .05$
Stress	$\chi^2(1) = 4.37, p = .04$	$\chi^2(1) = 32.97, p < .001$	-
Personality	$\chi^2(1) = 25.23, p < .001$	$\chi^2(1) = 2.68, p = .08$	$\chi^2(1) = 26.77, p < .001$
Lifestyle	$\chi^2(1) = 8.48, p = .003$	$\chi^2(1) = 18.23, p < .001$	$p > .05$

2.2.4.3.2. Help-seeking beliefs categories

Similar to causal beliefs, the literature found common categories in regards to help-seeking beliefs, but there was also variation between studies (Angermeyer et al., 1999; Burns & Rapee, 2006; Dahlberg et al., 2008; Goldney et al., 2001; Jorm et al., 1997c; Pescosolido, Martin, Long, Medina, Phelan, & Link, 2010; Riedel-Heller et al., 2005; Speller, 2005; Webster & Fretz, 1978). The categories that were common amongst the literature and the present data were for lay people – including friend or family members – to speak to the person in the vignette (Angermeyer et al., 1999; Burns & Rapee, 2006; Dahlberg et al., 2008; Goldney et al., 2001; Jorm et al., 1997c; Speller, 2005; Webster & Fretz, 1978), for the person in the vignette to see a general practitioner (Angermeyer et al., 1999; Burns & Rapee, 2006; Dahlberg et al., 2008; Goldney et al., 2001; Jorm et al., 1997c; Pescosolido et al., 2010; Riedel-Heller et al., 2005; Webster & Fretz, 1978) and for the person in the vignette to take medication (Dahlberg et al., 2008; Goldney et al., 2001; Jorm et al., 1997c; Pescosolido et al., 2010; Speller, 2005). In regards to the latter category, the type of medication was specified in some studies – e.g., "antidepressants" (Dahlberg et al., 2008, p. 6; Jorm et al., 1997c, p. 234), "antipsychotic agents" (Jorm et al., 1997c, p. 234), or "anti-anxiety agents" (Jorm et al., 1997c, p. 234). However, this degree of specificity did not emerge as a significant category in the present data; instead, the category was broadened to the suggestion of taking any kind of medication to relieve symptoms of mental illness.

The idea of speaking with a medical or psychological professional was a common

category as well, often differentiating between different types of clinicians – including psychologist, psychotherapist, psychiatrist, clinical psychologist, counsellor, community nurse, or social worker (Angermeyer et al., 1999; Burns & Rapee, 2006; Dahlberg et al., 2008; Goldney et al., 2001; Jorm et al., 1997c; Pescosolido et al., 2010; Riedel-Heller et al., 2005; Webster & Fretz, 1978). In the present data, these categories did not emerge as substantive enough so as to include them as separate categories; instead, they were coded under the umbrella term *medical professional*.

Similarly, going to therapy or counselling was another prominent lay suggestion for someone with a mental illness (Dahlberg et al., 2008; Goldney et al., 2001; Jorm et al., 1997c; Speller, 2005). Jorm and colleagues (1997c, p. 234) specified this category into different types of talking therapies – "counselling", "cognitive behavioural therapy", "psychodynamic psychotherapy" and "psychotherapy". This degree of detail was again not prominent in the present data set and therefore the category was broadly termed *going to therapy*.

The final category that was used in the present analysis was the suggestion for the person in the vignette to *change their lifestyle*. This was present in some previous studies, where its definition included, "becoming more physically active, getting out and about more, relaxation, yoga, cutting out alcohol all together" (Dahlberg et al., 2008, p. 6), "diversional activities (e.g., take a holiday, do something enjoyable etc.)" (Goldney et al., 2001, p. 279), "becoming more physically active … getting out and about more, courses on relaxation… meditation or yoga" (Jorm et al., 1997c, p. 234). In the present data, this category also included, "get a job" (P. No. 2503598597), "rest" (P. No. 2373962970), "a healthy diet" (P. No. 2361911095), and "I think general breathing and relaxation exercises would be helpful here. Even something like yoga, to relax him and his mind" (P. No. 2353499703).

Another category that was represented in the literature was to turn to a spiritual leader – e.g., priest or clergyman – or to turn to religion for help – e.g., through prayer (Angermeyer et

al., 1999; Jorm et al., 1997c; Speller, 2005; Webster & Fretz, 1978). This was expected to also emerge as a category in the present data, because turning to religion for support when facing symptoms of mental illness is commonly seen in non-Western samples (Daly et al., 1995; Van Hook, 1999). However, this did not emerge as a significant category in the present sample (Depression: 1%, Schizophrenia: 0%, GAD: 0%).

To sum up, the help-seeking beliefs that were examined in the present study were as follows: see a general practitioner, go to therapy, take medication, see a medical professional, talk to the person in the vignette, and change lifestyle. These codes were found across all three mental disorders. Similar to the causal beliefs, construct validity was tested by examining associations between see a medical professional and the other help-seeking beliefs (see Table 2.4). Conceptually see a medical professional should be significantly positively associated with all other categories, except change in lifestyle. The results generally followed the proposed trend, indicating that the categories held adequate construct validity.

Table 2.4. *See a medical professional* **in relation to the other help-seeking beliefs.**

	Depression	Schizophrenia	GAD
See a general practitioner	$\chi^2(1) = 7.92, p = .003$	$\chi^2(1) = 10.34, p = .001$	$\chi^2(1) = 6.22, p = .007$
Go to therapy	$\chi^2(1) = 6.34, p = .006$	$\chi^2(1) = 4.00, p = .03$	$\chi^2(1) = 11.21, p < .001$
Take medication	$\chi^2(1) = 3.22, p = .06$	$\chi^2(1) = 8.71, p = .002$	$\chi^2(1) = 3.58, p = .04$
Talk to the person in the vignette	$\chi^2(1) = 6.29, p = .01$	$\chi^2(1) = 13.70, p = .001$	$\chi^2(1) = 13.36, p = .001$
Change in lifestyle	$\chi^2(1) = 4.16, p = .06$	$p > .05$	$\chi^2(1) = 18.15, p = .001$

2.2.4.4. Socio-demographic variables

Questions were included to determine participants' age, gender, education and ethnicity. The level-of-contact report by Holmes, Corrigan, Williams, Canar, and Kubiak (1999) was used to determine familiarity with mental illness. This measure consists of twelve items and participants indicated which items they believed applied to them. Items range from *(1) I have never observed a person that I was aware had a severe mental illness* to *(12) I have a severe mental illness*. Their familiarity score was determined by the highest scoring item they agreed with – thus a participant would score '8' if they checked the following items: *(2) I have observed, in passing, a person I believe may have had a severe mental illness, (3) I have*

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watched a movie or television show in which a character depicted a person with mental illness, and *(8) My job involves providing services/treatment for persons with a severe mental illness*.

2.3. Results

2.3.1. Hypotheses 1.1 & 2.1: Recognition

First I examined recognition in relation to the different mental disorders and ethnic groups. A between-within subjects ANOVA was run with recognition as the dependent variable. Type of mental disorder (schizophrenia, depression, GAD) was the within subjects variable, ethnic group (Caucasian British, African-Caribbean, South Asian) the between subjects variable, and finally age (continuous), gender (male: -1, female: 1), education (less than high school: 1, high school graduate: 2, some university: 3, university graduate: 4, master degree: 5, doctorate: 6) and familiarity (continuous) as covariates. The findings showed that none of the control variables were significantly associated with recognition ($p > .05$).

Means and standard deviations of recognition by mental disorder were as follows: Schizophrenia: $M = 1.59$, $SD = .67$; Depression: $M = 1.71$, $SD = .68$; GAD: $M = 1.07$, $SD = .75$. Mauchley's tests revealed that the assumption of sphericity was violated ($p = .02$). Therefore, both the more conservative Greenhouse-Geisser and the more liberal Huynh-Feldt corrected *F*-statistics needed to be consulted (Field, 2009). Both revealed that there was a significant difference in recognition depending on the type of mental disorder (Greenhouse-Geisser: $F(1.81, 135.45) = 4.75$, $p = .001$, Huynh-Feldt: $F(2.00, 149.70) = 4.75$, $p < .001$). Bonferroni post-hoc pairwise comparisons revealed that GAD was recognised significantly less than schizophrenia ($p < .001$) and depression ($p < .001$), while there was no significant difference in recognition of depression and schizophrenia ($p > .05$).

Means and standard deviations of recognition by ethnic group were as follows: Caucasian British: $M = 1.71$, $SD = .43$; African-Caribbean: $M = 1.37$, $SD = .65$; South Asian: $M = 1.45$, $SD = .48$. Recognition also significantly differed between ethnic groups, $F(2, 75) = 4.34$, $p =$

.02). Bonferroni post-hoc pairwise comparisons revealed that Caucasian British participants showed significantly better recognition than African-Caribbean participants ($p = .03$) and the difference in recognition trended towards significance when comparing the Caucasian British and South Asian samples ($p = .09$). On the other hand, the African-Caribbean and South Asian groups did not significantly differ on recognition ($p > .05$). Finally, the interaction effect – between type of mental disorder and ethnic group – on recognition was non-significant ($p > .05$).

2.3.2. Hypotheses 1.2.a & 2.2a: Causal beliefs

Next I examined differences in causal beliefs. As the dependent variables – causal beliefs – were categorical, chi-square tests were run to test differences in causal beliefs across mental disorders. Table 2.5 displays mean percentages of causal beliefs by depression, schizophrenia and GAD, respectively. In response to the depression vignette, participants mentioned *significant life events*, *work or school problems*, *loss of a loved one* and *relationship or family problems* as a cause significantly more often than in relation to the schizophrenia vignette (Table 2.5). *Lifestyle* was also mentioned significantly more often in relation to the schizophrenia than the GAD vignette, however *personality* was mentioned significantly more in relation to the GAD than the schizophrenia vignette (Table 2.5). *Significant life events* and *stress* were mentioned significantly more in relation to the depression than the GAD vignette (Table 2.5). Further, *biological* causes were mentioned significantly differently in relation to the three vignettes, namely most in relation to the schizophrenia vignette, second most in relation to the depression vignette and least in relation to the GAD vignette (Table 2.5). All other associations were non-significant (Table 2.5).

Next I examined causal beliefs in relation to ethnic group. Table 2.5 displays mean percentages of causal beliefs by ethnic group. Chi square tests were run to determine the relationships between ethnic group and the causal beliefs. Endorsement of *significant life event*

as a possible cause differed significantly between ethnic groups in relation to the depression vignette (χ^2 (2) = 9.21, p = .01). Post-hoc chi-square tests revealed that South Asian participants endorsed this causal belief significantly more compared to African-Caribbean (χ^2 (1) = 8.42, p = .004) and Caucasian British (χ^2 (2) = 5.27, p = .02), but the latter two ethnic groups did not significantly differ (p > .05). The endorsement of *loss of a loved one* as a cause in relation to the GAD vignette also trended towards significance (χ^2 (2) = 4.64, p = .10). Inspection of the mean percentages revealed that none of the Caucasian British participants had reported this as a cause, while African-Caribbean participants had endorsed this most. The remaining associations in regards to other causal beliefs and other vignettes were non-significant (p > .05).

2.3.3. Hypothesis 1.2.b: Help-seeking beliefs

Finally, help-seeking beliefs were examined. Table 2.6 displays mean percentages of causal beliefs by depression, schizophrenia and GAD, respectively. *Seeing a GP* was endorsed significantly more in relation to the schizophrenia vignette compared to both other vignettes (Table 2.6). Further, in relation to the schizophrenia vignette, participants endorsed *going to therapy* and *changing one's lifestyle* significantly less than in relation to the GAD vignette, while the reverse was the case in relation to *seeing a medical professional* and *talking to the person* (Table 2.6). The Chi Square tests in regards to other help-seeking beliefs were non-significant (Table 2.6).

Help-seeing beliefs in relation to ethnic group were also examined. Similar to the causal beliefs data, chi-square tests were run to determine the relationships between ethnic group and the causal beliefs. Endorsement of *seeing a GP* differed significantly between ethnic groups (χ^2 (2) = 15.46, p < .001) in relation to the depression vignette. Post-hoc chi-square tests revealed that Caucasian British participants endorsed this help-seeking belief significantly less compared to both African-Caribbean (χ^2 (1) = 11.72, p < .001) and South Asian (χ^2 (1) = 5.96, p = .02) participants, whereas the latter two ethnic groups did not significantly differ (p > .05). The

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

Table 2.5. Mean percentages and differences in causal beliefs between mental disorders and ethnic group.

	Depression	Schizophrenia	GAD	Depression vs Schizophrenia			GAD vs Schizophrenia			Depression vs GAD		
				χ^2	df	p	χ^2	df	p	χ^2	df	p
Significant life events	58.8	45.6	52.8	6.64	1	.02	1.78	1	.18	10.81	1	.001
Caucasian British	52.4	45.8	49.0									
African-Caribbean	41.9	28.6	53.3									
South Asian	75.6	48.6	51.5									
Biological	14.0	31.7	13.5	17.03	1	< .001	15.93	1	< .001	24.97	1	< .001
Caucasian British	19.0	35.6	20.4									
African-Caribbean	12.5	32.1	13.3									
South Asian	7.3	21.6	9.1									
Work / school problems	11.5	2.2	1.2	12.36	1	< .001	0.49	1	.48	3.10	1	.21
Caucasian British	9.5	3.4	2.0									
African-Caribbean	9.4	3.6	0.0									
South Asian	14.6	0.0	0.0									
Loss of a loved one	13.0	5.0	6.7	7.25	1	.001	0.48	1	.49	1.45	1	.21
Caucasian British	14.3	5.1	0.0									
African-Caribbean	9.4	3.6	10.0									
South Asian	19.5	2.7	6.1									
Low social support	4.5	5.0	0.0	0.05	1	.82	-	-	-	-	-	-
Caucasian British	1.6	3.4	0.0									
African-Caribbean	9.4	0.0	0.0									
South Asian	9.8	5.4	0.0									
Relationship / family problems	19.5	4.4	5.5	19.81	1	< .001	0.21	1	.65	3.95	1	.07
Caucasian British	15.9	5.1	2.0									
African-Caribbean	9.4	7.1	3.3									
South Asian	19.5	2.7	6.1									
Stress	15.2	15.0	7.4	3.16	1	.08	0.91	1	.34	11.63	1	.004
Caucasian British	15.9	5.1	10.2									
African-Caribbean	9.7	7.1	3.3									
South Asian	12.2	2.7	3.0									
Personality	30.0	14.4	27.6	0.00	1	.97	4.95	1	.03	0.83	1	.23
Caucasian British	30.2	10.2	26.5									
African-Caribbean	25.0	21.4	20.0									
South Asian	24.4	10.8	42.4									
Lifestyle	7.0	12.2	2.5	-	-	-	9.03	1	.003	-	-	-
Caucasian British	6.3	10.2	2.0									
African-Caribbean	3.1	21.4	6.7									
South Asian	9.8	10.8	0.0									

Table 2.6. Percentages and differences in help-seeking beliefs between mental disorders and ethnic group.

	Depression	Schizophrenia	GAD	Depression vs Schizophrenia			GAD vs Schizophrenia			Depression vs GAD		
				χ^2	df	p	χ^2	df	p	χ^2	df	p
GP	37.5	37.9	23.5	4.10	1	.04	39.69	1	< .001	2.17	1	.14
Caucasian British	16.1	40.7	26.9									
African-Caribbean	55.6	34.9	22.5									
South Asian	30.0	34.3	27.3									
Going to therapy	24.0	22.5	38.0	.51	1	.48	13.20	1	< .001	.62	1	.43
Caucasian British	29.0	33.3	34.6									
African-Caribbean	23.8	27.9	45.0									
South Asian	35.0	20.0	33.3									
Medication	16.0	34.6	10.8	1.70	1	.19	.56	1	.45	.77	1	.38
Caucasian British	22.6	33.3	7.7									
African-Caribbean	19.0	34.9	7.5									
South Asian	15.0	40.0	15.2									
Medical professional	87.2	89.0	84.9	2.16	1	.14	8.31	1	.004	.46	1	.50
Caucasian British	86.2	81.5	80.8									
African-Caribbean	88.9	95.3	90.0									
South Asian	84.2	85.7	84.8									
Talk to the person	34.0	19.2	18.1	.73	1	.39	12.23	1	< .001	1.46	1	.23
Caucasian British	25.8	22.2	11.5									
African-Caribbean	31.7	25.6	27.5									
South Asian	45.0	20.0	15.2									
Change lifestyle	8.7	2.2	4.2	.18	1	.67	20.70	1	< .001	.22	1	.64
Caucasian British	8.0	3.7	7.7									
African-Caribbean	13.6	0.0	5.0									
South Asian	3.8	0.0	3.0									

remaining associations in regards to other help-seeking beliefs and other vignettes were non-significant (p > .05).

2.4. Discussion

The aim of the present study was two-fold: to examine, first, mental disorders and, second, ethnic group in relation to MHL. The findings showed significant differences in MHL between schizophrenia, depression and GAD; however, in relation to ethnic group, the results were mixed.

2.4.1. Mental disorders in relation to MHL

First, variations in MHL in relation to mental disorders are discussed. The schemata for schizophrenia and depression were closely connected with the Western medical model, whereas the schema for GAD appeared to be related to a number of lay frameworks. The results showed that both depression and schizophrenia were recognised significantly more compared to GAD. This empirically confirms previous findings that reported greater frequencies in recognition of schizophrenia compared to other mental disorders (Kohn et al., 2000; Reavley & Jorm, 2011a). However, Reavley and Jorm (2011a) also found that depression was recognised significantly more than schizophrenia. While inspection of the means in the present data shows a similar trend, this was not found to be significant.

Next, I examined causal beliefs in relation to mental disorders. First, biological causes were mentioned significantly more in relation to schizophrenia compared to the other two mental disorders, which is in line with psychopathological theories that stress hereditary or genetic causes for schizophrenia to a greater extent than depression and GAD (Mind, 2012c, 2014; NHS, 2014c, 2014e). Second, participants mentioned life events (work or school problems, loss of a loved one, relationship or family problems) significantly more in relation to depression than schizophrenia. Similarly, this is in line with psychopathological causal theories that highlight life events as causes in relation to depression more than schizophrenia (Mind, 2012c, 2014; NHS, 2014c, 2014e). Although psychopathological theories also emphasize life

events as triggers or causes of GAD (Mind, 2015), this was not mirrored in the present findings. This is likely as participants showed lower awareness and understanding of GAD compared to the other two mental disorders. Instead participants endorsed *personality* significantly more in relation to GAD compared to schizophrenia. Alongside the lower recognition of GAD, this indicates that participants were less likely to perceive GAD as a mental health issue.

Next I examine participants' help-seeking beliefs in relation to mental disorders. First, seeing a GP was endorsed more for symptoms of schizophrenia than depression and GAD. This finding follows the notion that schizophrenia is often perceived as the hallmark of mental illness (Sartorius & Schulze, 2005) and as such is often perceived as a more serious issue. In the present sample symptoms of schizophrenia warranted the endorsement of seeking help from a GP. Second, the remaining help-seeking beliefs did not differ between schizophrenia and depression; this is likely as participants were more familiar with both these mental illnesses compared to GAD. Third, endorsement of most remaining help-seeking beliefs differed significantly between GAD and schizophrenia – with greater agreement to go to therapy and change one's lifestyle for symptoms of GAD compared to schizophrenia, but lesser approval to see a medical professional and to talk to the person in relation to GAD compared to schizophrenia. These lay beliefs are in line with clinical advice, which promotes that patients utilise self-help resources and relaxation strategies for symptoms of GAD (Mind, 2015; NHS, 2016b). They are also in line with clinical advice for symptoms of schizophrenia, which rarely recommends self-help strategies for symptoms of schizophrenia and instead suggest the need for medical attention (Mind, 2012a, 2014; NHS, 2015).

2.4.2. Ethnicity in relation to MHL

Next, ethnic group differences in MHL are examined. Overall, I found some support for ethnic group differences between the Caucasian British and the South Asian and African-Caribbean samples. The results were in line with the notion that Western individuals held schemata about mental illness that were rooted in the medical model, while non-Western

individuals displayed schemata that were connected to social factors.

First, the results showed that ethnic group was a significant predictor of recognition in most cases, with Caucasian British showing significantly better recognition compared to their African-Caribbean participants and this association trending towards significance in relation to the South Asian sample. This is in line with previous cross-cultural literature that found that European individuals were significantly better at recognizing symptoms of mental disorders than their Asian and African-Caribbean counterparts (Ayalon & Areán, 2004; Jenkins, 1988; Jorm et al., 2005; Loo et al., 2012; May et al., 2014).

Second, causal beliefs between ethnic groups were compared. The results showed that in relation to the depression vignette, South Asian participants reported *significant life event* as a possible cause significantly more often compared to both other ethnic groups and, similarly, in relation to the GAD vignette the endorsement of *loss of a loved one* trended towards significance, with the African-Caribbean and South Asian samples endorsing this as a possible cause more than the Caucasian British sample. This lends some support to previous findings that more collectivist cultures are more likely to draw on social causal theories for mental disorders (Dietrich et al., 2003; McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992).

Third, help-seeking beliefs between ethnic groups were compared. The results showed that Caucasian British participants were significantly less likely to suggest seeing a GP in relation to the depression vignette compared to both the African-Caribbean and the South Asian samples. This is contrary to McCabe and Priebe's (2004) findings, namely that Bangladeshi patients in the UK were significantly less likely to want professional help of any kind compared to Caucasian and African-Caribbean British samples. This is likely because Caucasian British participants were more likely to suggest seeing a mental health specialist in relation to symptoms of mental illness than participants from the other two ethnic groups. This difference is notable and future studies should examine knowledge about mental health support systems and how this is related to endorsement of professional help for symptoms of mental illness.

2.4.3. Strengths, limitations and future directions

The current study was novel in several ways. First, in contrast to many studies focusing only on depression and schizophrenia (Angermeyer & Dietrich, 2006; Dahlberg et al., 2008; Dietrich et al., 2004; Furnham & Hamid, 2014; Jorm, 2000; Jorm et al., 1997a, 1997b, 1997c; Lauber et al., 2001; Lauber, Nordt, et al., 2003; Riedel-Heller et al., 2005; Wright et al., 2007), the current study also examined MHL in relation to GAD. This allowed greater insight into the public's knowledge and beliefs about GAD, a mental disorder whose prevalence worldwide is high (Kessler et al., 2005; The World Health Report, 2001a). Furthermore, the current study empirically compared aspects of MHL between schizophrenia, depression and GAD. Other studies comparing MHL between mental disorders take qualitative approaches, comparing percentages of responses (Dietrich et al., 2004; Jorm et al., 1997a, 1997b, 1997c; Lauber et al., 2001; Lauber, Nordt, et al., 2003; Reavley & Jorm, 2011a; Riedel-Heller et al., 2005; Wright et al., 2007), while the present study allowed empirical comparison between mental disorders. Indeed, the current findings suggest the need to focus more on GAD in order to raise greater awareness of this mental disorder, as most mental health awareness campaigns are either general or focus on schizophrenia or depression (e.g., Mental Health Foundation, n.d.; Mind, 2016).

A further strength of the current study was that it statistically compared MHL between ethnic groups in the UK, as few studies have empirically examined MHL between ethnic groups in the UK (e.g., McCabe & Priebe, 2004). Overall, the current study gave greater insight into similarities and differences in MHL between ethnic groups in the UK.

The present study necessarily also presented limitations. First, researcher bias is a notable concern in qualitative research (Boettger & Palmer, 2010; Hsieh & Shannon, 2005; Insch et al., 1997; Johnson, 1997; Rose et al., 2015). Johnson (1997, p. 284) explained that: "researcher bias tends to result from selective observation and selective recording of information, and also from allowing one's personal views and perspectives to affect how data are interpreted". In the

methodology section, it was described how the literature influenced the selection and development of the causal beliefs and help-seeking categories. It is good practice to provide a summary of the researcher's personal background and how it may have affected the research (Johnson, 1997): I am a European national who has spent the majority of my childhood living in Asian countries. As such I have experienced, first hand, similarities and differences of everyday life in different cultures. This lifestyle engendered me to have more of a culture-free perspective and may have made me less susceptible to code the present data according to cultural prejudices. I have further volunteered and worked in the health care sector for several years, with greater experience of working with individuals diagnosed with schizophrenia or depression as compared to anxiety disorders. Thus, because I am more familiar with the former mental disorders, my knowledge and personal experience with schizophrenia and depression as well as my assumptions about GAD may have had an impact on the coding process. In order to minimise these possible biases, I re-examined the data after it had been coded, ensuring the responses were assigned the appropriate categories.

Another limitation of the present study is that the definitions of the ethnic groups were broad. For example, Nazroo (1998) found significant differences in prevalence of depressive neuroses between South Asian and Caucasian women, yet found similar rates between Pakistani and Caucasian women. This indicates the presence of ethnic-specific phenomena, highlighting the importance of distinguishing between subgroups. Furthermore, Agyemang, Bhopal, and Bruijnzeels (2005) reviewed terms for populations of African origin and particularly discouraged the combination of African and African-Caribbean populations. Thus the broadly defined ethnic groups may have played a part in the low number of significant associations found. A further limitation stems from the low number of participants per ethnic group, reducing the power of the statistical analyses.

Third, responses were coded into the causal beliefs and help-seeking beliefs categories by a single person, producing possible coding error. Although the literature promotes inter-rater

reliability, this is not always practiced (e.g., Loo et al., 2012). As the current study produced strong results in the associations between MHL and mental disorders, it appears this did not detract from the findings.

Finally, another limitation stems from the recognition scale that was used, which was a reflection of knowledge of mental disorders. Future research may want to use a more detailed knowledge scale to be able to discriminate between categorizing someone as ill as opposed to knowing what is going on with the person.

2.4.4. Conclusion

The present study found that MHL differed significantly between schizophrenia, depression and GAD and also varied in some respects between ethnic groups. Most notably the results showed that GAD was recognised least compared to the other mental disorders. Further, causal beliefs and help-seeking beliefs differed most between GAD and schizophrenia – reflecting that participants were more likely to frame schizophrenia as a mental health issue, while GAD was perceived more as an everyday concern. An abundant number of studies have examined MHL in regards to specific mental disorders, or compared several disorders (Dahlberg et al., 2008; Dietrich et al., 2004; Furnham & Hamid, 2014; Jorm, 2000; Jorm et al., 1997a, 1997b, 1997c; Lauber et al., 2001; Lauber, Nordt, et al., 2003; Reavley & Jorm, 2011a; Riedel-Heller et al., 2005; Wright et al., 2007), and only recently overall MHL literacy has been studied (O'Connor & Casey, 2015). The next study of the present dissertation will follow this trend and will also examine overall MHL.

The present study also found some differences in MHL between ethnic groups living in the UK. For instance, recognition was better in most cases in Caucasian British compared to South Asian or African-Caribbean participants, some social factors as a cause for mental illness were endorsed more amongst South Asian and African-Caribbean compared to Caucasian British participants, and furthermore, seeing the GP was suggested more by South Asian or African-Caribbean participants compared to Caucasian British. These results supported the

notion that Western individuals hold schemata about mental illness that are greatly shaped by the Western medical model (in relation to recognition of symptoms, causes and treatments). On the other hand, the Western medical framework was less connected to mental illness schemata in non-Western individuals and, indeed, social factors were more pertinent. Overall, however, the results relating to the ethnic group comparisons left questions unanswered, therefore warranting further exploration. The following studies will focus more deeply on the importance on cultural differences as well as cultural variables in explaining differences in beliefs about mental illness. As discussed in the limitations, the ethnic groups that were examined in the present study were possibly too broad; therefore, in all of the following studies, I compared individuals of Western European and Indian heritage.

3. The Mental Health Literacy Model and Collectivism

In Study 1, MHL was compared across ethnic groups in the UK and, similarly, a number of studies have compared MHL cross-culturally or across ethnicities in a particular culture (Dietrich et al., 2004; Jorm et al., 2005; Loo et al., 2012; May et al., 2013; Narikiyo & Kameoka, 1992; Sheikh & Furnam, 2000). The literature examining variables that explain cultural variation in MHL or aspects of it is rare (for example, in relation to professional help-seeking beliefs, the following cultural variables have been examined: Asian values, Wong et al., 2010; interpersonal harmony, Kuo et al., 2007; individualism-collectivism, Tata & Leong, 1994). Hence, the present study aimed to explain cross-cultural variation in MHL by investigating collectivism as a continuous variable.

Furthermore, MHL, on a holistic level, has generally been studied from a qualitative approach (Dietrich et al., 2004; Jorm, 2000, 2011; Jorm et al., 1997a, 1997b, 1997c; Lauber et al., 2001; Lauber, Nordt, et al., 2003; Reavley & Jorm, 2011a; Wright et al., 2007), whereas individual aspects of MHL have been studied quantitatively (Atkinson, Worthington, Dana, & Good, 1991; Kuo et al., 2007; O'Connor, Casey, & Clough, 2014; Tata & Leong, 1994; Yeh, 2002). To the best of my knowledge, a combined model of MHL has not been tested quantitatively. In the present study I proposed and tested a mediational model of MHL that is moderated by cultural background (see Figure 3.1).

3.1.1. European Americans versus Indians

In the present study, we compared European Americans with Indians from India. Following on from the reasoning in the previous chapters, these two cultures were chosen, first, because these cultures vary significantly along the primary value dimension that is examined in the current study – collectivism (Hofstede, 1980, 2001). Hofstede and colleagues (2010) report that India scores '48', while the USA scores '91' on the individualism-collectivism scale, with lower scores indicating greater collectivism.

Figure 3.1. Proposed Mental Health Literacy model (with corresponding research question and hypotheses)
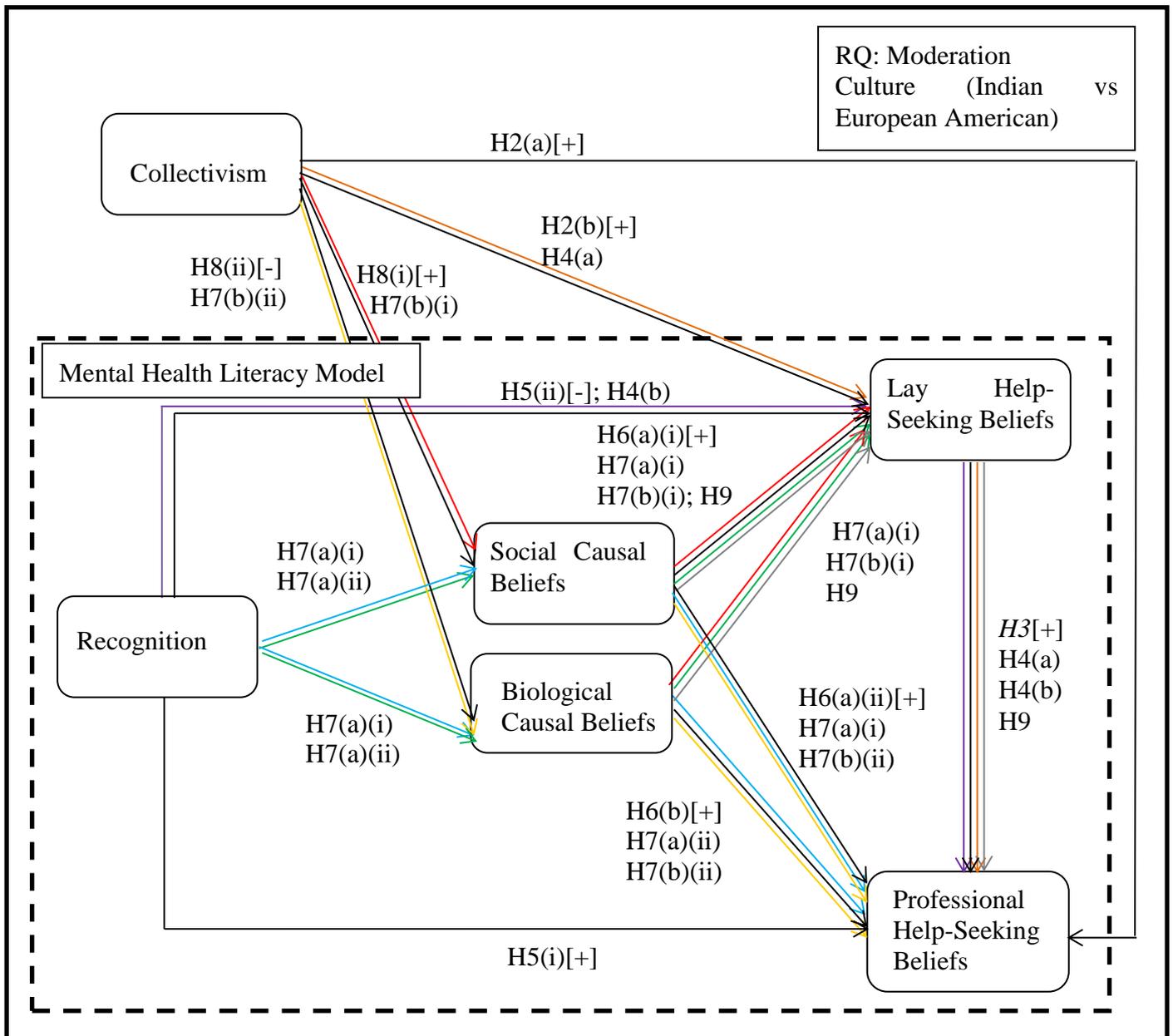
Second, these two cultures were selected because stigma towards people with a mental

illness particularly in India has been shown to be high (Abdulla & Brown, 2011; Thara &

Srinivasan, 2000; Vijayalakshmi et al., 2013; Weiss et al., 2001). In the Indian culture,

individuals with a mental disorder are often shunned by their community (Shankar et al., 2006).

Mental illness may pose as a hindrance to being able to fulfil one's roles and duties and is

thought to affect family relationships – for example, making it difficult to find a marriage

partner for oneself or family members (Chaudhuri, 2006; Shankar et al., 2006; Weiss et al.,

2001). Also, to the best of my knowledge, MHL has not been previously compared cross-culturally in India and the USA.

Third, these cultures were studied because they differ in their availability of mental health facilities. The World Health Organisation (2011a, 2011b) reported that per 100,000 people in India, there are 0.33 mental health outpatient facilities, 0.30 psychiatrists, and 0.05 psychologists, whereas in the USA these figures were 1.95, 7.79, and 29.0, respectively. As clinical mental health facilities are more accessible in the USA, they are seen as viable solutions to managing symptoms of mental health. On the other hand, because close to 75% of the Indian population resides in rural areas – lacking satisfactory primary health care – religious leaders and traditional healers are seen as the main resource for treatment of both physical and mental disorders (Khandelwal et al., 2004; Shankar et al., 2006) and the belief that visiting traditional healers or religious leaders will alleviate mental illness is common in both rural and urban communities (Ganesh, 2011; Kishore, Gupta, Jiloha, & Bantman, 2012).

3.1.2. Hypotheses

The purpose of the current study was fourfold: a) to validate measures of MHL cross-culturally, b) to examine the MHL model quantitatively, c) to investigate cross-cultural differences in the MHL model, and d) to examine collectivism – conceptualised as a continuous variable and orthogonal from individualism – as a predictor of MHL. Below I outline the research question and hypotheses that were proposed and remind the reader of their respective supporting literature (see Figure 3.1).

Large cultural differences exist in beliefs and knowledge about mental illness, with Western cultures showing greater medical knowledge of mental disorders and lesser stigma towards mental illness compared to non-Western populations (Angermeyer & Dietrich, 2006; Ayalon & Areán, 2004; Jenkins, 1988; Jorm, 2000; Jorm et al., 2005). Study 1 showed that Western schemata of mental illness are greatly rooted in the Western medical model, while non-Western schemata are connected to a range of lay frameworks and particularly to social

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variables. Thus, it is predicted that this will translate to a cross-national setting, and these type of schemata will guide aspects of MHL (i.e., recognition, causal and help-seeking beliefs). Therefore, the following research question was examined:

RQ: How will participants' cultural background (European American versus Indian)

moderate the MHL model?

The majority of the literature investigating beliefs about help-seeking for mental disorders has focused on seeking professional as opposed to lay help (Kuo et al., 2007; Tata & Leong, 1994; ten Have et al., 2010). Jorm and colleagues (1997c) found that the public tends to prefer seeking help from more general health practitioners compared to specialist help. I developed a new professional help-seeking beliefs measure and tested its construct validity (the degree to which a scale's items reflect the construct being measured and encompasses the entirety of the construct; Field, 2009). I hypothesized that:

H1(a): The professional help-seeking beliefs measure developed in the current study will

be valid (i) across cultures and (ii) between mental disorders.

Collectivist individuals tend to value in-group relations and seeking advice from the in-group (Hofstede, 1980, 2001; Shulruf, Hattie & Dixon, 2007), indicating that collectivists would be more inclined to seek help in general, both from lay and professional sources. Along these lines, Kuo and associates (2007) found that individuals who reported greater interpersonal harmony – belief of social cooperation, familial support and unity – were more likely to positively endorse seeking professional psychological help. They inferred that individuals endorsing interpersonal harmony perceived the psychological relationship as nurturing, safe, and trustworthy. Collectivism is linked with an interdependent self-construal – the perception that the self is embedded in important social relationships (Markus & Kitayama, 1991). Yeh (2002) investigated interdependent self-construals in relation to beliefs about going to counselling and found that greater endorsement of interdependent self- construal predicted more positive beliefs about seeking professional help. These results indicate that individuals

who placed greater value on relationships and connectedness tended to have more positive beliefs about professional psychological help-seeking. Thus, it is viable to propose that this association would translate to the cultural-level, namely, that greater collectivism would be associated with greater endorsement of seeking professional help for symptoms of mental illness. Indeed, Tata and Leong (1994) found that greater endorsement of collectivism was related to more positive beliefs about professional psychological help-seeking. A limitation with this study is that it conceptualized collectivism as one pole along a unipolar individualism-collectivism dimension. However, research generally finds that individualism and collectivism are two orthogonal dimensions (see Freeman & Bordia, 2001). The present study conceptualized collectivism as orthogonal to individualism, and so I predicted that:

H2(a): Greater collectivism will be associated with more positive professional help-seeking beliefs.

As only a minority of individuals with symptoms of mental illness seek professional help, it is even more important for them to seek help from other sources (Jorm, 2000). Indeed, individuals with symptoms of mental illness look for support from a wide range of informal sources (Chadda, Agarwal, Singh & Raheja, 2001; Cooper-Patrick, Powe, Jenckes, Gonzales, Levine & Ford, 1997; Penny, Newton & Larkin, 2009; Shankar, Saravanan & Jacob, 2006; Van Hook, 1999). Individuals with a mental illness draw informal support primarily from in-group members (i.e., family members, friends or religious leaders; Daly, Jennings, Beckett & Leashore, 1995; Van Hook, 1999). In the present study we consider lay help for mental illness as seeking help or advice from a non-medical professional – e.g., family, friends, spiritual leader – as well as engaging in an activity with the aim to reduce symptoms of mental illness – e.g. taking herbs, doing exercise or going on holiday. Therefore, in the present study I also developed a lay help-seeking beliefs measure and hypothesized that:

H1(b): The lay help-seeking beliefs measure developed in the current study will be valid

(i) across cultures and (ii) between mental disorders.

Jorm and colleagues (1997c) compared members of the public with medical professionals in their beliefs about mental illness and found that the public tended to rate lay help – close friends, herbalists or taking vitamins or minerals – as more helpful. Jorm (2000) reported that individuals with a mental disorder were more likely to seek professional help if their friends and family members positively endorsed this. This notion is likely to be even more so the case in India, because more collectivist individuals tend to orient themselves towards the in-group, as opposed to the out-group, (Oyserman et al., 2002), and thus professional help-seeking is likely to be viewed more positively if the in-group – i.e., family or friends – endorse this as well. Therefore, it was proposed that:

H3: More positive lay help-seeking beliefs will significantly predict more positive professional help-seeking beliefs. Moreover, this relationship will be stronger in the Indian as opposed to the European American sample.

Preference for and degree of use of lay help for symptoms of mental illness varies cross-culturally (Van Hook, 1999). Because collectivists tend to seek help and support from the in-group, it is reasonable to surmise that more collectivist individuals would be more likely to use lay sources of help. Indeed, in more collectivist cultures, mental illness is perceived as a communal concern (Sanchez & Gaw, 2007) and specifically in India the primary responsibility for the care of someone with a mental illness lies with the family (Khandelwal et al., 2004). Therefore, it was hypothesized that:

H2(b): Greater collectivism will be associated with more positive lay help-seeking beliefs.

Furthermore, individuals faced with symptoms of mental illness seek support from a range of informal sources before seeking professional help (Cooper-Patrick et al., 1997; Van Hook, 1999). Patients who have sought help for their mental illness report that if a friend or family member endorsed professional help they were more likely to seek support from a professional (Penny et al., 2009). Similarly, in rural areas in India, traditional healers are seen as the main source of help for physical and mental health issues in a village and traditional

healers would make the decision to seek a medical professional when they felt it necessary (Shankar et al., 2006). This indicates a positive relationship between lay and professional help-seeking beliefs. Recall that we proposed that collectivism positively predicted both professional help-seeking beliefs and lay help-seeking beliefs; it was further predicted that:

H4(a): *Collectivism will be indirectly associated with professional help-seeking beliefs through lay help-seeking beliefs, namely greater collectivism will be associated with more positive lay help-seeking beliefs, which in turn will be related with more positive professional help-seeking beliefs.*

Another aspect of MHL is recognition of mental disorders, which tends to be poor amongst members of the public (Angermeyer & Dietrich, 2006; Dahlberg, Waern & Runeson, 2008; Jorm et al., 1997a, 2000; Lauber, Nordt, Falcato & Rossler, 2003). Cultural differences are evident in the public's recognition of mental disorders, with European individuals being significantly better at recognizing symptoms of mental disorders (65-78%) than their Asian and African counterparts (20-26%; Ayalon & Areán, 2004; Jenkins, 1988; Jorm et al., 2005). Vijayalakshmi and colleagues (2013) found that 81% of a rural, lay, Indian sample reported that they had no previous contact with mental illness. However, as the Indian national prevalence rate of mental illness is estimated at 5.8% (World Health Organisation & Wonca, 2014), Vijayalakshmi and colleagues' (2013) findings indicate a low level of awareness and psychiatric knowledge about mental disorders.

Recognition of mental illness is further linked with the other aspects of the MHL model. Better knowledge about mental disorders in general is a good indicator of knowledge about treatment options and beliefs about causes of mental disorders (Jorm, Korten, Jacomb, Christensen, Rodgers & Pollitt, 1997b; Lauber et al., 2003; Wright, Jorm, Harris & McGorry, 2007). Labelling symptoms as a mental illness is associated with identifying the need to seek professional help and, indeed, greater endorsement of seeking help from a professional (Lauber et al., 2003; Wright et al., 2007). Further, better recognition of mental illness is related to lesser

endorsement of lay coping strategies – such as drug use (Wright et al., 2007). Labelling symptoms as a mental disorder may activate a schema that outlines the type of action to take (Jorm, 2011), that is, better knowledge about mental disorders would encourage a preference for professional compared to lay help. Thus the following hypotheses were proposed:

H5: Better recognition of mental disorders will predict (i) more positive professional help-seeking beliefs, and (ii) more negative lay help-seeking beliefs.

Also recall that the literature has indicated that there is a strong positive relationship between lay and professional help-seeking beliefs (Cooper-Patrick et al., 1997; Penny, 2009; Shankar et al., 2006; Van Hook, 1999). Therefore, I also hypothesized that:

H4b: The MHL model will display indirect effects between recognition and professional help-seeking beliefs through lay help-seeking beliefs.

A further facet of MHL concerns beliefs about the causes of symptoms of mental disorders. Psychopathological models draw on social and biological factors when explaining causes of disorders. In the present study a social and biological causal beliefs measure was developed and therefore it was hypothesized that:

H1(c): The social and biological causal beliefs measure developed in the current study will be valid (i) across cultures and (ii) between mental disorders.

Greater endorsement of both biological and social causes of mental illness reflects better knowledge of mental illness and therefore identification of the need to seek help from a professional (Atkinson et al., 1991; Chen & Mak, 2008; Jorm et al., 1997b; Williams & Healy, 2001). In line with this, Chen and Mak (2008) investigated the relationship between beliefs about causes and professional help-seeking for symptoms of mental illness and found that greater endorsement of social and biological causal beliefs was positively related to the likelihood of seeking professional help. The relationship between causal beliefs of mental illness and beliefs about lay help has not been examined. I proposed that individuals who believe that mental illness is due to social causes would also be more likely to endorse reaching

out to the social environment to manage these symptoms. On the other hand, individuals who believe that mental illness has biological causes would see lay help as an irrelevant versus professional help as a relevant source of knowledge. Hence, it was predicted that:

H6(a): Individuals who more strongly endorsed social causal beliefs would hold more positive (i) lay and (ii) professional help-seeking beliefs.

H6(b): Individuals who more strongly endorsed biological causal beliefs would hold more positive professional help-seeking beliefs.

Further, Jorm and associates (1997b) found an association between recognition and causal beliefs of mental illness. For instance, they found that participants who correctly recognized symptoms of schizophrenia were more likely to cite genetic or inherited factors as causes. As research has found a significant association between recognition of mental disorders and causal beliefs (e.g., correct recognition of symptoms of schizophrenia was significantly associated with greater endorsement of genetic or inherited factors as a cause; Jorm et al., 1997b), it was proposed that:

H7(a): The MHL model will show the following significant indirect effects: better recognition will be related to, first, greater endorsement of social causal beliefs, which in turn will predict more positive (i) lay and (ii) professional help-seeking beliefs, and, second, greater endorsement of biological causal beliefs, which in turn will predict more positive professional help-seeking beliefs.

Endorsement of causal beliefs also varies between cultures (Narikiyo & Kameoka, 1992; Sheikh & Furnham, 2000); for example, individuals from some Asian or African cultures may attribute causes of mental disorders to supernatural phenomena (Ohaeri & Fido, 2001; Razali, Khan & Hasanah, 1996; Sheikh & Furnam, 2000; Suhail, 2005), whereas in Western cultures such attributions are less prevalent (Angermeyer & Matschinger, 1999). The public worldwide tends to favour social causes of mental illness to biological ones (Angermeyer & Dietrich, 2006; Beck, Matschinger & Angermeyer, 2003; Jorm, 2000), yet cultural differences in this respect

are also evident (Dietrich, Beck, Bujantugs, Kenzine, Matschinger & Angermeyer, 2004; Narikiyo, & Kameoka, 1992; Schnittker, Freese & Powell, 2000; Sheikh & Furnam, 2000; Speller, 2005). For instance, Narikiyo and Kameoka (1992) found that Japanese American students at American universities reported greater agreement with social causes and lesser endorsement of biological causes for symptoms of mental illness compared to their European American counterparts. Similarly, Dietrich and associates (2003) investigated causal beliefs of mental disorders cross-culturally and found that Russian and Mongolian participants tended to attribute the causes of mental illness significantly more to the family than their German counterparts. Characteristics of collectivism would indicate that collectivists would be more likely to attribute causes of mental illness to the community. Indeed, both Narikiyo and Kameoka's (1992) and Dietrich and associates' (2003) findings support this notion, because, Russians and Mongolians compared to Germans and, similarly, Japanese Americans compared to European Americans, tend to be more collectivist (Hofstede, 1980, 2001). Unfortunately, collectivism has not been measured as a continuous variable in relation to causal beliefs (Dietrich et al., 2004; Narikiyo & Kameoka, 1992). Nonetheless, it is likely that this association will translate and therefore it is proposed that:

> *H8: Greater collectivism will be associated with greater endorsement of (i) social and*
> *less endorsement of (ii) biological causal beliefs.*

Recall that I predicted that social causal beliefs would be significantly positively associated with lay and professional help-seeking beliefs, while biological causal beliefs would be significantly positively related to professional help-seeking beliefs. It was therefore also hypothesized that:

> *H7(b): The MHL model will show the following significant indirect effects: first, greater*
> *collectivism will be associated with greater endorsement of social causal beliefs,*
> *which in turn will predict greater endorsement of both (i) lay and (ii) professional*
> *help-seeking beliefs; and, second, lesser collectivism will be associated with*

greater endorsement of biological causal beliefs, which in turn will predict

greater endorsement of professional help-seeking beliefs.

Finally, also recall that the literature indicated a strong positive relationship between lay and professional help-seeking beliefs (Cooper-Patrick et al., 1997; Penny, 2009; Shankar et al., 2006; Van Hook, 1999). Therefore, it was also predicted that:

H9: The MHL model will show the following significant indirect effect: greater endorsement of social causal beliefs will be associated with more positive lay help-seeking beliefs, which in turn will be associated with greater endorsement of professional help-seeking beliefs.

3.2. Method

3.2.1. Ethics Statement

Ethical approval was obtained from the Brunel University Psychology Research Ethics Committee. Participants provided written informed consent at the beginning of the survey and all responses were confidential.

3.2.2. Participants and Procedure

The study was conducted online through a survey-building website. Participants were invited to take part in a study about knowledge and beliefs about mental health. All materials were in English only. A hyperlink to the survey was distributed through the university's intranet site, social networking sites, and the main participant base was recruited through Amazon's Mechanical Turk[3], where participants were offered $0.30 upon completion of the survey (IP addresses were inspected to ensure there were no multiple entries).

European Americans currently living in the USA ($N = 100$) and Indians currently living in India ($N = 108$) were invited to participate in this study. Ipeirotis (2010) found that 52% of US-based MTurk workers have a household income between $25,000-75,000/year while 55%

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[3] 98% of participants were recruited through MTurk.

Indian MTurk workers declared an income of $10,000/year. MTurk workers from India are more often male, younger, more highly educated and more likely to report relying on the income from MTurk than their counterparts from the USA (Ross, Zaldivar, Irani, & Tomlinson, 2009). In regards to the present sample, I conducted chi-square tests and *t*-tests of demographic variables with culture as a group variable to identify mean differences (see Table 3.1). The Indian sample was significantly younger, more educated and was made up of significantly more men than the European American sample. The majority of the Indian sample identified themselves as Hindu, while the European American sample was divided between identifying themselves as Christian and non-religious.

3.2.3. Measures

Socio demographic variables – i.e., age, gender, familiarity, education – were measured in the same way as in Study 1, thus please refer to Chapter 2 for details.

3.2.3.1. Collectivism

This was measured with the collectivism sub-scale of Sivadas, Bruvold, and Nelson's (2008) 14-item short-form of the vertical-horizontal collectivism-individualism scale. Items were rated on a 5–point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), thus higher scores reflected greater collectivism. A sample item includes "My happiness depends very much on the happiness of those around me". To increase reliabilities, I collapsed across the vertical and horizontal dimensions so that 8 items measured collectivism (European Americans: α = .82, Indians: α = .84).

Table 3.1. Demographic Variables – Means, Standard Deviations, chi-square and *t*-test tests.

	Cultural group	*M*	*SD*	*t*	*df*	*p*
Age	European American	34.78	13.13	2.32	206	.007
	Indian	30.90	10.78			
		Frequencies		X^2	*df*	*p*
Cultural group		European American	Indian			
Gender	Female	67	41	14.08	1	.001
	Male	41	64			
Education	Lower	54	19	23.04	1	.001
	Higher	51	80			
Religion	Christian	19	49	305.55	6	.001

Muslim	15	0
Jewish	0	2
Hindu	89	1
Buddhist	0	2
Non-religious	1	35

3.2.3.2. MHL measures

Participants were asked to read the same three vignettes as in Study 1 (see Chapter 2 for details). Recognition was also measured in the same manner as in Study 1 (see Chapter 2 for details).

After reading the vignettes, participants were also presented with the causal beliefs, lay help-seeking beliefs and professional help-seeking beliefs measures developed in the present study. The items for these measures were chosen through inspection of the results in Study 1 as well as examination of studies that had investigated MHL using qualitative approaches (Angermeyer & Dietrich, 2006; Ayalon & Arean, 2004; Dahlberg et al., 2008; Dietrich et al., 2004; Jorm, 2000; Jorm et al., 1997a, 2006; Peluso & Blay, 2004; Wright et al., 2007). See Table 3.2 of for all items of the developed measures.

The causal beliefs measure posed the following question: "To what extent do you think that the following could explain the person's behaviour?" The 6-item measure was rated along a 5-point Likert scale ranging from 1 (Completely explains the behaviour) to 5 (Does not explain the behaviour). Items of the causal beliefs measure were reverse-coded such that higher scores represent greater agreement that causes explain the person's behaviour.

Table 3.2. Scale items of the Causal beliefs, Professional help-seeking beliefs and Lay help-seeking beliefs measures (retained scale items shaded in grey).

Scale Items	Causal beliefs	Lay help-seeking beliefs	Professional help-seeking beliefs
1	problems with their family	talk to their children	see a psychologist
2	brain damage	see a spiritual leader (e.g. priest, imam)	see a GP / doctor
3	hormonal imbalance	get some fresh air	see a psychiatrist
4	problems at work	take some vitamins	go for counselling and/or therapy
5	loss of a loved one	talk to their spouse	go to a psychiatric clinic
6	experienced a traumatic event	go on a holiday	take medication (e.g., antidepressants / antibiotics)

7	been experiencing too much stress	talk to a teacher / professor / lecturer	call a telephone helpline
8	relationship problems	talk to friends	-
9	-	talk to a colleague	-
10	-	read about mental illness (in a book or on the internet)	-
11	-	talk to their parents	-

The lay help-seeking beliefs and professional help-seeking beliefs measures posed the following question: "To what extent do you think it would be helpful or harmful for your friend to…?". Participants were asked to rate items of both the lay and professional help-seeking beliefs measures along a 7-point Likert scale that ranged from 1 (Very helpful) to 7 (Very harmful). Items of the lay and professional help-seeking beliefs measures were reverse-coded such that higher scores represent beliefs of greater helpfulness. See Table 3.3 for scale reliabilities, means, and standard deviations for all of the items of the causal beliefs, lay help-seeking beliefs and professional help-seeking beliefs measures.

3.2.4. Data Analysis

Certain assumptions needed to be fulfilled in order to ensure that the newly developed causal beliefs, lay help-seeking beliefs and professional help-seeking beliefs measures were robust. For instance, *construct validity* is the extent to which a scale measures what it is intended to measure (Cronbach & Meehl, 1955). That is, the developed causal beliefs scale would be constructually valid if all items exclusively measured concepts that are theoretically related to causal beliefs. However, if the items also had the possibility to measure unrelated concepts, such as help-seeking beliefs or recognition, then the scale may not demonstrate construct

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Table 3.3. Scale means, standard deviations and reliability coefficient [European American & Indian (shaded in grey)].

	Causal beliefs			Professional help-seeking beliefs			Lay help-seeking beliefs		
	Depression	Schizophrenia	GAD	Depression	Schizophrenia	GAD	Depression	Schizophrenia	GAD
α									
All items	.88	.84	.72	.88	.80	.83	.89	.91	.87
	.77	.81	.71	.87	.88	.83	.88	.88	.86
Final items	.81	.74	.64	.73	.60	.70	.86	.91	.86
	.60	.76	.45	.63	.59	.64	.86	.85	.84
Mean									
All items	20.90	20.95	22.12	37.04	43.95	39.76	15.84	15.15	16.29
	19.64	25.00	22.53	32.82	34.63	34.78	19.47	20.17	20.35
Final items	6.76	9.01	7.60	33.45	44.30	36.67	7.84	7.43	8.38
	7.45	7.63	7.82	30.00	34.45	31.67	9.06	9.70	9.54
SD									
All items	5.65	5.78	5.26	11.31	12.90	10.37	7.42	6.88	6.52
	6.09	6.77	4.88	11.47	11.44	11.09	8.28	8.31	7.82
Final items	2.49	3.04	2.29	10.30	13.12	9.60	3.87	3.67	3.57
	2.55	2.85	2.38	10.37	11.07	10.00	3.72	3.58	3.75

validity to measure causal beliefs. A way to measure construct validity is through hypothesis testing, whereby construct validity would be supported if the findings followed the hypothesised framework. *Content validity* refers to whether items of a scale cover the complete range of the studied construct (DeVon et al., 2007). As was done in the present study, content validity is best achieved by examining previous literature or qualitative research (DeVon et al., 2007). Validity is necessary but not sufficient for a solid measure; a further consideration is the reliability of the measure (Field, 2009).

Reliability is the extent to which an experiment, test or measurement produces the same findings on repeated occasions (Carmines & Zeller, 1979). A true score of an item can never be known as every measurement is subject to error (Carmines & Zeller, 1979; DeVon et al., 2007), however the degree of error is variable. In the present study, the type of reliability that was examined in relation to the developed measures was *internal consistency* – namely, how well items of a measure 'hang together' (DeVon et al., 2007). The coefficient alpha method is the only method to test internal consistency in a single test (DeVon et al., 2007). Field (2009) described this method as essentially splitting the data in two in all possible ways and then, for each split, calculating the correlation coefficient, with the average of these values being *Cronbach's alpha (α)*. The generally accepted value for *Cronbach's α* is .70 or above (DeVon et al., 2007; Field, 2009); however, Kline (1999) noted that in psychology, due to the multiplicity of measured constructs, *α*-values below .70 are a realistic outcome.

For the newly developed scales, measurement equivalence or invariance – the degree a measure functions the same way across groups (French & Finch, 2006; Gere & MacDonald, 2012) – was examined. Failure to establish measurement equivalence threatens the validity of conclusions drawn in cross-cultural research (Diamantopoulos & Papadopoulos, 2010; Singh, 1995). Evaluation of measurement equivalence is rooted in classical test theory of true and error scores, which enables the evaluation of a measure's reliability and validity

(Diamantopoulos & Papadopoulos, 2010; Vandenberg & Lance, 2000).[4]

A common method of examining measurement equivalence or invariance is by means of multi-group confirmatory factor analysis (Diamantopoulos & Papadopoulos, 2010; French & Finch, 2006; Gere & MacDonald, 2012). Measurement equivalence or invariance testing involves the comparison of increasingly more restrictive models by constraining them to be equal across groups (French & Finch, 2006; Gere & MacDonald, 2012).

I conducted multiple-group factor analyses for each measure separately. Each construct – causal beliefs, lay help-seeking beliefs and professional help-seeking beliefs – was modelled as a latent variable with the individual scale items representing observed variables (see Table 3.4 for zero-order correlations between items for each sample and mental disorder). Cross-cultural invariance of the measurement model was tested in both the overall measurement model as well as individual loadings. Items or models were considered as invariant when the chi-square difference test was non-significant. If items did not demonstrate cross-cultural invariance, I tested further models where invariant items were removed one by one until all remaining items met cultural equivalence (i.e., chi-square difference test was non-significant, $p > .05$; Kline, 2011). Paths within models were tested for equivalence across cultural groups by running models where the path of interest was constrained to be equal across cultural groups, while remaining paths were free to vary. At each step I removed items or paths with the highest p-value in both cultural groups or if the chi-square difference test showed non-invariance.

For the statistical analyses I employed AMOS 18. As AMOS 18 requires data without missing values, I used the expectation-maximisation estimation method to deal with the missing values in the data set (Dempster, Laird, & Rubin, 1977). The expectation-maximisation algorithm is based on the assumption that values are missing at random and it is recommended

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[4] First I ran exploratory factor analyses on the newly developed scales; however, the results were random and uninterpretable. These findings were likely driven by poor items, which were revealed by subsequent analyses.

Table 3.4. Correlations for the causal beliefs, professional help-seeking beliefs and lay help-seeking beliefs measures by sample (European American under axis, Indian over axis shaded in grey).

Causal beliefs - Depression									Causal beliefs - Schizophrenia							
	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8
1		.54**	.51**	.58**	.59**	.62**	.42**	.24*	1		.34**	.50**	.72**	.64**	.70**	.34**	.03
2	.38**		.69**	.61**	.81**	.70**	.48**	.35**	2	.36**		.63**	.32**	.55**	.42**	.30**	.16
3	.18	.43**		.60**	.64**	.54**	.36**	.14	3	.52**	.64**		.49**	.58**	.51**	.30**	.01
4	.23*	.47**	.50**		.69**	.66**	.31**	.14	4	.28**	.38**	.39**		.63**	.66**	.27**	.02
5	.45**	.62**	.21*	.41**		.70**	.4**	.35**	5	.35**	.55**	.38**	.24*		.61**	.41**	.19
6	.60**	.57**	.38**	.37**	.48**		.43**	.31**	6	.56**	.35**	.49**	.32**	.33**		.36**	-.02
7	.05	.24*	.17	.15	.23*	.05		.33**	7	.30**	.15	.24*	.27**	.19	.19		.28**
8	.19	.12	-.02	.07	.06	.13	.49**		8	.40**	.30**	.27**	.12	.23*	.27**	.51**	

*** p < .001, ** *p* < .01, *p < .05, †*p* < .10

Causal beliefs - GAD									Professional help-seeking beliefs - Depression							
	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7
1		.22*	.32**	.21*	.25**	.51**	-.01	.09	1		.24*	.29**	.29**	.29**	.29**	.19†
2	.08		.64**	.02	.64**	.34**	.14	.08	2	.45***		.61***	.58***	.60***	.55***	.55***
3	.12	.51**		.16	.51**	.44**	.08	.00	3	.37***	.61***		.68***	.68***	.52***	.63***
4	.33**	.12	.24*		.28**	.36**	.08	.24*	4	.41***	.50***	.57***		.68***	.50***	.71***
5	.23*	.41**	.30**	.07		.42**	.11	.17	5	.44***	.56***	.61***	.55***		.48***	.68***
6	.50**	.11	.26**	.24*	.298**		.09	.20*	6	.38***	.50***	.51***	.47***	.68***		.61***
7	.15	.15	.10	.19	.043	.11		.41**	7	.19	.55**	.63**	.71**	.68**	.61**	
8	.33**	.14	.36**	.15	.219*	.38**	.30**									

*** p < .001, ** *p* < .01, *p < .05, †*p* < .10

Professional help-seeking beliefs – Schizophrenia								Professional help-seeking beliefs - GAD							
	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7
1		.27**	.16	.27**	.34***	.40***	.26**	1		.20*	.11	.27**	.22*	.41***	-.005
2	.19*		.56***	.62***	.55***	.53***	.49***	2	.30***		.56***	.39***	.48***	.30**	.46***
3	.20*	.64***		.58***	.57***	.56***	.61***	3	.34***	.48***		.58***	.58***	.26**	.50***
4	.20*	.33***	.53***		.72***	.55***	.59***	4	.36***	.31***	.41***		.54***	.45***	.54***
5	.11	.52***	.71***	.46***		.69***	.73***	5	.15	.44***	.55***	.48***		.50***	.63***
6	.22*	.37***	.56***	.28**	.45***		.65***	6	.29**	.44***	.43***	.32***	.51***		.53***
7	.21*	.23*	.47***	.44***	.58***	.52***		7	.18†	.49***	.47***	.56***	.76***	.45***	

*** p < .001, ** *p* < .01, *p < .05, †*p* < .10

Table 3.4. Correlations for the causal beliefs, professional help-seeking beliefs and lay help-seeking beliefs measures by sample (European American under axis, Indian over axis shaded in grey - Continued).

Lay help-seeking beliefs - Depression

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
1		.54**	.08	.21*	.34**	.68**	.59**	.35**	.60**	.56**	.61**
2	.53***		.34**	.25*	.39**	.59**	.54**	.31**	.56**	.50**	.46**
3	.38***	.32***		.14	.25*	.10	.19	.26*	.22*	.27**	.08
4	.41***	.34***	.24**		.36**	.31**	.11	.17	.23*	.14	.26**
5	.45***	.48***	.08	.43***		.51**	.40**	.28**	.45**	.44**	.63**
6	.43***	.39***	.30**	.45***	.62***		.61**	.36**	.63**	.52**	.61**
7	.76***	.51***	.31***	.34***	.45***	.45***		.57**	.66**	.58**	.56**
8	.45***	.36***	.27**	.37***	.56***	.45***	.40***		.54**	.49**	.34**
9	.51***	.45***	.45***	.45***	.35***	.49***	.45***	.44***		.70**	.55**
10	.76***	.56***	.34***	.37***	.54***	.45***	.75***	.51***	.42***		.57**
11	.58***	.58***	.34***	.40***	.48***	.30**	.49***	.45***	.52***	.56***	

*** p < .001, ** *p* < .01, *p < .05, †*p* < .10

Lay help-seeking beliefs - Schizophrenia

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
1		.47***	.13	.23*	.63***	.45***	.65***	.64***	.38***	.47***	.39***
2	.42***		.11	.20*	.52***	.56***	.58***	.36***	.32***	.32***	.30***
3	.42***	.34***		.22*	.39***	.35***	.24*	.12	.18	.28***	.34**
4	.48***	.37***	.23*		.30**	.40***	.26**	.15	.25**	.28**	.27**
5	.26**	.49***	.17	.24**		.61***	.58***	.53***	.34***	.47***	.46***
6	.35***	.56***	.32***	.25**	.70***		.57***	.51***	.42***	.46***	.49***
7	.71***	.48***	.29**	.47***	.37***	.48***		.43***	.44***	.43***	.39***
8	.44***	.61***	.34***	.36***	.55***	.69***	.49***		.42***	.53***	.54***
9	.55***	.61***	.36***	.43***	.42***	.55***	.53***	.56***		.47***	.27**
10	.67***	.567***	.43***	.46***	.36***	.52***	.61***	.59***	.62***		.75***
11	.67***	.59***	.46***	.45***	.27**	.53***	.52***	.57***	.70***	.75***	

*** p < .001, ** *p* < .01, *p < .05, †*p* < .10

Table 3.4. Correlations for the causal beliefs, professional help-seeking beliefs and lay help-seeking beliefs measures by sample (European American under axis, Indian over axis shaded in grey - Continued).

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
					Lay help-seeking beliefs - GAD						
1		.50***	.19	.36***	.62***	.41***	.47***	.44***	.30**	.49****	.48****
2	.34***		.33***	.21*	.49***	.38***	.49***	.37***	.25**	.54***	.17
3	.36***	.31***		.14	.19	.27**	.09	.14	.22*	.23*	.20*
4	.46***	.45***	.32***		.35***	.62***	.31**	.38***	.51***	.36***	.36***
5	.13	.41***	.13	.28***		.60***	.36***	.50***	.30**	.54***	.49***
6	.23*	.37***	.27***	.37***	.75***		.40***	.45***	.50***	.41***	.42***
7	.54***	.42***	.26***	.33***	.44***	.39***		.39***	.36***	.52***	.44***
8	.15	.42***	.24**	.27***	.70***	.68***	.42***		.36***	.45***	.37***
9	.41***	.30***	.35***	.49***	.21*	.42***	.22*	.30***		.31**	.43***
10	.61***	.44***	.25**	.36***	.29**	.42***	.52***	.31***	.35***		.56***
11	.52***	.54***	.36***	.55***	.23*	.34***	.30***	.37**	.63***	.33***	

*** $p < .001$, ** $p < .01$, *$p < .05$, †$p < .10$

Figure 3.2. Professional help-seeking beliefs model
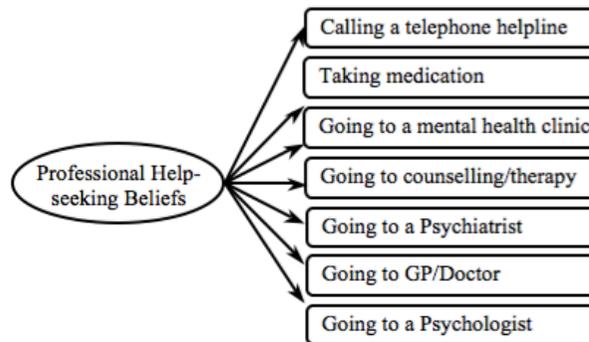
that no more than 2% of the data set is missing (Dempster et al., 1977; Schafer, 1997); both assumptions were fulfilled in the present data set (Little's MCAR test: $p > .05$, $N_{\text{missing values}} <$ 1.85%). Then the algorithm computes maximum likelihood estimates. I used SPSS 20 to input items into the expectation-maximisation algorithm. To increase the power of the data I input items associated with one particular sub-scale at time, as this increases the correlations between items (Dempster et al., 1977).

Kline's (2011) guidelines to evaluate model fit were followed: non-significant chi-square value, a comparative fit index (CFI) greater than .90, a root mean square error of approximation (RMSEA) of .08 or less, and a standardized root mean square residual (SRMR) of .10 or less. As a is commonly recommended in structural equation modelling, several goodness-of-fit indicators were used to evaluate models.

3.3. Results

3.3.1. Hypothesis 1(a): validating the professional help-seeking beliefs measure

First I examined the validity of the professional help-seeking beliefs measure across (i) cultures and (ii) mental disorders. I performed multi-group CFA with culture – European Americans versus Indians – as the group-variable, and tested this measure separately for each mental disorder. The model displayed in Figure 3.2 was tested.

First, the professional help-seeking beliefs measure was examined in relation to the depression data. The model proved to be a good fit (see Depression Model 1 in Table 3.5.1) and the overall model loaded equivalently across cultures ($ps > .05$). Yet *seeing a psychologist* loaded more strongly in the European American sample while *going to counselling or therapy* loaded more strongly in the Indian sample (see Depression in Table 3.5.2). Thus I tested subsequent models by removing the most invariant item at each step. Items were eliminated in the following order: *going to counselling or therapy* then *seeing a psychologist*. The refined model held an excellent model fit (see Depression Model 3 in Table 3.5.1), which can be

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employed for cross-cultural comparison in relation to depression.

Next, I examined the professional help-seeking beliefs measure in relation to the schizophrenia data and found that the model had a good fit (see Schizophrenia Model 1 in Table 3.5.1). However, the model did not load equally between cultures (χ^2 (7) = 22.09, p = .002). On closer inspection, several items did not load invariantly (see Schizophrenia in Table 3.5.2). Thus I tested further models by removing the most invariant item at each step. Items were removed in the following order: *see a psychologist*, *go for counselling or therapy* and *see a GP/doctor*. The refined model held an excellent model fit (see Schizophrenia Model 4 in Table 3.5.1), which can be employed for cross-cultural comparison in relation to schizophrenia.

Finally, I tested the original model in regards to the GAD data. The overall model loaded equivalently across cultures (p > .05), however it proved to be a poor fit (see GAD Model 1 in Table 3.5.1). On closer, inspection several items did not load invariantly (see GAD in Table 3.5.2). Thus I tested further models eliminating the most invariant item at each step. Items were removed in the following order: *go for counselling and/or therapy*, *see a psychiatrist* and *see a GP/doctor*. The refined model held a good model fit (see GAD Model 4 in Table 3.5.1), which can be employed for cross-cultural comparison in relation to GAD.

In order to be able to compare findings between mental disorders, I tested a model that encompassed only the items that were culturally invariant across all three mental disorders (see Figure 3.3). The final model showed an excellent fit in relation to all three mental disorders (final Models in Table 3.5.1), confirming both *H1(a)(i)* – cross-cultural validity – and *H1(a)(ii)* – validity across mental disorders. Thus, in the following analyses I employed the final professional help-seeking beliefs measure displayed in Figure 3.3.

Figure 3.3. Refined Professional help-seeking beliefs Model.

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER
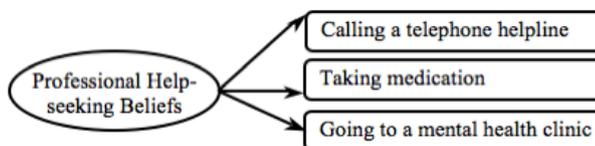
Table 3.5.1. Model fit indices for the professional help-seeking beliefs measure.

Model	χ^2	df	p	CFI	RMSEA	LB	HB	SRMR	$\Delta\chi^2$	df	p
Depression											
Unconstrained	43.64	28	.03	.98	.05	.02	.08	.04			
Model 1	53.69	35	.02	.97	.05	.02	.08	.07	10.05	7	.19
Model 2	17.52	18	.49	1.00	.02	<.001	.06	.06	43.23	18	.0007
Model 3	13.78	10	.18	.99	.03	<.001	.08	.06	3.74	8	.88
Model - final	2.20	3	.53	1.00	<.001	<.001	.10	.03	20.18	13	.09
Schizophrenia											
Unconstrained	61.00	28	.001	.94	.08	.06	.11	.06			
Model 1	87.10	35	.001	.92	.09	.06	.11	.07	26.10	7	.0005
Model 2	47.51	24	.003	.95	.07	.04	.10	.07	39.59	11	.00004
Model 3	26.93	15	.03	.10	.06	.02	.10	.06	20.58	9	.01
Model 4	9.05	8	.34	.10	.03	<.001	.09	.03	17.88	7	.01
Model – final	0.56	3	.91	1.00	<.001	<.001	.05	.01	8.49	5	.13
GAD											
Unconstrained	72.68	28	.001	.92	.09	.06	.11	.07			
Model 1	80.94	35	.001	.91	.08	.06	.10	.09	8.26	7	.31
Model 2	70.82	24	.001	.89	.10	.07	.12	.08	10.12	11	.52
Model 3	40.17	15	.001	.90	.09	.06	.13	.05	30.65	9	.0003
Model 4	18.81	8	.02	.94	.08	.03	.13	.05	21.36	7	.003
Model - final	3.79	3	.29	.99	.04	<.001	.13	.03	15.02	5	.01

Table 3.5.2. Factor loadings and chi square test of invariance of the initial professional help-seeking beliefs measure (significant factor loadings are bolded).

	Depression					Schizophrenia					GAD				
	European American	Indian	X^2	df	p	European American	Indian	X^2	df	p	European American	Indian	X^2	df	p
See psychologist	0.84	0.82	3.76	1	.05	0.60	0.81	9.03	1	.003	0.84	0.77	3.65	1	.06
See GP	0.75	0.66	.10	1	.75	0.61	0.78	3.81	1	.05	0.59	0.55	.17	1	.68
See psychiatrist	0.88	0.82	1.28	1	.26	0.80	0.87	4.53	1	.03	0.87	0.80	3.36	1	.07
Go to counselling / therapy	0.67	0.83	6.07	1	.01	0.58	0.79	5.96	1	.02	0.67	0.74	4.94	1	.03
Go to psychiatric clinic	0.71	0.81	.65	1	.42	0.90	0.71	.16	1	.69	0.64	0.71	1.19	1	.28
Take medication	0.67	0.72	.02	1	.89	0.66	0.68	.73	1	.39	0.58	0.66	.81	1	.37
Call telephone helpline	0.55	0.33	2.14	1	.14	0.24	0.37	.74	1	.39	0.35	0.24	.33	1	.57

Table 3.6.1. Model fit indices for the lay help-seeking beliefs measure.

Model	X^2	df	p	CFI	RMSEA	LB	HB	SRMR	$\Delta\chi^2$	df	p
Depression											
Unconstrained	214.51	88	.001	.88	.08	.07	.10	.08			
Model 1	220.57	98	.001	.89	.08	.06	.09	.08	6.06	10	.81
Model - final	142.86	79	.001	.93	.06	.05	.08	.07	77.71	19	<.00001
Schizophrenia											
Unconstrained	280.19	88	.001	.83	.10	.09	.12	.08			
Model 1	299.64	98	.001	.82	.10	.09	.11	.09	19.45	10	.03
Model - final	212.14	79	.001	.86	.09	.08/	.10	.06	87.5	19	<.00001
GAD											
Unconstrained	380.03	88	.001	.70	.13	.11	.14	.12			
Model 1	387.34	98	.001	.71	.12	.11	.13	.13	7.31	10	<.00001

Table 3.6.2. Factor loadings and chi square test of invariance of the initial lay help-seeking beliefs measure (significant factor loadings are bolded).

	Depression					Schizophrenia					GAD				
	European American	Indian	X^2	df	p	European American	Indian	X^2	df	p	European American	Indian	X^2	df	p
Talk to their children	.67	.69	.06	1	.82	-.72	.62	1.35	1	.25	.66	.55	.38	1	.54
See spiritual healer	.43	.25	1.54	1	.22	-.49	.35	.36	1	.55	.46	.28	1.24	1	.27
Fresh air	.64	.73	1.79	1	.08	-.52	.78	4.76	1	.03	.53	.74	4.00	1	.06
Take vitamins	.59	.59	.01	1	.92	-.69	.75	.05	1	.82	.59	.73	1.07	1	.30
Talk to spouse	.81	.79	.05	1	.82	-.71	.74	2.92	1	.09	.64	.59	.03	1	.86
Go on holiday	.60	.78	2.08	1	.15	-.74	.70	3.52	1	.06	.58	.66	.64	1	.42
Talk to teacher / professor / lecturer	.62	.56	.02	1	.90	-.78	.54	1.79	1	.18	.59	.56	.17	1	.68
Talk to friends	.85	.83	.29	1	.59	-.84	.68	2.78	1	.10	.73	.66	.00	1	.99
Talk to colleagues	.69	.75	.82	1	.37	-.83	.65	1.14	1	.29	.72	.65	.01	1	.92
Read about mental illness	.52	.30	1.23	1	.27	-.54	.38	.32	1	.58	.68	.60	.18	1	.67
Talk to parents	.85	.75	.07	1	.80	-.73	.74	1.16	1	.28	.66	.70	.34	1	.56

Table 3.7.1. Model fit indices for the causal beliefs measure.

Model	X^2	df	p	CFI	RMSEA	LB	HB	SRMR	$\Delta\chi^2$	df	p
Depression											
Unconstrained	86.78	38	<.001	.93	.08	.06	.10	.04			
Model 1	97.85	47	<.001	.93	.072	.05	.09	.07	11.07	9	.27
Model - final	2.40	3	.49	1.00	< .001	< .001	.11	<.02	95.45	44	.00001
Schizophrenia											
Unconstrained	99.64	38	<.001	.90	.09	.07	.11	.07			
Model 1	134.69	47	<.001	.85	.10	.08	.11	.09	35.05	9	.00006
Model 2	102.11	34	<.001	.86	.10	.08	.12	.09	32.58	13	.002
Model 3	72.79	15	<.001	.86	.137	.106	.17	.08	29.32	19	.06
Model 4	40.60	8	<.001	.89	.14	.10	.19	.08	32.19	7	.00004
Model - final	1.11	3	.78	1.00	<.001	<.001	.09	.01	39.49	5	<.00001
GAD											
Unconstrained	112.421	38	<.001	.78	.10	.08	.12	.09			
Model 1	126.042	47	<.001	.76	.09	.07	.11	.09	13.62	9	.44

Table 3.7.2. Factor loadings and chi square test of invariance of the initial causal beliefs measure (significant factor loadings are bolded).

	Depression					Schizophrenia					GAD				
	European American	Indian	X^2	df	p	European American	Indian	X^2	df	p	European American	Indian	X^2	df	p
Family Problems	0.68	0.57	.21	1	.64	0.83	0.65	3.21	1	.07	0.41	0.56	1.43	1	.23
Brain damage	0.47	0.55	.07	1	.79	0.21	0.80	9.55	1	.002	0.65	0.85	.63	1	.43
Hormonal imbalance	0.71	0.90	.30	1	.59	1.29	0.63	4.10	1	.04	0.62	0.35	.88	1	.35
Work / school / university problems	0.76	0.58	.17	1	.68	0.80	0.48	10.21	1	.001	0.25	0.38	.81	1	.37
Lost a loved one	0.90	0.71	.01	1	.91	0.80	0.56	5.23	1	.02	0.75	0.48	2.42	1	.12
Traumatic event	0.88	0.81	.14	1	.71	0.55	0.73	2.43	1	.12	0.78	0.40	3.07	1	.08
Stress	0.73	0.50	.45	1	.50	0.67	0.80	.00	1	.948	0.76	0.53	.40	1	.53
Relationship Problems	0.80	0.73	.11	1	.74	0.80	0.62	7.26	1	.007	0.57	0.64	.65	1	.42
Social <-> Biological	0.74	0.26	7.82	1	.005	0.34	0.50	.50	1	.48	0.23	0.65	2.60	1	.11

3.3.2. Hypothesis 1(b): validating the lay help-seeking beliefs measure

I used the same approach to test the validity of the lay help-seeking beliefs measure between (i) cultures and (ii) mental disorders (see Figure 3.4). First the model was examined in relation to the depression data for which the model proved to be an adequate fit (see Depression Model 1 in Table 3.6.1). All loadings between observed variables and latent variables were invariant and significant in both cultures (see Depression in Table 3.6.2). Thus, this measure can be employed for cross-cultural comparison in relation to the depression data.

Figure 3.4. Original Lay help-seeking beliefs Model.
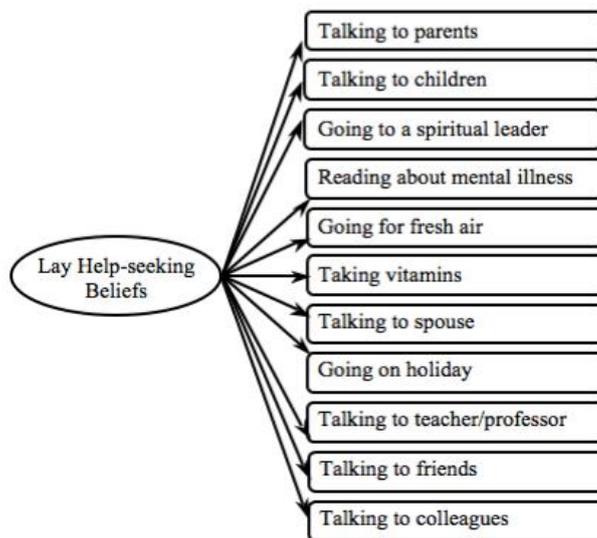
Next, I tested the lay help-seeking beliefs measure in relation to the schizophrenia data and found that the model was a poor fit (see Schizophrenia Model 1 in Table 3.6.1). Indeed, the model did not load equally between cultures (χ^2 (10) = 19.45, p = .04). The item *fresh air* did not load equally between groups (see Schizophrenia in Table 3.6.2) and a refined model without this item was tested (see Figure 3.5). The refined model was invariant across cultures, with all observed variables loading equivalently onto the latent variables (ps > .05). The refined model held an adequate model fit and had significantly improved (see Schizophrenia Model final in Table 3.6.1).

Next, I tested the original model in regards to the GAD data. All latent variables

significantly mapped onto the latent variable and all observed variables loaded equivalently onto the latent variable (see GAD in Table 3.6.2). Overall, however, the model fit was poor (see GAD Model 1 in Table 3.6.1). As *H2(b)(ii)* – equivalence across mental disorders – was only partially confirmed, the lay help-seeking beliefs measure can only be used to analyse data concerning depression and schizophrenia and not GAD.

In order to be able to compare the lay help-seeking beliefs measure between mental disorders, the refined model developed from the schizophrenia data was used (see Figure 3.5) and tested this with the depression data. Confirming *H1(b)(i)* – establishing cross-cultural equivalence – I found a good model fit, which also significantly improved (see Depression Model final in Table 3.6.1). In all following analyses, I used the final lay help-seeking beliefs model (see Figure 3.5).

Figure 3.5. Refined Lay help-seeking beliefs Model.
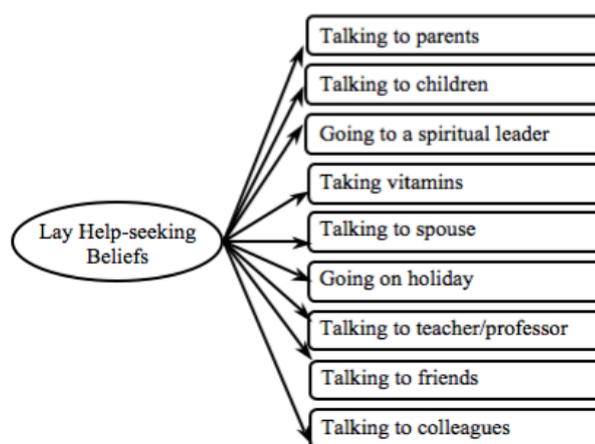
3.3.3. Hypothesis 1(c): validating the causal beliefs measure

I employed the same approach to examine the validity of the social and biological causal beliefs measure (i) cross-culturally and (ii) between mental disorders. See Figure 3.6 for a visual reference of the proposed causal beliefs measure.

First, I tested the measure in regards to the depression data. The measurement model was a good fit (see Depression Model 1 in Table 3.7.1). All loadings of the observed variables significantly mapped onto their respective latent variables in both cultural groups and held

cross-cultural equivalence (see Depression in Table 3.7.2). However, the correlation between biological and social causal beliefs significantly differed between cultures, being significantly, positively correlated in the European American sample while trending towards significance in the Indian sample (see Depression in Table 3.7.2). Thus this measure can be used for analyses within a cultural group, but cannot be utilized for cross-cultural comparison of biological and social causal beliefs.

Figure 3.6. Proposed Causal beliefs model
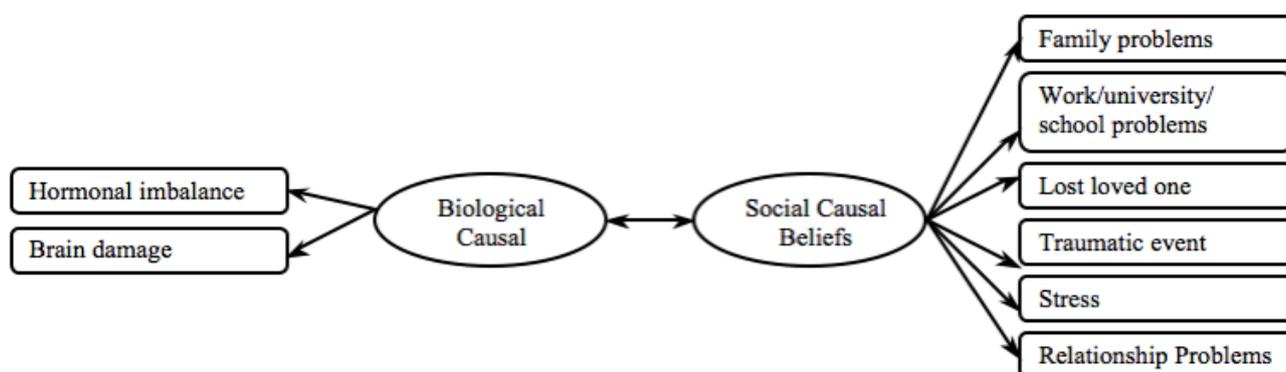
Next, I tested the causal beliefs measure in regards to the schizophrenia data and found that the model fit was poor (see Schizophrenia Model 1 in Table 3.7.1). Inspection of individual item loadings showed that all loadings significantly mapped onto their respective latent variables in both cultural groups, except for the biological causal beliefs items *brain damage* and *hormonal imbalance* in the European American sample (see Schizophrenia in Table 3.7.2). Further, only the items *traumatic event, family problems* and *stress* were cross-culturally invariant (see Schizophrenia in Table 3.7.2). I therefore tested subsequent models by removing the most invariant item at each step. Items were removed in the following order: *work/university/school problems*, *brain damage*, *hormonal imbalance, relationship problems* and *lost a loved one*. The removal of individual items significantly improved model fit and the final model held an excellent model fit (see Schizophrenia Model final in Table 3.7.1). The final causal beliefs measure can be utilized cross-culturally in relation to the schizophrenia data.

Finally, I tested the causal beliefs measure in regards to the GAD data. All individual observed variables significantly loaded onto the latent variable and were equivalent across cultures (see GAD in Table 3.7.2). However, the model fit was poor (see GAD Model 1 in Table 3.7.1). Therefore, this measure cannot be used in regards to GAD data.

In order to compare findings between mental disorders I employed the refined model developed from the schizophrenia data and tested this with the depression data. I found an excellent model fit and found this to be a significant improvement (see Depression Model final in Table 3.7.1). Thus, in conclusion *H1(c)(i)* − establishing cross-cultural validity − was confirmed as the final causal beliefs measure was cross-culturally equivalent (see Figure 3.7). In all of the following analyses, the final causal beliefs scale was used. As only the social causal belief items were found to be valid, going forward this measure is referred to as the social causal beliefs measure.

Figure 3.7. Final Social Causal beliefs model.
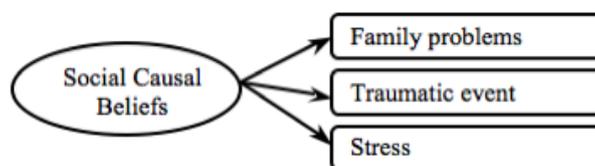
Also *Hypothesis 1(c)(ii)* − establishing validity between mental disorders − was only partially supported, as items of the causal beliefs scale were only valid in relation to the depression and schizophrenia data.

As the social causal beliefs and the lay help-seeking beliefs measures held a poor model fit in regards to the GAD data, only the depression and schizophrenia data was used in the following analyses. In all following analyses I employed social causal beliefs, lay help-seeking beliefs and professional help-seeking beliefs as the latent variables, with both the depression and schizophrenia items loading on the respective constructs.

Table 3.8. Socio-demographic variables in relation to mental health literacy.

	Recognition	Social Causal Beliefs	Lay HSB	Professional HSB
Age	$p > .05$	$p > .05$	$p > .05$	$r = -.23$, p = .001
Gender	$t(204) = -2.46$, $p = .02$	$p > .05$	$p > .05$	$t(206) = 2.50$, $p = .01$
Education	$F(7, 205) = 2.11$, $p = .04$	$p > .05$	$F(7, 207) = 2.07$, $p = .05$	$p > .05$
Familiarity	$F(10, 205) = 6.73$, $p = .03$	$p > .05$	$p > .05$	$p > .05$

Table 3.9. Predictor and Outcome Variables – Mean, standard Deviations and *t*-tests.

	Culture	*M*	SD	*t*	*df*	*p*
Collectivism	European American	25.90	5.80	-5.43	206	.001
	Indian	30.20	5.60			
Professional help-seeking beliefs	European American	18.76	7,12	-3.63	206	.001
	Indian	15.28	6,67			
Lay help-seeking beliefs	European American	61.47	19,45	4.42	206	.001
	Indian	73.23	18,83			
Social causal beliefs	European American	15.78	4,47	1.14	206	.26
	Indian	15.04	4,84			
Recognition	European American	4.18	1.44	14.56	204	.001
	Indian	1.32	1.34			
Depression	European American	1.80	0.56	11.42	206	.001
	Indian	0.66	0.86			
Schizophrenia	European American	1.44	0.71	12.04	206	.001
	Indian	0.38	0.53			
GAD	European American	0.93	0.69	7.59	204	.001
	Indian	0.29	0.50			

Table 3.10. Comparison of mental health literacy models – removing non-significant paths.

	χ^2	*df*	*p*	CFI	RMSEA	LB	HB	SRMR	$\Delta\chi^2$	*df*	*p*
Model 1	83.67	52	.004	.96	.05	.03	.08	.07			
Model 2: removed Social Causal beliefs → Professional help-seeking beliefs	83.86	54	.006	.96	.05	.03	.07	.07	.19	2	.91
Model 3: removed Collectivism → Professional help-seeking beliefs	85.75	56	.006	.96	.05	.03	.07	.06	1.89	2	.39

Next, to examine construct validity, I ran *t*-tests and correlations between socio-demographic variables and the culturally invariant aspects of the mental health literacy scales to see whether the relationships followed the literature (see Table 3.8). Females, more educated and participants more familiar with mental illness showed significantly better recognition. More educated participants also significantly endorsed lay help-seeking beliefs more. Finally, younger and male participants endorsed professional help-seeking beliefs significantly more.

3.3.4. Hypotheses 2, 3, 5, 6, 8: model testing

Normality tests (*p* > .05) and inspection of the histograms showed that the professional help-seeking beliefs, lay help-seeking beliefs and social causal beliefs constructs were normally distributed in both cultural samples. Recognition showed negative kurtosis in the Indian sample (*z* = -3.67). However, inspection of the frequencies showed that 50% of the Indian participants recognised the symptoms represented in the vignette as a mental disorder and there was variation in the recognition scores that would allow for valid correlations, which does not support a floor effect.

Next I tested *Hypotheses 2, 3, 5, 6* and *8* – associations between variables in the MHL model (see Figure 3.1). First, I conducted *t*-tests to examine cultural differences in predictor and outcome variables. There were no significant cultural differences in social causal beliefs (Table 3.9). However, Indians were significantly more collectivist, held significantly more positive lay help-seeking beliefs, while significantly more negative professional help-seeking beliefs (Table 3.9). Further, the European Americans were significantly better at recognizing the mental disorders displayed in the vignettes than their Indian counterparts; this pattern held across all three mental disorders (Table 3.9).

Before commencing model testing, I created item parcels to represent the observed variables. This is a commonly used method in CFA and SEM (Little, Cunningham, Shahar, & Widaman, 2002; Mathisen, Torsheim, & Einarsen, 2006) that is surrounded by some

controversy (e.g., Little, Rhemtulla, Gibson, & Schoemann, 2013). For example, Little and colleagues (2002, p. 152) suggest that from an empirically conservative perspective, the modelled data should be as close to individuals' responses as possible in order to reduce potential manufacturing of a false structure and thus the parcelling method can be viewed as "cheating". On the other hand, it has been argued that: first, parcels are more reliable compared to individual items as they have more scale points (Bruin, 2004); second, parcels, compared to individual items, are likely to show a more normal distribution (Bruin, 2004); and, third, using individual items as indicators for latent variables would require a large number of parameters (i.e., factor loadings and error terms) to fit the model to the data. Due to the moderate sample sizes of the present studies, I opted for the use of the parcelling method.

Parcels for causal beliefs, lay help-seeking beliefs and professional help-seeking beliefs were divided by the depression and schizophrenia items. For the collectivism latent variable, I created parcels by conducting exploratory factor analyses on the items of the measures; these items were then ranked according to the size of their factor loadings (Russell, Kahn, Spoth, & Altmaier, 1998)[5]. The highest loading items were paired with the lowest loading items and assigned to a parcel, so that parcels reflected the latent variables equally. I created two parcels for all latent variables.

I used multi-group structural equation modelling to test the hypothesized moderated-mediation model (see Figure 3.1). The model held a good fit when allowed to vary freely across groups (see Model 1 in Table 3.10). Inspection of the regression weights showed some non-significant loadings in both cultural groups (ps > .05). Thus I tested further models removing any paths between latent variables that were non-significant in both cultures, until all remaining paths were significant in either cultural group. See Table 3.10 for order of path removal. The

[5] See appendix section 9.3. for factor loadings.

final model held an optimal model fit (see Model 3 in Table 3.10).

Next, the paths in the final model were examined. *Hypothesis 2* was refuted, as collectivism did not significantly predict professional help-seeking beliefs in either cultural group (Figure 3.8). *Hypothesis 3* was partially supported as collectivism significantly, positively predicted lay help-seeking beliefs in the Indian sample (Figure 3.8). This indicates that Indian participants who reported greater collectivism were also more likely to positively endorse lay help-seeking beliefs. The association was significantly moderated by culture as the association was non-significant in the European American sample, lending some insight into the *RQ* – whether the MHL model will be equivalent across culture groups.

Figure 3.8. Refined Mental Health Literacy Model: Standardized beta values – European American & Indian. Significant loadings are bolded.
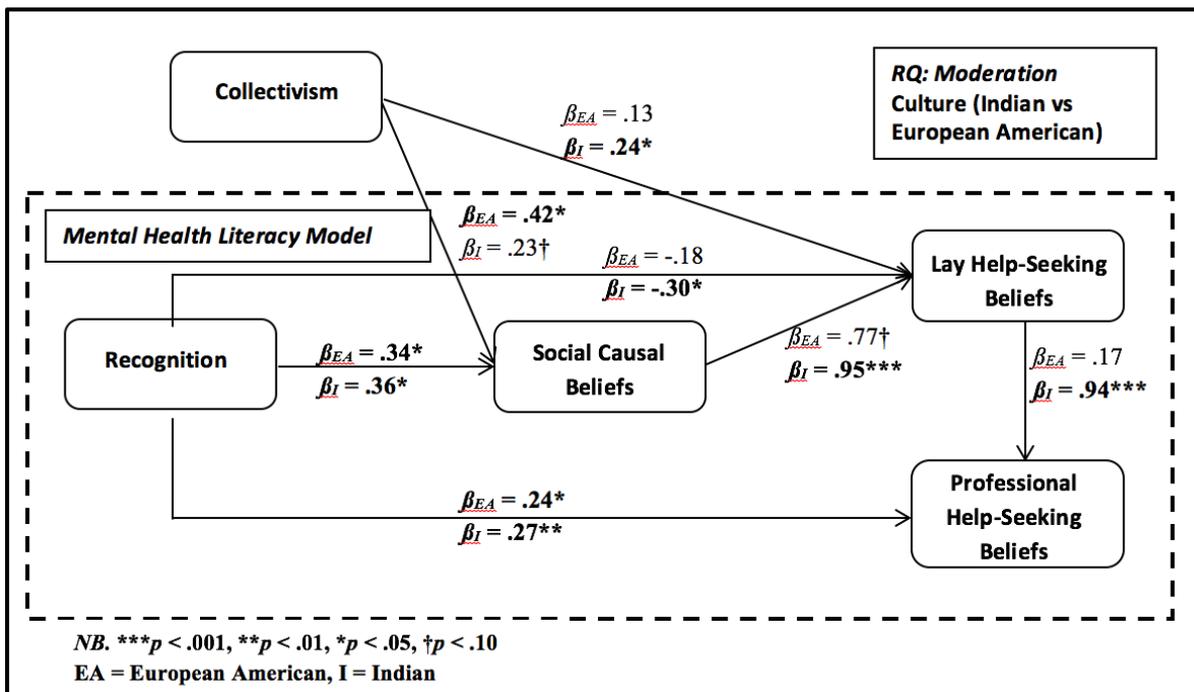
All aspects of *Hypothesis 5* were either fully or partially confirmed (Figure 3.8). First, recognition significantly positively predicted professional help-seeking beliefs in both cultures – supporting to *H5(i)* – and also significantly negatively predicted lay help-seeking beliefs in the Indian sample – lending partial support to *H5(ii)*. This indicates that, on the one hand, both European American and Indians who were better at recognizing mental disorders were more

likely to endorse seeking professional help and, on the other hand, Indians who demonstrated better recognition were less likely to endorse seeking lay help. Thus cultural group significantly moderated the association between recognition and lay help-seeking beliefs, lending further support to the *RQ* – how culture will moderate the MHL model.

Next I examined *Hypothesis 6* – associations of social causal beliefs within the MHL model (Figure 3.8). First, lending partial support to *H6(a)(i)* social causal beliefs were significantly positively associated with lay help-seeking beliefs in the Indian sample, while the association trended towards significance in the European American sample. This indicates that Indian participants who reported greater agreement with social causes were also more likely to endorse seeking lay help. Further, this lends greater insight into the *RQ* – how the MHL model is moderated by culture. Third, *H6(a)(ii)* was refuted as the association between social causal beliefs and professional help-seeking beliefs was non-significant in both cultural groups ($p >$ .05). Finally, *H6(b)* related to biological causal beliefs and because I did not find cross-cultural validity for the biological causal beliefs sub-scale I was unable to examine this hypothesis.

Next, lending support to *H8(i)*, collectivism significantly positively predicted social causal beliefs in the European American sample, while the association trended towards significance in the Indian sample. This indicates that European American participants who reported greater collectivism were more likely to believe symptoms described in the vignette were due to social causes. Finally, *H8(ii)* related to biological causal beliefs, thus I was not able to examine these hypotheses.

Moreover, the association between lay and professional help-seeking beliefs was significant and positive in the Indian sample but non-significant in the European American sample (Figure 3.8). A chi-square difference test confirmed cultural non-equivalence (Table 3.11). In the Indian sample greater endorsement of seeking lay help predicted greater endorsement to seek help from a professional, whereas in the European American sample the

relationship between these two variables was orthogonal. These finding demonstrate how the

MHL model was moderated by culture, lending further insight into the *RQ*.

Table 3.11. Cultural equivalence of model pathways.

			χ^2	df	p
Social Causal beliefs	←	Collectivism	0.17	1	.68
Social Causal beliefs	←	Recognition	10.83	1	.001
Lay help-seeking beliefs	←	Social Causal beliefs	0.16	1	.69
Lay help-seeking beliefs	←	Recognition	0.33	1	.57
Professional help-seeking beliefs	←	Recognition	0.00	1	.98
Professional help-seeking beliefs	←	Lay help-seeking beliefs	21.89	1	.02
Lay help-seeking beliefs	←	Collectivism	0.69	1	.41

3.3.5. Hypotheses 4, 7 and 9: indirect effects

Finally, I tested the indirect effects within the MHL model – examining Hypotheses 4, 7

and 9. The indirect effects were tested via a bootstrapping procedure (Shrout & Bolger, 2002)

that examined the 95% bias-corrected confidence intervals (CI) from 1,000 bootstrap samples.

Lending partial support to *Hypotheses 4(a)* and *9* I found significant indirect effects

between collectivism as well as social causal beliefs and professional help-seeking beliefs

through lay help-seeking beliefs in the Indian sample (Table 3.12). This indicates that Indian

participants who reported greater collectivism and greater endorsement of social causal beliefs

were more likely to endorse seeking lay help and were in turn more likely to hold positive

beliefs about seeking help from a professional. These indirect effects were however non-

significant in the European American sample.

Hypothesis 4(b) was refuted, as the indirect effect between recognition and professional

help-seeking beliefs via lay help-seeking beliefs was non-significant in both cultural groups

(Table 3.12).

Hypothesis 7(a)(i) was partially supported – recognition was indirectly associated with

greater lay help-seeking beliefs via greater social causal beliefs in the European American

sample and the association trended towards significance in the Indian sample (Table 3.12). This

indicates that participants who were better at recognizing symptoms of mental illness were

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Table 3.12. Indirect effects of variables within the MHL model.

IV	Mediator	DV	European American				Indian			
			β	LB	HB	p	β	LB	HB	p
Recognition	Social Causal beliefs	Lay help-seeking beliefs	6.39	.00	.58	.03	9.47	.74	26.21	.07
Collectivism	Social Causal beliefs	Lay help-seeking beliefs	.78	.06	6.02	.007	.77	.00	2.67	.15
Recognition	Lay help-seeking beliefs	Professional Help-Seeking Beliefs	-.19	-1.58	.15	.19	-.43	-3.80	2.72	.83
Collectivism	Lay help-seeking beliefs	Professional Help-Seeking Beliefs	.10	-.36	.07	.29	.65	.18	1.17	.004
Social Causal beliefs	Lay help-seeking beliefs	Professional Help-Seeking Beliefs	.38	-.18	3.37	.13	2.16	4.91	1.11	.002

more likely to believe that these symptoms were caused by social circumstances, which in turn predicted greater endorsement of lay help-seeking. Further, *Hypothesis 7(b)(i)* was partially confirmed as collectivism was indirectly associated with lay help-seeking beliefs through social causal beliefs in the European American sample, while this was not the case in the Indian sample (Table 3.12). This indicates that European American participants who reported greater collectivism were more likely to believe symptoms of mental illness had social causes, which in turn was associated with greater endorsement of seeking lay help. Moreover, *Hypothesis 7(a)(ii)* and *7(b)(ii)* were refuted, as the association between social causal beliefs and professional help-seeking beliefs was non-significant in both cultural groups ($p > .05$).

Finally, the findings of associations between variables and indirect effects within the MHL model give further insight into our *RQ*, confirming that cultural group acted as a moderator to the MHL model.

3.4. Discussion

The present findings showed strong associations between the elements – recognition, causal, lay and professional help-seeking beliefs – of the proposed MHL model (Jorm, 2000, 2011; Jorm et al., 1997a, 1997b, 1997c), lending strong empirical support to the model. However, cultural differences in the MHL model were evident. On the one hand, lay help-seeking beliefs were associated with all other aspects of the MHL model in the Indian sample, whereas in the European American sample lay help-seeking beliefs were not a significant part of the MHL model. On the other hand, collectivism was significantly associated with social causal beliefs in the European American sample and with lay help-seeking beliefs in the Indian sample.

3.4.1. Causal beliefs, professional help-seeking beliefs and lay help-seeking beliefs measures

As discussed previously, good *content validity* of the newly developed measures had been established through inspection of the results in Study 1 as well as examination of studies that

investigated MHL using qualitative approaches (Angermeyer & Dietrich, 2006; Ayalon & Arean, 2004; Dahlberg et al., 2008; Dietrich et al., 2003; Jorm, 2000, 2011; Jorm et al., 1997a, 2006; Peluso & Blay, 2004; Wright et al., 2007). *Construct validity* of the novel measures was examined by means of hypothesis testing. As the present findings followed the hypothesised framework it is fair to conclude that good construct validity was established. *Internal consistency* was established as Cronbach's α values were acceptable (except in relation to GAD, but this data was not analysed in the present study). Finally, *measurement invariance* was established by means of multi-group confirmatory factor analysis, whereby only items invariant across cultural and mental disorders were retained.

In respect to the causal beliefs measure, the items relating to biological causes did not hold cross-cultural invariance (*hormonal imbalance* and *brain damage*). Jorm (2011) proposed that greater recognition of mental illness would activate a particular schema that outlines the type of action to take. However, as the Indian sample showed lower recognition and therefore knowledge of mental disorders, it is likely that they held different schemas about mental illness, therefore making biological causal beliefs irrelevant. Further, the items retained for social causal beliefs appear to be broader (e.g., *traumatic event* and *stress*), while items that did not hold equivalence may have been too situation- or person-specific (e.g., *problems at work* or *relationship problems*).

In relation to the professional help-seeking beliefs measure, the retained items reflect a medical model of mental illness (e.g., *take medication* and *go to psychiatric clinic*). This may be due to perceived accessibility and availability of mental health facilities across cultures. Facilities for mental health issues are scarce in India (WHO, 2011a, 2011b), and even basic satisfactory primary health care is lacking in many rural areas (Khandelwal et al., 2004). Therefore, more specific professional psychological help – like psychologists or psychiatrists – may not have been recognized or perceived as relevant to mental health issues in the Indian sample.

Furthermore, most items of the lay help-seeking beliefs measure were retained, which is in line with previous findings that across cultures individuals with mental health issues draw support from a wide range of informal sources (Chadda et al., 2001; Cooper-Patrick et al., 1997; Van Hook, 1999). This further indicates that there is less cross-cultural variability in potential sources of lay help, although perceived helpfulness of these lay sources may still vary.

3.4.2. Mental Disorders

On the one hand, I aimed to establish cross-cultural validity for the novel MHL measures, and on the other hand I intended to examine three of the most prevalent mental disorders worldwide – depression, schizophrenia, and GAD. Unfortunately, the GAD data did not yield strong results and I was not able to use the GAD data in the analyses. This may be because compared to GAD, depression and schizophrenia receive greater attention in books, TV shows, movies and awareness campaigns (Tartakovsky, 2011). Although the media often misrepresents mental disorders (Tartakovsky, 2011), greater media attention would also indicate greater awareness of these disorders. Indeed, the results showed that compared to GAD, both the Indian and European American sample had greater awareness of the primary symptoms of depression and schizophrenia than GAD and were more likely to recognize depression and schizophrenia as mental disorders.

3.4.3. MHL Model

After establishing equivalence across cultures and mental disorders of the developed MHL measures, I examined the MHL model itself. Overall, I found strong quantitative support for the MHL model. Recognition of symptoms of mental illness was the strongest predictor of all other aspects of the MHL model. In both cultures, greater recognition was associated with more positive professional help-seeking beliefs, while in the Indian sample it was also positively associated with lay help-seeking beliefs. This gives support to the literature that stresses the link between knowing about symptoms of mental illness and endorsement of seeking appropriate help for these symptoms (Jorm et al., 1997b; Lauber, Nordt, et al., 2003;

Wright et al., 2007).

The findings showed an overwhelming cultural difference in the MHL model, namely that in the Indian sample, lay help-seeking beliefs was a major variable, while in the European American sample it did not have any significant associations with other aspects of the model. This gave further credence to the notion that Western schemata of mental illness are mainly related to the Western medical model, whereas non-Western schemata are closely connected to multiple frameworks. From the findings it appears that the European American sample did not view lay help as a relevant source of help in relation to mental health issues. Contrary to the findings, previous literature stressed that across cultures the public appears to hold a preference for seeking help from lay as opposed to professional sources when faced with issues of mental health (Cooper-Patrick et al., 1997; Jorm et al., 1997c; Van Hook, 1999). This indicates that European American participants either perceived lay help as not important in relation to mental health issues or that they were not able to draw on lay sources of help. On the contrary, in the Indian sample lay and professional help-seeking beliefs were highly positively related, which indicates that Indian participants believed that professional sources significantly positively complemented lay ones. Previous literature revealed that in the Indian culture the family holds the main responsibility for treatment and care for a person with mental illness (Khandelwal et al., 2004) and it is more likely that professional help is sought when the in-group endorsed this (Shankar et al., 2006). The present findings showed that Indian participants endorsed lay help to a greater extent than professional help, thus supporting previous studies in that professional help is viewed as merely an additional source of help.

Furthermore, the majority of the MHL literature has examined professional help-seeking beliefs only (Kuo et al., 2007; Tata & Leong, 1994; ten Have et al., 2010), the present findings underline the importance of examining lay help-seeking beliefs as well, because it appears that Indians perceive lay help-seeking as a predictor of professional help-seeking.

Moreover, I found an indirect effect between collectivism and professional help-seeking

beliefs through lay help-seeking beliefs in the Indian sample, with greater collectivism being related to more positive beliefs about seeking lay help and in turn greater endorsement of seeking professional help. Interestingly, contrary to previous findings (Kuo et al., 2007; Tata & Leong, 1994; Yeh, 2002), I did not find a direct relationship between collectivism and professional help-seeking beliefs in either culture. It appears that in highly collectivist cultures, individuals are more likely to perceive seeking help from lay sources as favourable, and in turn they would perceive seeking help from professionals positively. This gives further credence to the notion that in non-Western cultures mental illness schemata are connected to multiple frameworks (with the medical model being one of these).

Further, contrary to previous research (Chen & Mak, 2008; Sheikh & Furnam, 2000), endorsement of social causes of mental illness was not related to professional help-seeking beliefs. This may be because I was only able to examine social causes, whereas biological causes may have been more relevant to professional help-seeking beliefs. However, lending some support to previous findings (Chen & Mak, 2008; Sheikh & Furnam, 2000), I did find that social causal beliefs were indirectly related to professional help-seeking beliefs through lay help-seeking beliefs in the Indian sample. Furthermore, as predicted, greater endorsement of social causes was related to more positive lay help-seeking beliefs in the Indian sample. That is, individuals who believed that mental illness was due to social causes were also more likely to endorse reaching out to the social environment to manage these symptoms. Thus, in line with attribution theories, causal beliefs were significantly related to help-seeking beliefs (Heider, 1958; Jones et al., 1972).

Finally, in the European American sample greater collectivism was associated with greater endorsement of social causal beliefs. The literature suggested that collectivists would be more likely to attribute causes of mental illness to the community (Dietrich et al., 2004; Narikiyo & Kameoka, 1992; Speller, 2005). One reason that I only found this significant association in the European American sample may be because more collectivist cultures already

heavily rely on social explanations for mental illness (Penny et al., 2009; Shankar et al., 2006). It appears that mental illness schemata in more collectivist cultures are closely connected to social factors. Thus, social causes of mental disorders may be the baseline explanation in Indian cultures, whereas in the European American sample it may be perceived as one of several explanations.

3.4.4. Strengths, limitations, and future directions

One of the main strengths of the present study was that it adopted a quantitative approach to examine the MHL model. This is in contrast to many studies that either employed a qualitative approach (Dietrich et al., 2004; Jorm, 2000, 2011; Jorm et al., 1997a, 1997b, 1997c; Lauber et al., 2001; Lauber, Nordt, et al., 2003; Reavley & Jorm, 2011a; Wright et al., 2007), or only studied particular aspects of MHL quantitatively (Atkinson et al., 1991; Kuo et al., 2007; Tata & Leong, 1994; Yeh, 2002). Neither approach facilitates the examination of the elements of MHL with each other, nor does it allow the study of MHL in relation to other variables. In the present study I developed MHL measures that held cross-cultural equivalence, which enabled me to attend to these shortcomings, further identify cultural differences in MHL, and identify collectivism as a predictor of MHL.

A further strength of the present study was that I examined professional as well as lay help-seeking beliefs. Most studies investigating MHL have solely focused on professional help-seeking beliefs (Kuo et al., 2007; Tata & Leong, 1994; ten Have et al., 2010), despite the public's preference and widespread use of lay sources (Chadda et al., 2001; Cooper-Patrick et al., 1997; Jorm et al., 1997c; Van Hook, 1999). The present study rectified this shortcoming and found that lay help-seeking beliefs were indeed a crucial aspect of MHL in the Indian sample. Further, the literature showed that some cultures – including India – rely heavily on traditional and spiritual healers (Khandelwal et al., 2004). Because alternative medicine and spiritual leaders are core sources of help in some cultures, future research should examine whether they should be incorporated into the MHL model.

The present approach necessarily had limitations. First, presentation of the symptoms of mental illness may vary between cultures (Bhugra, 2006; Williams & Healy, 2001), engendering the possibility that Indians were lower in recognition because these symptoms were irrelevant to their culture. It is important to note, however, that although interpretations of mental illness can vary between cultures, the core symptoms of mental illness remain universal (Bhugra, 2006; Williams & Healy, 2001), and the vignettes used in the current study focused on the core symptoms.

Another limitation stems from the use of the expectation-maximisation method to infer missing values, and therefore findings need to be interpreted with caution. However, the alleged shortcomings of the expectation-maximisation method – e.g., multiple modes, saddlepoints, ridges – should be interpreted as inherent features of the algorithm, because expectation-maximisation fares well in comparison to other computational methods (Schafer, 1997).

3.4.5. Conclusion

To sum up, the present study revealed significant cultural differences in recognition as well as beliefs about causes and help-seeking for mental illness. This underlines the importance of understanding beliefs of mental illness in different cultures in order to develop more effective, approachable, and culturally sensitive mental health care systems. In doing so individuals like the Rwandan man whom I mentioned in section 1.4, who was puzzled by the cultural differences in mental health care, do not need to wonder what "bizarre [things]" (Solomon, 2010, 16:10) mental health workers are providing.

4. The Mental Health Literacy Model, Collectivism and Mental Illness Stigma

As discussed in Chapter 1, studies that examine MHL draw on the MHL and mental illness stigma literature interchangeably, and the same is the case for studies investigating mental illness stigma (see Abdulla & Brown, 2011; Angermeyer & Dietrich, 2006). Although MHL and mental illness stigma both come under the umbrella of beliefs about mental illness, they remain distinctive concepts. The former encompasses knowledge and beliefs about symptoms, causes and help-seeking for mental disorders, while the latter comprises prejudicial beliefs and discrimination towards people with a mental disorder. Inevitably, therefore, the methodologies to measure these concepts differ – MHL literacy studies are generally qualitative in nature and employ vignettes describing a person with symptoms of a particular mental disorders (Dietrich et al., 2004; Jorm, 2000, 2011; Jorm et al., 1997a, 1997b, 1997c; Lauber et al., 2001, Lauber, Falcato, et al. 2003; Reavley & Jorm, 2011a; Wright et al., 2007), whereas mental illness stigma studies generally utilise a survey design that measures prejudicial beliefs (Angermeyer & Matschinger, 1996; Angermeyer et al., 2004; Anglin et al., 2006; Arkar & Eker, 1994; Feldman & Crandall, 2007; Freeman, 1961; Gureje et al., 2005; Lauber, Nordt, et al., 2003). The literature that has examined the link between MHL and mental illness stigma is almost non-existent.

One study that explored the link between these two concepts was conducted by Shea and Yeh (2008), who investigated professional help-seeking beliefs and perceived stigma for receiving psychological help in Asian American students. They found that participants who reported greater stigma were significantly less likely to endorse seeking psychological help for symptoms of mental illness. Shea and Yeh (2008) merely investigated a single aspect of MHL and only one type of mental illness stigma, leaving open the question of whether the negative relationship between MHL and mental illness stigma would generalise further. This constitutes the main aim of the present analysis, namely to examine the relationship between the MHL model and mental illness stigma.

4.1.1. Collectivism and mental illness stigma

The present investigation also examined the relationship between collectivism and mental illness stigma. Research has shown that individuals from cultures and ethnicities that are considered to be more collectivist report greater mental illness stigma (e.g., Anglin et al., 2006). For example, Lauber and colleagues (2004) investigated mental illness stigma – in the form of preference for social distance towards people with a mental illness – in Swiss ethnicities and found that Italian participants preferred greater social distance compared to their French and German counterparts. Similarly, Magliano and colleagues (2004) found that participants from Southern Italy, compared to their Northern counterparts, reported greater endorsement of stigmatising beliefs – in regards to patients' civil rights, unpredictability and social competence. Both Italians compared to French and Germans (Hofstede et al., 2010) as well as South Italians compared to North Italians (Martella & Maass, 2000) are more collectivistic and thus these studies support the notion that collectivism plays a role in variation of mental illness stigma.

However, studies examining collectivism as a variable in relation to mental illness stigma are scarce. Ku (2007) examined collectivism in relation to mental illness stigma in Chinese Australian, Anglo Australian and mainland Chinese samples and found that collectivism was significantly positively related to preference for social distance (the fear and the desire for excluding people with a mental illness from the community) and dislike towards people with a mental illness. Similarly, Papadopoulos (2009) and Papadopoulos and colleagues (2012) focused on English, Greek or Greek Cypriot, American and Chinese samples living in the UK. In contrast to Ku's (2007) findings, they reported mixed results regarding the relationship between collectivism and mental illness stigma. They found that greater collectivism was associated with greater endorsement of authoritarianism (the belief that people with mental disorders are different and inferior to people who are not mentally ill and that their life decisions should be made by others) and social distance in the American sample and further that collectivism was significantly negatively associated with community mental health inventory

(the acceptance of mental health facilities and people with mental illness in the community) in the American and the Chinese samples. A limitation of Ku's (2007), Papadopoulos' (2009) and Papadopoulos and colleagues' (2012) studies is that collectivism was conceptualised as a continuous variable along a single dimension as the opposite pole of individualism, instead of as being orthogonal to individualism. Nonetheless, these findings indicate that aspects of collectivism may be related to mental illness stigma, but that the relationship is more complicated than studied to date.

Figure 4.1. Proposed Mental Health Literacy Model with Mental Illness Stigma.
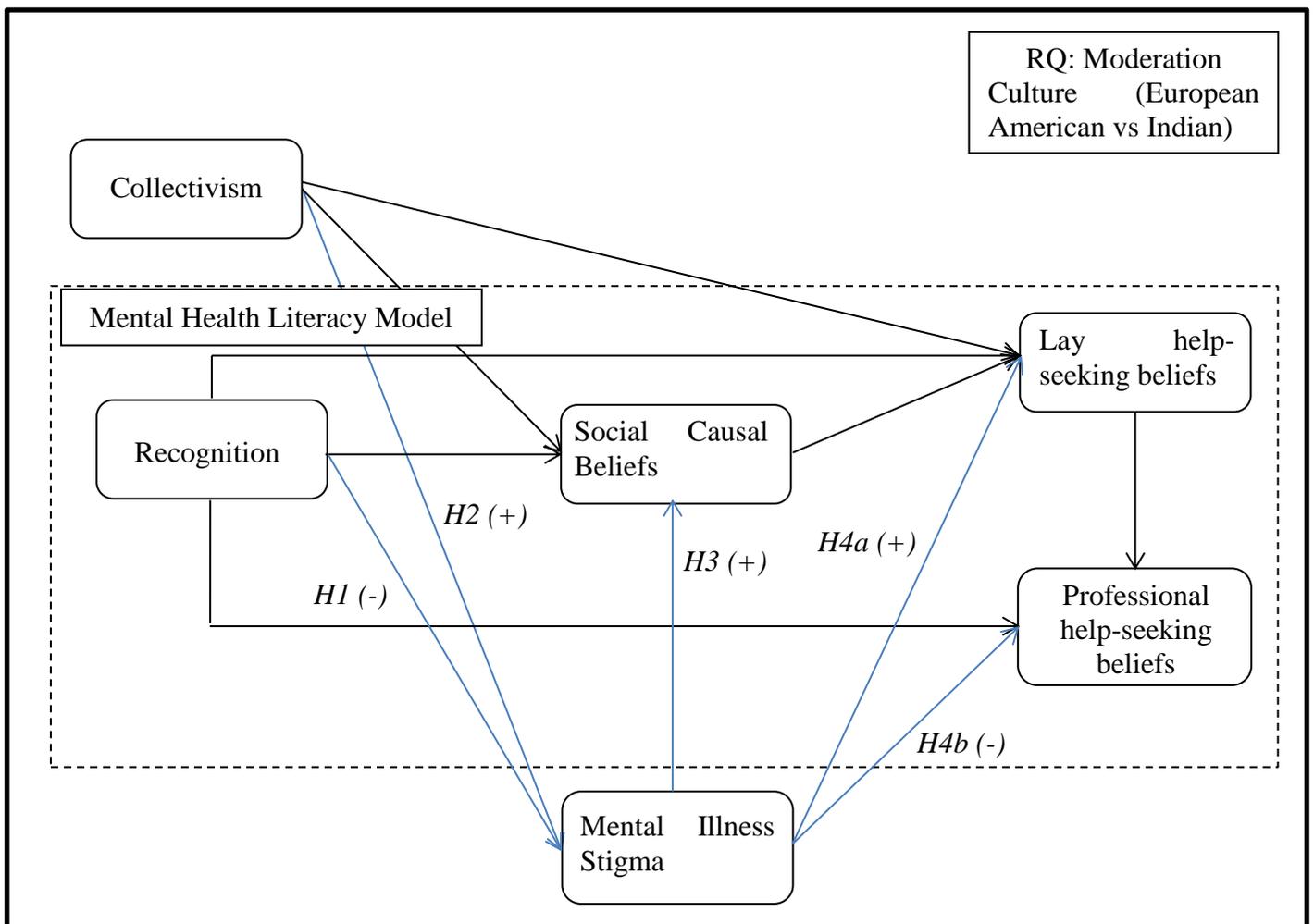
4.1.2. Hypotheses

The present investigation is novel in several ways: (a) it examines mental illness stigma in relation to the MHL model, (b) it does so by studying mental illness stigma in the form of

social distance, (c) the relationship between mental illness stigma and MHL is analysed cross-culturally in European Americans and Indians, and (d) collectivism – conceptualised as a continuous variable and orthogonal from individualism – was examined in relation to mental illness stigma. Figure 4.1 depicts the hypothesised model as moderated by culture. Below I outline the hypotheses that were proposed and remind the reader of their respective supporting literature.

Differences in mental illness schemata explained variation in recognition, causal and help-seeking beliefs of mental disorders, it is likely then that stigma would also be shaped by these schemata. The literature demonstrated that better recognition – and therefore knowledge – of mental disorders is significantly associated with knowledge about treatment options and beliefs about causes of mental disorders (Jorm et al., 1997b; Lauber, Nordt, et al., 2003; Wright et al., 2007). It would follow, then, that the association would transfer to mental illness stigma; namely that more accurate knowledge about mental disorders in general would dispel inaccurate stigmatising beliefs and discrimination. Therefore, it was hypothesised that:

H1: Recognition will be significantly negatively associated with mental illness stigma in both cultural groups.

The literature that has examined culture in relation to mental illness stigma – either by comparing more and less collectivist cultures (Anglin et al., 2006; Lauber et al., 2004; Magliano et al., 2004) or by examining collectivism as a continuous variable (Ku, 2007; Papadopoulos et al., 2009, 2012) – generally found that greater collectivism predicted greater mental illness stigma. Contrary to the latter two studies, the present investigation studied collectivism as orthogonal from individualism, and predicted that:

H2: Greater collectivism will be significantly associated with greater mental illness stigma in both cultural groups.

The literature found that while the public worldwide tends to favour social causes of mental illness (Angermeyer & Dietrich, 2006; Beck et al., 2003; Jorm, 2000), individuals from

Asian, compared to European cultures, endorse social causes significantly more (Dietrich et al., 2003; McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992). Thus because both mental illness stigma and endorsement of social causes are high in non-Western cultures, it was hypothesised that:

H3: *Greater mental illness stigma will be significantly associated with greater endorsement of social casual beliefs in the European American, but not the Indian cultural group.*

In non-Western cultures lay help is seen as the main source of help for symptoms of mental illness (McCabe & Priebe, 2004). Particularly in India traditional healers and the family are seen as the main source of help (Ganesh, 2011; Grewal, Bottorff, & Hilton, 2005; Khandelwal et al., 2004; Kishore et al., 2012; Shankar et al., 2006), whereas accepting professional help can be seen as a failure in one's role and duties (Lawrence, Murray, Samsi, & Banerjee, 2008). On the other hand, in Western cultures professional help is more readily available and accepted as the main source of treatment for mental illness (WHO, 2011a, 2011b). Instead, patients from European cultures report that they did not want to "burden" to friends and family with their mental health issues (Weiss et al., 2001, p. 82). Thus it was proposed that:

H4: *Greater mental illness stigma will be significantly associated with a) lesser endorsement of lay help-seeking beliefs in the European American, but not the Indian, sample and (b) lesser endorsement of professional help-seeking beliefs in the Indian, but not the European American, sample.*

4.2. Method

The sample and method were the same as in Chapter 3. The variable that was additionally examined in the present chapter was mental illness stigma, which was measured using the Social Distance Scale (SDS; Link, Cullen, Frank, & Wozniak, 1987). The measure's five items were presented following each vignette. Sample items included, "How would you feel about living next door to someone like the person described above" and "How would you feel about

working with someone like the person described above". The items were rated on a 5-point scale ranging from 1 (*definitely willing*) to 5 (*definitely unwilling*), so that greater scores reflected greater mental illness stigma. A *t*-test, with culture as the group variable, revealed that European American ($M = 45.85$, $SD = .99$) and Indian ($M = 43.42$, $SD = 1.27$) participants did not significantly differ on mental illness stigma ($p > .05$). See Table 4.1 for correlations between predictor and outcome variables.

Table 4.1. Correlations between predictor and dependent variables by sample (European American above axis shaded grey, Indian under axis).

	1	2	3	4	5	6
1. Mental illness stigma		.10	-.11	.02	.001	-.01
2. Recognition	.23*		.01	.05	-.33***	-.02
3. Social causal beliefs	.13	-.28**		.34***	.13	-.29**
4. Lay help-seeking beliefs	.36***	-.02	.60***		.20*	-.36***
5. Professional help-seeking beliefs	.16	-.27**	.59***	.71***		-.02
6. Collectivism	-.05	.07	-.21*	-.36***	-.36***	

NB. ***p < .001, **p < .01, *p <.05, †*p* < .10

4.3. Results

As in the first part of the study, I used multi-group structural equation modelling to test the hypothesized moderation model (Figure 4.1). As in Chapter 3, before commencing model testing, I created two item parcels to represent mental illness stigma (one in relation to the depression and the other in relation to the schizophrenia vignette). Refer back to this chapter for details about methodology.

The model held a good fit when allowed to vary freely across groups (Model 1 in Table 4.2). Inspection of the regression weights showed some non-significant loadings in both cultural groups (ps > .05)[6]. Thus I tested further models by removing any paths between mental illness stigma and other latent variables that were non-significant in both cultures, until all remaining paths were significant in either cultural group. See Table 4.2 for order of path removal. The final model held a good model fit (Model 4 in Table 4.2).

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[6] See Appendix 9.4. for details.

Table 4.2. Model testing.

	χ^2	df	p	CFI		RMSEA		$\Delta\chi^2$	df	p
						LB	HB			
Model 1	133.01	84	.001	.95	.05	.04	.07			
Model 2: removed *Collectivism* → *SDS*	133.03	86	.001	.95	.05	.04	.07	0.02	2	.99
Model 3: removed SDS → Lay help-seeking beliefs	138.70	88	<.001	.95	.05	.04	.07	5.67	2	.06
Model 4: removed SDS → Professional help-seeking beliefs	142.21	90	<.001	.94	.05	.04	.07	3.51	2	.17

Figure 4.2. Refined Mental Health Literacy Model with Mental Illness Stigma (i.e., Social Distance). Standardized beta values. Significant loadings are bolded.
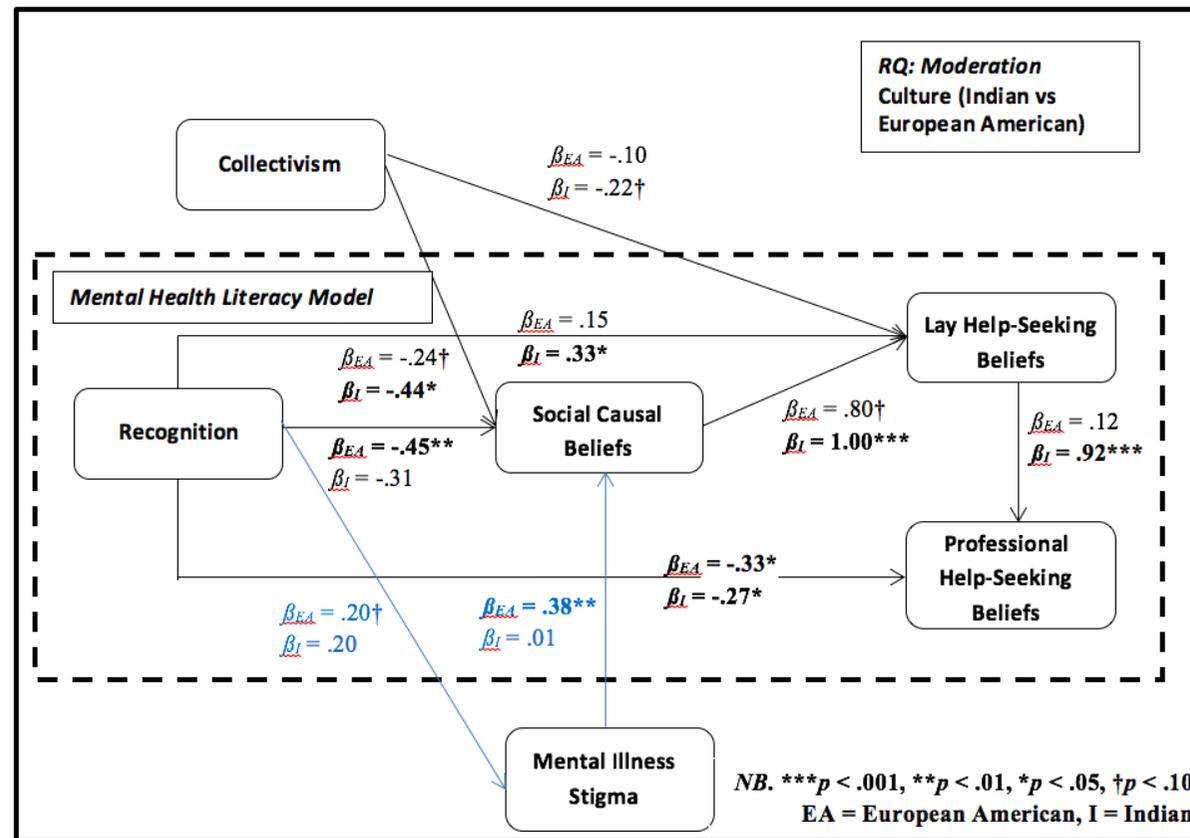
Next, the paths in the final model were examined. *H2*, *H4a* and *H4b* were refuted, as mental illness stigma was not significantly associated with collectivism, lay or professional help-seeking beliefs respectively in either sample (ps > .05). Contrary to *H1*, the relationship between recognition and mental illness stigma trended towards significance in the European American sample in a positive direction (Figure 4.2). This indicates that European Americans who reported greater recognition tended to endorse more mental illness stigma.

Further, supporting *H3*, mental illness stigma was significantly positively related to social causal beliefs in the European American sample, but non-significantly related in the Indian sample (Figure 4.2). This indicates that European American participants who reported greater stigma were significantly more likely to endorse social causal beliefs.

4.4. Discussion

The present investigation is a significant contribution to the literature focusing on beliefs about mental illness because it empirically studied the relationship between the MHL model and mental illness stigma. Unfortunately, the findings showed limited associations between mental illness stigma and the MHL model.

Indeed, mental illness stigma was only significantly positively associated with social causal beliefs in the European American sample, indicating that European American participants who reported greater stigma were significantly more likely to endorse social causal beliefs. Interestingly, the mean values of mental illness stigma or social causal beliefs did not significantly differ between European American and Indian cultural groups, indicating that another variable may have been influencing this relationship. One explanation for this is that in Western cultures mental illness can be perceived as burdening family, friends and the community (Weiss et al., 2001), thus, in this context, if it is believed that the mental illness is due to the community, mental illness is more likely to be stigmatised. However, determining whether this was the case was beyond the scope of the present investigation and should be considered in future research.

Also, the association between recognition and mental illness stigma positively trended towards significance in the European American sample, while it was non-significant in the Indian sample. I hypothesised that individuals who identify symptoms of mental illness as such would be less likely to report stigmatising beliefs towards these illnesses, because research has shown that more educated individuals endorse mental illness stigma less (Angermeyer & Matschinger, 1996; Freeman, 1961; Mojtabai, 2010). However, research has also shown that medical and mental health professionals report similar, if not greater stigma towards people with a mental illness (Caldwell & Jorm, 2001; Jorm et al., 1999; Magliano et al., 2004), indicating – in line with the present findings – that recognising symptoms of mental illness does not necessarily imply holding less stigmatising beliefs. Nonetheless, the present findings should be viewed with caution as the association merely trended towards significance.

Further, mental illness stigma was not significantly associated with either lay or professional help-seeking beliefs. This is contrary to Shea and Yeh's (2008) results, who found that participants who reported greater perceived stigma were significantly less likely to endorse seeking psychological help for symptoms of mental illness. The discrepancy between their findings and the present results may stem from the varying conceptualisations of mental illness stigma; namely the present study conceptualised it as social distance while Shea and Yeh (2008) studied perceived stigma for receiving psychological help.

Some of the literature has purported that greater collectivism is associated with greater endorsement of mental illness stigma (Abdulla & Brown, 2011; Anglin et al., 2006; Ku, 2007; Lauber et al., 2004; Magliano et al., 2004). On the other hand, in the present investigation, in both cultural groups, collectivism was not significantly related to mental illness stigma. This echoed Papadopoulos' (2009) and Papadopoulos and colleagues' (2012) results, which demonstrated that collectivism was related to certain prejudicial beliefs in only some ethnic groups. One explanation for this discrepancy is that in the present investigation collectivism was studied as an overall concept, while the literature often refers to specific aspects of

collectivism as opposed to the overall concept in explaining variation of mental illness stigma (see Abdulla & Brown, 2011). Indeed, the literature suggested that more specific aspects of collectivism – for instance, conformity to norms, familial obligations, family honour and familial support – would be good predictors of mental illness stigma (Abdulla & Brown, 2011; Lauber & Rössler, 2007; Sanchez & Gaw, 2007; Weiss et al., 2001). Thus, future studies may want to empirically examine the relationship between more specific aspects of collectivism in relation to mental illness stigma (this approach was taken in Chapter 6).

One limitation with the present approach is that only one type of mental illness stigma, namely social distance, was studied. It is conceivable that other types of stigma may be more strongly related to MHL and therefore Study 3 examined other types of mental illness stigma (authoritarianism, benevolence, community mental health ideology) in this regard. It is noteworthy, though, that social distance is perhaps the most commonly-studied conceptualisation of mental illness stigma (Angermeyer & Matschinger, 1996; Arkar & Eker, 1994; Lauber, Nordt, et al., 2003; Matschinger & Angermeyer, 1996).

4.4.1. Conclusion

Overall, the present findings urge caution to the literature that interchangeably uses results from studies examining MHL and mental illness stigma to rationalise their hypotheses and findings (see Abdulla & Brown, 2011; Angermeyer & Dietrich, 2006). The present findings showed that mental illness stigma – conceptualised as social distance – was not significantly related to most aspects of MHL. While the previous chapters examined MHL and the present chapter examined its relationship with mental illness stigma, the following chapters will exclusively focus on mental illness stigma.

5. The Mental Illness Stigma model

Hi there, I'm sorry to disappoint you if you were expecting a lunatic with a knife or on some sort of rampage. My name is Stuart and I was diagnosed with schizophrenia.

(Time to Change, 2010, 0:54)

This is the opening line of an advert aiming to reduce stigmatisation of schizophrenia in the UK and plays on common negative stereotypes about people diagnosed with the disorder (Mind, 2009). As was introduced in Chapter 1, stigma towards people with not only schizophrenia but with a mental illness in general is widespread amongst the public, friends and relatives of people with a mental illness as well as amongst mental health professionals (Corrigan, 2000; Corrigan & Watson, 2002; Kirkby & James, 1979; Ku, 2007; Magliano et al., 2004; Ngirababyeyi, 2012; Sévigny et al. 1999; Tanaka et al. 2004; Vibha et al., 2008). Several different types of prejudicial beliefs have been investigated (e.g., *unpredictability*, Angermeyer & Matschinger, 1996; *dangerousness*, Angermeyer et al., 2004; Anglin et al., 2006; *violence*, Anglin et al., 2006), yet the main four prejudicial beliefs that hold across studies are *authoritarianism*, *benevolence*, *community mental health ideology* and *social distance* (Taylor et al., 1979; Taylor & Dear, 1981). While these prejudicial beliefs have been studied cross-culturally (Angermeyer et al., 2003; Barke et al., 2011; Corrigan, Edwards, et al., 2001; Papadopoulos et al., 2012; Shokoohi-Yekta & Retish, 1991; Vijayalakshmi et al., 2013), a measure that has adequately been validated for cross-cultural use is non–existent to the best of my knowledge. Therefore, the first aim of the present chapter was to address this by cross-culturally validating a commonly used measure of mental illness stigma.

5.1.1. Community Attitudes toward the Mentally Ill (CAMI) measure

The community attitudes towards the mentally ill (CAMI) measure by Taylor and colleagues (1979) and Taylor and Dear (1981) has been widely used to measure mental illness stigma. It is comprised of 40 items with four sub-scales, each measuring *authoritarianism*, *benevolence*, *community mental health inventory* and *social distance* respectively. However,

the literature has not always found the same four factors and most studies have modified the original measure (e.g., Brockington et al., 1993). Furthermore, some studies conducting factor analyses on the measure have found different factors altogether, including: *open-minded & pro-integration*, *fear and avoidance* and *community mental health inventory* (Högberg et al., 2008); *fear and exclusion*, *social control* and *goodwill* (Morris et al., 2012); *distance*, *positive attitude & tolerance* and *demands of psychiatric patients* (Sørensen & Sørensen, 2013) as well as *benevolence*, *social exclusion due to negative attributes* and *social exclusion due to personal reactions* (Sévigny et al., 1999).

The present research favoured the CAMI measure over others measuring mental illness stigma (e.g., Opinions about Mental Illness scale, Cohen & Struening, 1962; Day's Mental Illness Stigma scale, Day, Edgren, & Eshleman, 2007), because it has been utilised in a variety of nations, including: *Canada* (Howell, Weikum, & Dyck, 2011; Taylor & Dear, 1981), *China* (Sévigny et al., 1999), *Finland* (Chambers et al., 2010), *India* (Vibha et al., 2008), *Ireland* (Chambers et al., 2010; Morris et al., 2012), *Italy* (Chambers et al., 2010; Morris et al., 2012), *Lithuania* (Chambers et al., 2010; Morris et al., 2012), *Norway* (Sørensen & Sørensen, 2013), *Portugal* (Chambers et al., 2010; Morris et al., 2012), *Sweden* (Högberg et al., 2008; Högberg et al., 2012), *UK* (Addison & Thorpe, 2004; Brockington et al., 1993; Chambers et al., 2010; Guise et al., 2010; Morris et al., 2012; Papadopoulos et al., 2002, 2012; Wolff et al., 1996) and the *USA* (Chew et al, 2009; Granello & Granello, 2000; Masuda et al., 2009). Masuda and colleagues (2009) administered the CAMI measure to Japanese international and American university students at a university in the USA. They found great variability in reliabilities of the sub-scales between ethnicities, with reliabilities being lower in the Japanese compared to the American sample. In particular, the authoritarian sub-scale was not reliable in the Japanese sample ($\alpha = .39$) while reliability was good in the American sample ($\alpha = .80$). Similarly, Morris and colleagues (2012) aimed to establish validity of the CAMI measure in Finland, Lithuania, England, Ireland, Italy and Portugal. They performed confirmatory factor analyses on the

original version (Taylor et al., 1979; Taylor & Dear, 1981), as well as on modified versions from Högberg and associates (2008) and Wolff and colleagues (1996). They found a poor model fit for both the original CAMI measure – for example, several items did not significantly load onto the sub-scales – as well as Högberg and associates' (2008) modified CAMI measure. However, Morris and colleagues (2012) did find an acceptable model fit for Wolff and colleagues' (1996) version after making further adjustments. One limitation with this study is that the authors inspected the overall model fit and made several adjustments to the measure (e.g., removing several non-significant loadings or constraining associations between items) before re-examining the model fit. As such they did not establish cross-cultural validity for individual scale items of the CAMI measure. Masuda and colleagues' (2009) findings as well as Morris and colleagues' (2012) findings demonstrate that the CAMI measure, in its original form, is not suitable for cross-cultural comparison.

The present study aimed to address Morris and colleagues' (2012) limitation by examining the cross-cultural validity of the individual items of the Taylor and colleagues' (1979) and Taylor and Dear's (1981) original version of the CAMI measure. Thus the following hypothesis was proposed:

> *H1: The sub-scales of the CAMI measure (authoritarianism, benevolence, community mental health inventory and social distance) will show good cross-cultural validity when individual items are analysed.*

5.1.2. Mental Illness Stigma Model

The second aim of the present chapter was to cross-culturally validate the mental illness stigma model. To recap, Corrigan (2000) and Corrigan and Watson (2002) proposed a socio-psychological model of mental illness stigma that encompasses stereotypes, prejudice and discrimination. The first aspect, the stereotype, is generally a negative knowledge construct that serves the purpose to efficiently generate an understanding of members belonging to a certain group (Corrigan & Watson, 2002). The second aspect, prejudice, involves an evaluative

component – i.e. agreement with the stereotype – and may produce an emotional response (Corrigan & Watson, 2002). Finally, a behavioural response, namely discrimination, may follow once individuals endorse prejudicial beliefs (Corrigan & Watson, 2002).

Endorsement of prejudicial beliefs, and not merely knowing about stereotypes, is significantly related to displaying discriminatory behaviour (Corrigan, 2000; Corrigan, Edwards, et al., 2001; Corrigan & Watson, 2002). Therefore, the present study will only focus on prejudicial beliefs and discrimination of the mental illness stigma model. Further, although some studies have examined the emotional component of prejudice (Angermeyer et al., 2004; Angermeyer & Matschinger, 1997, 2003a; Penn et al., 1994), most research has focused only on prejudicial beliefs (Anglin et al., 2006; Corrigan, River, et al., 2001; Crandall & Moriarty, 1995; Holmes et al., 1999; Lauber et al., 2004; Penn et al., 1999), as such the present research will follow suit. Because social distance represents a person's willingness to engage with individuals with a mental illness, social distance has been used as a proxy for the discrimination aspect of mental illness stigma (Angermeyer et al., 2004; Angermeyer & Matschinger, 2003a; Corrigan et al., 2001; Link et al., 1987). This approach will also be adopted in the present investigation.

The literature has examined the link between prejudice and discrimination towards individuals with a mental illness by means of SEM (Angermeyer et al., 2004; Angermeyer & Matschinger, 1997, 2003a; Corrigan et al., 2001). For example, Angermeyer and Matschinger (2003a) investigated the prejudicial beliefs of perceived dangerousness and perceived dependency, and social distance as discrimination. They found that perceived dangerousness significantly predicted greater preference for social distance while perceived dependency significantly predicted less. Similarly, Corrigan and colleagues (2001) investigated the prejudicial beliefs of authoritarianism and benevolence in relation to social distance. They found that both greater authoritarianism and greater benevolence significantly predicted greater social distance. Thus, both Angermeyer and Matschinger's (2003a) findings and Corrigan and

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colleagues' (2001) findings support the positive association between being prejudice towards and discriminating against people with a mental illness.

Angermeyer and colleagues (2004) examined the relationship between prejudice and discrimination towards mental illness cross-culturally. They tested the mental illness stigma model – utilising perceptions of dangerousness and perceptions of dependency, and social distance – in Russian and Mongolian samples. Their results showed that prejudice significantly positively predicted discrimination in both cultural groups.

Figure 5.1. Proposed Mental Illness Stigma model.
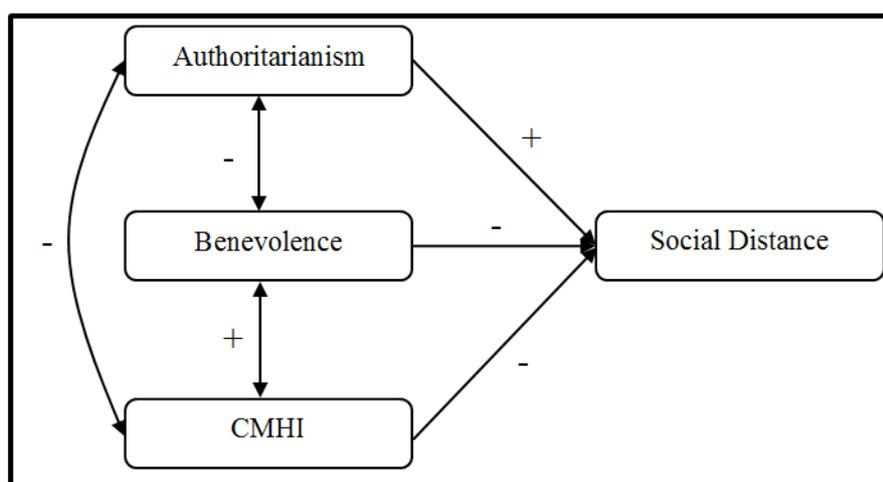
To the best of my knowledge the mental illness stigma model – employing the common prejudicial beliefs *authoritarianism*, *benevolence* and *community mental health ideology* – and discrimination conceptualised as *social distance* has not been previously tested cross-culturally. The present study aimed to address this gap and tested the model of mental illness stigma displayed in Figure 5.1. Cross-cultural equivalence was tested by means of multi-group SEM in European American and Indian samples. As in Chapters 3 and 4, the cultural groups were chosen because, first, India scores significantly higher on collectivism than the USA (Hofstede, 1980, 2001); second, mental illness stigma in India is shown to be high (Abdulla & Brown, 2011; Thara & Srinivasan, 2000; Vijayalakshmi et al., 2013; Weiss et al., 2001); and, third, because they differ in their availability of mental health facilities, with significantly greater availability of professional mental health care in the USA (WHO, 2011a, 2011b). Thus the

following hypothesis was proposed:

>   *H2: The mental illness sigma model displayed in Figure 5.1 will demonstrate good cross-cultural validity.*

5.2. Method

5.2.1. Ethics Statement

Ethical approval was obtained from the Brunel University Psychology Research Ethics Committee. Participants provided written informed consent at the beginning of the survey and all responses were confidential.

5.2.2. Participants

European Americans currently living in the USA ($N = 112$) and Indians currently living in India ($N = 138$) participated in this study. To identify mean differences, I conducted chi-square tests and t-tests of demographic variables with culture as group variable (see Table 5.1). The Indian sample was significantly younger, was made up of significantly more men and was significantly more educated than the European American sample. There was no significant cultural difference in familiarity with mental illness.

5.2.3. Procedure

The study was conducted online through a survey-building website. Participants were invited to take part in a study about knowledge and beliefs about mental health. A hyperlink to the survey was distributed through a London university's intranet site, social networking sites, and through Amazon's Mechanical Turk[7], where participants were offered $0.30 upon completion of the survey (IP addresses were inspected to ensure there were no multiple entries). All materials were in English only.

5.2.4. Measures

Socio demographic variables – i.e., age, gender, familiarity, education – were measured

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[7] 96% of participants were recruited through MTurk.

in the same way as in Studies 1 and 2 (please refer to Chapter 2 for details. Participants also answered a set of measures that were not used in the current analysis (for details please see Chapter 6).

Table 5.1. Demographic Variables – Means, Standard Deviations, and chi-square tests and *t*-tests.

	Culture	*M*	*SD*	*t*	*df*	*p*
Age	European American	33.61	12.82	2.31	248	.02
	Indian	30.43	8.91			
Familiarity	European American	7.86	3.21	-.05	247	.96
	Indian	7.88	3.23			
		Frequencies		X^2	*df*	*p*
		Indian	European American			
Gender	Female	54	66	9.71	1	.002
	Male	84	46			
Education	Less than high school	1	1	43.72	6	<.001
	High school graduate	10	16			
	Some university	18	48			
	University graduate	68	37			
	Master degree	39	8			
	Doctorate	1	2			
	Other	1	0			

Table 5.2. Scale means, standard deviations and reliability coefficient [European American & Indian (latter shaded in grey)].

	Authoritarian	Benevolence	CMHI	Social Distance
Mean				
All items	21.52	40.65	36.54	21.36
	29.38	34.73	32.01	26.89
Retained items	-	19.89	14.25	12.03
	-	17.07	11.25	16.74
SD				
All items	6.21	6.20	8.12	7.45
	3.65	5.91	5.12	5.02
Retained items	-	3.41	3.88	4.49
	-	3.39	3.46	4.38
α				
All items	.77	.85	.93	.90
	.15	.73	.70	.60
Retained items	-	.69	.88	.84
	-	.60	.80	.73

The Community Attitudes Toward the Mentally Ill (CAMI; Taylor et al., 1979; Taylor & Dear, 1981) measure was employed to measure stigma towards mental illness. The measure consists of 40 items that were assessed on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The CAMI is a four-dimensional measure that assesses *authoritarianism*, *benevolence*, *community mental health ideology* and *social distance*. Each

sub-scale consists of 10 items; the first five indicate positive endorsement of stigma while the last five are negative. The last five items were reverse coded so that the scales reflected greater endorsement of the prejudicial belief or discrimination. Sample items include, "Less emphasis should be placed on protecting the public from the mentally ill" (authoritarianism sub-scale, reversed item), "The mentally ill don't deserve our sympathy" (benevolence sub-scale, reversed item), "The best therapy for many mental patients is to be part of a normal community" (community mental health ideology sub-scale), and "I would not want to live next door to someone who has been mentally ill" (social distance sub-scale). See Table 5.2 for means, standard deviations and reliabilities, see Table 5.3 for all items of the sub-scales and see Table 5.4 for zero-order correlations between scale items for each sample.

5.2.5. Data Analysis

The same approach as in Study 2 was used (see Chapter 3 for details). The expectation-maximisation algorithm was used to eliminate missing values (Dempster et al., 1977) and the assumptions to do so were fulfilled in the present data set (Little's MCAR test: $p > .05$, $N_{\text{missing values}} < 1.6\%$). To establish cross-cultural invariance for the CAMI measure, multiple-group CFA was used and multiple-group SEM was used to cross-culturally validate the mental illness stigma model. Finally, Kline's (2011) guidelines to evaluate model fit were followed (i.e., CFI $> .90$, RMSEA $\leq .08$, SRMR $< .10$, non-significant χ^2-test).

5.3. Results

5.3.1. Hypothesis 1: Measure validation.

To test *H1*, a multi-group CFA was conducted with culture – European Americans and Indians – as the group-variable to test the validity of the sub-scales of the CAMI measure. First I examined cross-cultural equivalence of the *authoritarianism* sub-scale and found the model to be a poor fit (see Table 5.5). The overall model did not load equivalently (χ^2 (10) = 120.49, $p < .001$) and several items did not load equivalently either ($ps < .001$). Therefore, I tested further models removing the most invariant item at each step (see Table 5.5 for order of

Table 5.3. CAMI measure – retained items shaded grey.

	Authoritarianism
1	One of the main causes of mental illness is a lack of self-discipline and will power
2	The best way to handle the mentally ill is to keep them behind locked doors
3	There is something about the mentally ill that makes it easy to tell them from normal people
4	As soon as a person shows signs of mental disturbance, he should be hospitalized
5	Mental patients need the same kind of control and discipline as a young child
6	Mental illness is an illness like any other (R)
7	The mentally ill should not be treated as outcasts of society (R)
8	Less emphasis should be placed on protecting the public from the mentally ill (R)
9	Mental hospitals are an outdated means of treating the mentally ill (R)
10	Virtually anyone can become mentally ill (R)

	Benevolence
1	The mentally ill have for too long been the subject of ridicule
2	More tax money should be spent on the care and treatment of the mentally ill
3	We need to adopt a far more tolerant attitude toward the mentally ill in our society
4	Our mental hospitals seem more like prisons than like places where the mentally ill can be cared for
5	We have a responsibility to provide the best possible care for the mentally ill
6	The mentally ill don't deserve our sympathy (R)
7	The mentally ill are a burden on society (R)
8	Increased spending on mental health services is a waste of tax dollars (R)
9	There are sufficient existing services for the mentally ill (R)
10	It is best to avoid anyone who has mental problems (R)

Table 5.3. CAMI measure – retained items shaded grey (Continued).

	Community mental health ideology
1	Residents should accept the location of mental health facilities in their neighbourhood to serve the needs of the local community
2	The best therapy for many mental patients is to be part of a normal community
3	As far as possible, mental health services should be provided through community based facilities
4	Locating mental health services in residential neighbourhoods does not endanger local residents
5	Residents have nothing to fear from people coming into their neighbourhood to obtain mental health services
6	Mental health facilities should be kept out of residential neighbourhoods (R)
7	Local residents have good reason to resist the location of mental health services in their neighbourhood (R)
8	Having mental patients living within residential neighbourhoods might be good therapy but the risks to residents are too great (R)
9	It is frightening to think of people with mental problems living in residential neighbourhoods (R)
10	Locating mental health facilities in a residential area downgrades the neighbourhood (R)
	Social distance
1	The mentally ill should not be given any responsibility
2	The mentally ill should be isolated from the rest of the community
3	A woman would be foolish to marry a man who has suffered from mental illness, even though he seems fully recovered
4	I would not want to live next door to someone who has been mentally ill
5	Anyone with a history of mental problems should be excluded from taking public office
6	The mentally ill should not be denied their individual rights (R)
7	Mental patients should be encouraged to assume the responsibilities of normal life (R)
8	No one has the right to exclude the mentally ill from their neighbourhood (R)
9	The mentally ill are far less of a danger than most people suppose (R)
10	Most women who were once patients in a mental hospital can be trusted as babysitters (R)

Table 5.4. Correlations for the mental illness stigma sub-scales by sample (European American under axis, Indian over axis shaded in grey).

Authoritarianism										
	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
1		.24**	.05	.41***	.17*	.10	-.11	-.28***	-.10	.04
2	.44***		.19*	.12	.14	.17*	-.13	-.38***	-.20*	.06
3	.23*	.23*		.28***	.13	-.17*	-.22*	-.26**	-.13	-.27***
4	.36***	.41**	.46***		.27**	-.04	-.08	-.13	.06	-.08
5	.28**	.37**	.49***	.56***		-.15	-.24**	-.11	-.04	-.14
6	.08	.30**	.18	.16	.10		.11	-.02	.02	.08
7	.29**	.51***	.20*	.25**	.31***	.25**		.36***	.16	.19*
8	.02	.31***	.19*	.17	.23*	.32***	.29**		.25**	.13
9	.18	.31***	.33***	.20*	.23*	.19	.15	.27**		.12
10	.28**	.38***	.29**	.23*	.19*	.34***	.38***	.14	.04	

NB. *** $p < .001$, ** $p < .01$, *$p < .05$, †$p < .10$

Benevolence										
	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
1		.29***	.20*	.32***	.33***	-.18*	.05	-.08	-.03	-.08
2	.33***		.36***	.43***	.21*	.20*	.07	-.09	-.02	-.01
3	.61***	.51***		.47***	.49***	.15	.26**	.24**	.10	.16
4	.30***	.19*	.46***		.31***	.16	.05	.09	.14	.04
5	.47***	.42***	.64***	.31***		.06	.29***	.26**	.15	.26**
6	.34***	.26**	.41***	.22*	.40***		.46***	.28***	.27***	.39***
7	.29**	.28**	.51***	.20*	.44***	.37***		.59***	.27***	.46***
8	.27***	.64**	.42***	.22*	.28**	.39***	.40***		.43***	.43***
9	.32***	.38***	.32***	.20*	.13	.23*	.24*	.37***		.28***
10	.48***	.24*	.60***	.33***	.51***	.41***	.54***	.33***	.29**	

NB. *** $p < .001$, ** $p < .01$, *$p < .05$, †$p < .10$

Table 5.4. Correlations for the mental illness stigma sub-scales by sample (European American under axis, Indian over axis shaded in grey). Continued.

CMHI

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
1		.48***	.19*	.14	.37***	.10	.08	-.27***	.17*	.11
2	.40***		.38***	.22*	.39***	.19*	.09	-.09	.01	.03
3	.50***	.44***		.45***	.30***	-.07	-.16	.05	-.16	-.11
4	.57***	.44***	.42***		.33***	.06	.09	.06	-.04	-.08
5	.58***	.51***	.44***	.81***		.14	.06	-.01	.18*	.09
6	.63***	.38***	.35***	.69***	.69***		.60***	.31***	.49***	.47***
7	.56***	.30***	.31***	.72***	.67***	.69***		.33***	.44***	.51***
8	.57***	.34***	.37***	.71***	.62***	.72***	.78***		.38***	.35***
9	.60***	.39***	.35***	.61***	.63***	.62***	.68***	.68***		.51***
10	.50***	.36***	.24*	.60***	.59***	.61***	.67***	.63***	.62***	

NB. *** *p* < .001, ** *p* < .01, *p < .05, †*p* < .10

Social Distance

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
1		.48***	.27**	.33***	.30***	-.08	.03	-.21*	-.17*	-.23**
2	.49***		.43***	.38***	.39***	.05	.11	.04	-.12	-.22***
3	.43***	.56***		.46***	.42***	.03	.14	.04	.10	-.28***
4	.55***	.61***	.58***		.38***	.04	.09	.25**	-.00	-.22***
5	.49***	.49***	.56***	.55***		-.05	.32***	.10	.12	-.16
6	.41***	.40***	.32***	.43***	.39***		.29***	.27**	.13	-.01
7	.38***	.46***	.27**	.34***	.39***	.45***		.35***	.37***	.17*
8	.41***	.62***	.49***	.53***	.33***	.51***	.50***		.33***	.15
9	.46***	.61***	.57***	.65***	.47***	.50***	.42***	.68***		.18*
10	.34***	.40***	.44***	.47***	.56***	.39***	.31***	.41***	.52***	

NB. *** *p* < .001, ** *p* < .01, *p < .05, †*p* < .10

removal). The final model was equivalent across cultures ($p > .05$), however it still held a poor model fit (see Table 5.5). Thus the *authoritarianism* sub-scale of the CAMI measure should not be used in cross-cultural comparison and was not used in any of the following analyses.

Second, I examined the validity of the *benevolence* sub-scale across cultures. The original model showed a poor model fit (see Table 5.6). Overall the model did not load equivalently (χ^2 $(10) = 41.27$, $p < .001$) and several individual items did not load equivalently either ($ps < .001$). Thus further models were tested removing most the invariant item at each step (see Table 5.6 for order of removal). The final model held an excellent fit (see Table 5.6). The final model as well as individual items loading onto the latent variables were invariant across cultures ($p > .05$). Therefore, the final *benevolence* sub-scale can be used in cross-cultural comparisons between European Americans and Indians.

Third, I examined the cross-cultural equivalence of the *community mental health inventory* sub-scale. The original model held a poor model fit and overall did not load equivalently ($\chi^2 (10) = 100.47$, $p < .001$). Several items did not load equivalently ($ps < .001$), therefore I tested further models removing most the invariant item at each step (see Table 5.7 for order of removal). The final model held an excellent fit (see Table 5.7), and the overall model and individuals items were cross-culturally invariant ($ps > .05$). The final *community mental health inventory* sub-scale can therefore be used for cross-cultural analysis between European Americans and Indians.

Finally, I examined the *social distance* sub-scale across cultures. The model proved to be a poor fit (see Table 5.8) and did not load equivalently across cultures ($ps < .001$). Thus I tested subsequent models by removing the most invariant item at each step (see Table 5.8 for order of removal). The refined model was cross-culturally invariant – overall and its individual items ($ps > .05$) – and showed an excellent model fit (see Table 5.8). The refined *social distance* sub-scale can therefore be employed for cross-cultural comparison between European Americans and Indians.

Next, to examine construct validity, I ran *t*-tests and correlations between socio-demographic variables and the culturally invariant aspects of mental illness stigma sub-scales to see whether the relationships followed the literature (see Table 5.9). Older and female participants were significantly more benevolent but endorsed social distance significantly less. Religious affiliation significantly predicted benevolence and CMHI. Bonferroni post-hoc tests revealed that Hindu participants scored significantly lower on benevolence than Christian and non-religious participants respectively (ps < .001). However, Bonferroni post-hoc tests revealed no significant differences across religious affiliation in CMHI. All other associations were non-significant (see the Discussion for evaluation of construct validity).

I also examined cultural differences in predictor and outcome variables. See Table 5.10 for means and standard deviations of benevolence, community mental health ideology and social distance by cultural group. I ran *t*-tests with culture as a group variable and found that Indian participants were significantly less benevolent ($t(248) = 6.51$, $p < .001$), endorsed community mental health ideology significantly less ($t(248) = 6.45$, $p < .001$) and significantly favoured greater social distance ($t(248) = -8.37$, $p < .001$) than did European Americans.

5.3.2. Hypothesis 2: Cross-cultural validation of the Mental Illness Stigma Model.

Next I tested *H2* – testing the cross-cultural validity of the mental illness stigma model (see Figure 5.1). As in Study 2, before commencing model testing, I created item parcels to represent the observed variables – see Chapter 3 for details about methodology – creating two parcels for all latent variables[8]. I used multi-group SEM to test the hypothesized moderated model (Figure 5.1). Both the unconstrained model [$\chi^2 (12) = 17.40$, $p = .14$; CFI = .99; RMSEA = .04, (LB < .001, HB = .08); SRMR = .02] and the model constrained to be equivalent across cultural groups [$\chi^2 (15) = 22.41$, $p = .10$; CFI = .99; RMSEA = .04, (LB < .001, HB = .08);

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[8] See appendix section 9.3. for factor loadings.

Running Head: A CROSS-CULTURAL KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDERS

Table 5.5. Authoritarianism sub-scale.

Model	χ^2	df	p	CFI	RMSEA	LB	HB	SRMR	$\Delta\chi^2$	df	p
Unconstrained	155.21	70	<.001	.76	.07	.06	.09	.08			
Model 1	275.70	80	<.001	.45	.10	.09	.11	.16	120.49	10	<.00001
Model 2: item 7	206.64	63	<.001	.52	.10	.08	.11	.16	69.06	17	<.00001
Model 3: item 8	141.77	48	<.001	.63	.09	.07	.11	.14	64.87	15	<.00001
Model 4: item 10	93.07	35	<.001	.73	.08	.06	.10	.12	48.7	13	<.00001
Model 5: item 9	65.09	24	<.001	.79	.08	.06	.11	.10	27.98	11	.003
Model 6 (final): item 5	44.96	15	<.001	.77	.09	.06	.12	.09	20.13	9	.01

Table 5.6. Benevolence sub-scale.

Model	χ^2	df	p	CFI	RMSEA	LB	HB	SRMR	$\Delta\chi^2$	df	p
Unconstrained	266.55	70	<.001	.72	.11	.09	.12	.07			
Model 1	307.83	80	<.001	.68	.11	.10	.12	.09	41.28	10	.00001
Model 2: item 1	247.28	63	<.001	.70	.11	.10	.12	.08	60.55	17	<.00001
Model 3: item 3	182.16	48	<.001	.70	.11	.09	.12	.10	65.12	15	<.00001
Model 4: item 2	83.93	35	<.001	.86	.08	.06	.10	.08	98.23	13	<.00001
Model 5: item 8	46.77	24	.004	.90	.06	.04	.09	.06	37.16	11	.0001
Model 6 (final): item 6	23.10	15	.08	.95	.05	<.001	.08	.06	23.67	9	.005

Table 5.7. Community mental health inventory sub-scale.

Model	χ^2	df	p	CFI	RMSEA	LB	HB	SRMR	$\Delta\chi^2$	df	p
Unconstrained	277.89	70	<.001	.81	.11	.10	.12	.06			
Model 1	378.35	80	<.001	.72	.12	.11	.14	.12	100.46	10	<.00001
Model 2: item 4	281.32	63	<.001	.76	.12	.10	.13	.13	97.03	17	<.00001
Model 3: item 5	209.11	48	<.001	.79	.12	.10	.13	.13	72.21	15	<.00001
Model 4: item 1	109.07	35	<.001	.88	.09	.07	.11	.12	100.04	13	<.00001
Model 5: item 8	76.98	24	<.001	.89	.09	.07	.12	.12	32.09	11	.0005
Model 6: item 3	22.06	15	.11	.98	.04	<.001	.08	.08	54.92	9	<.00001
Model 7 (final): item 2	7.72	8	.46	1.00	<.001	<.001	.07	.03	14.34	7	.05

Table 5.8. Social Distance sub-scale.

Model	χ^2	df	p	CFI	RMSEA	LB	HB	SRMR	$\Delta\chi^2$	df	p
Unconstrained	202.32	70	<.001	.82	.09	.07	.10	.06			
Model 1	309.08	80	<.001	.70	.11	.10	.12	.12	106.76	10	<.00001
Model 2: item 10	240.21	63	<.001	.74	.11	.09	.12	.10	68.87	17	<.00001
Model 3: item 9	162.85	48	<.001	.79	.10	.08	.12	.10	77.36	15	<.00001
Model 4: item 8	79.32	35	<.001	.90	.07	.05	.09	.10	83.53	13	<.00001
Model 5 (final): item 6	39.48	24	.02	.96	.05	.02	.08	.06	39.84	11	<.00004

Table 5.9. Socio-demographic variables in relation to mental illness stigma aspects.

	Benevolence	Community mental health inventory	Social Distance
Age	$r = .18, p = .004$	$p > .05$	$r = -.16, p = .01$
Gender	$t(248) = -4.06, p < .001$	$p > .05$	$t(248) = 3.20, p < .001$
Education	$p > .05$	$p > .05$	$p > .05$
Familiarity	$p > .05$	$p > .05$	$p > .05$
Religious affiliation	$F(5, 245) = 6.86, p < .001$	$F(5, 248) = 2.32, p = .04$	$p > .05$

Table 5.10. Means and standard deviations of mental illness stigma in European Americans and Indians.

	European Americans		Indians	
	M	SD	M	SD
Benevolence	19.89	3.41	17.07	3.39
CMHI	14.25	3.88	11.25	3.46
Social Distance	12.03	4.49	16.74	4.38

Figure 5.2. Mental Illness Stigma model (European Americans & Indians).
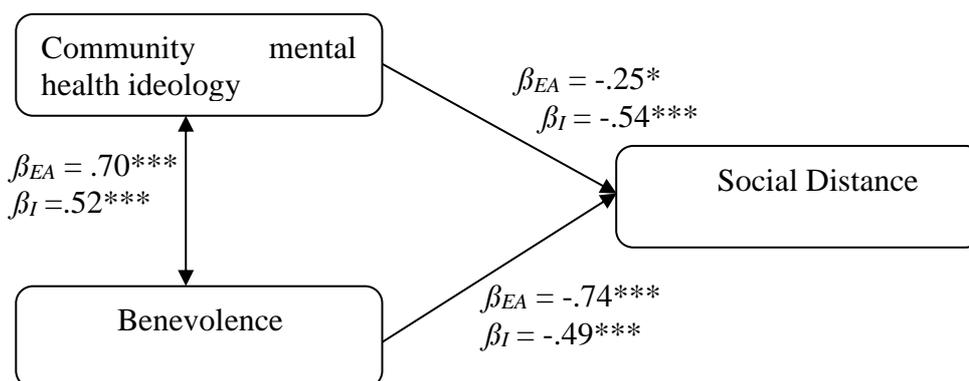
NB. ***$p < .001$, ** $p < .01$, *$p < .05$, †$p < .10$
       EA = European American, I = Indian

SRMR = .03] showed a good fit. In both cultural groups, community mental health ideology and benevolence were significantly positively correlated, and further both community mental health ideology and benevolence showed significant negative associations with social distance (Figure 5.2). The chi-square difference tests confirmed that these associations did not significantly differ across cultural groups (Benevolence → CMHI: $\chi^2 (1) = 3.12, p = .08$, CMHI → Social Distance: $\chi^2 (1) = 3.61, p = .06$, Benevolence → Social Distance: $\chi^2 (1) = 2.31, p = .13$). This lends support to the notion that the mental illness stigma model holds up cross-culturally in European Americans and Indians.

5.4. Discussion

The purpose of the current study was to establish the cross-cultural validity of the CAMI measure and of the mental illness stigma model. Multiple-group CFA revealed that several items from each CAMI sub-scale as well as the authoritarian sub-scale overall were not suitable for cross-cultural analysis. This highlighted that the CAMI measure in its original form is a poor cross-cultural measure. Following this, multiple-group SEM demonstrated that the mental illness stigma model (i.e. that prejudicial beliefs predict discrimination) was valid in both cultural groups.

5.4.1. CAMI measure validation

Measurement invariance was examined by means of multiple-group CFA, whereby only items invariant across cultural groups were retained. The *authoritarianism* sub-scale did not show overall cross-cultural invariance even after removing invariant items. Several studies – irrespective of the cultural samples obtained – were unable to find *authoritarianism* as a factor (Brockington et al., 1993; Morris et al., 2012; Sevigny et al., 1999; Sørensen & Sørensen, 2013). Taylor and colleagues (1979) and Taylor and Dear's (1981) *authoritarianism* sub-scale encompasses three different aspects: first, the preference to isolate people with mental illness from the community; second, the perceived abnormality of mental illness; and, third, the perceived lack of discipline or will-power by people with mental illness. Despite the conceptual multiplicity, the *authoritarianism* sub-scale demonstrated an acceptable reliability in the European American sample. However, in line with Masuda and colleagues' (2009) results – who found low reliabilities for this sub-scale in Japanese American students – the reliability for the *authoritarianism* sub-scale in the Indian sample of the present investigation was low. The first aspect of *authoritarianism* – segregating individuals with mental illness and preference for mental hospitals – may not have held cross-culturally due to the scarcity of mental health hospitals in India and because mental illness is more often treated by traditional or religious leaders (Ganesh, 2011; Khandelwal et al., 2004; Kishore et al., 2012; Shankar et al., 2006; WHO, 2011a, 2011b). As was discussed previously, in India, contrary to the Western conception, mental illness is not seen as separate from physical illness (Fabrega, 1991a). Thus it is fair to state that that due to different conceptualisations of mental illness the second aspect of *authoritarianism* may not have transferred across cultures. The third aspect of *authoritarianism* assumes personal responsibility for the mental illness. This may not have held cross-culturally as non-Western cultures tend to make more external versus internal attributions about mental illness (Dietrich et al., 2004).

In regards to the *benevolence* sub-scale, items relating to increasing tax spending for mental illness as well as adopting more positive views towards individuals with mental illness did not hold cross-culturally. The World Health Organisation (2011a, 2011b) reported that in India 0.06% of the total health budget was spent on mental health care, compared to 6.2% in the USA. Thus, as the budget for mental health care in India is virtually non-existent, it would be a foreign concept to spend more money on mental health care. This was reflected in the culturally non-invariant items relating to this aspect. Instead, the notion of *benevolence* that held cross-culturally was the sentiment of the community's responsibility for people with mental illness as well as the value of people with a mental illness within society.

The *community mental health inventory* sub-scale relates to preference for people with mental illness being in the community and not in mental health hospitals. Rahav and colleagues (1984) investigated mental illness stigma in Israel and found that items relating to mental health care in the community did not hold. They purported that this may have been due to the Israeli public not being aware of deinstitutionalisation and community psychiatry. India, on the other hand, has a national mental health programme and policies for community care for mental illness (WHO, 2001b). Furthermore, as discussed above, in India, traditional or religious leaders are the main source of help for people with a mental illness (Ganesh, 2011; Khandelwal et al., 2004; Kishore et al., 2012; Shankar et al., 2006; WHO, 2011a, 2011b). It is noteworthy then that some items of the *community mental health inventory* sub-scale did hold cross-culturally. Indeed, items that did not hold cross-culturally appear to encompass more than one concept (e.g., 'Having mental patients living within residential neighbourhoods might be good therapy but the risks to residents are too great') and may thus not have been understood in the same fashion across cultures.

Finally, four items from the *social distance* sub-scale were not found to be invariant across cultures. The items that did not hold across groups were generally prejudiced beliefs

(e.g., 'The mentally ill are far less of a danger than most people suppose'), while the retained items encompassed more behavioural attitudes (e.g., 'I would not want to live next door to someone who has been mentally ill'). Furthermore, two of the eliminated items pertained to the rights of people with mental disorders. Although a national mental health scheme has been in place (WHO, 2001b), India first introduced a national mental health policy in 2014 (IMHFW, 2014). Thus the legal framework surrounding mental illness is a fairly recent one, underlining why these items from the *social distance* sub-scale did not hold.

For the retained sub-scales, construct validity was examined by inspection of their associations with socio-demographic variables, culture and by means of hypothesis testing. In line with the literature, the results showed that older participants endorsed stigma towards mental illness more (Angermeyer & Matschinger, 1996; Corrigan, Edwards, et al., 2001; Freeman, 1961; Ku, 2007; Lauber et al., 2004). Also, female participants endorsed stigma significantly less, which follow findings of some studies (Lauber et al., 2004; Mojtabai, 2010), although the literature has generally found mixed results (see Angermeyer & Dietrich, 2006). Further, European American participants also endorsed benevolence and community mental health ideology significantly more yet social distance significantly less than their Indian counterparts. This is in consonance with previous research which found that endorsement of both *benevolence* (Corrigan, Edwards, et al., 2001; Papadopoulos et al., 2012), and *community mental health ideology* is significantly higher (Papadopoulos et al., 2012; Shokoohi-Yekta & Retish, 1991), while endorsement of *social distance* is significantly lower (Papadopoulos et al., 2012; Shokoohi-Yekta & Retish, 1991) in individuals of European compared to Asian cultures. Finally, due to their association with socio-demographic variables and culture as well as following the hypothesised framework, it is fair to conclude that good construct validity was established for the retained sub-scales. Internal consistency was established as Cronbach's α values were good for the *community mental health ideology* and *social distance* sub-scales and

acceptable for the *benevolence* sub-scale.

5.4.2. Mental illness stigma model validation

Next, I examined the cross-cultural validity of the mental illness stigma model. Community mental health ideology and benevolence were significantly positively related and both in turn significantly negatively predicted with social distance. This model demonstrated an excellent fit in both cultural groups, lending support to Corrigan's (2000) and Corrigan and Watson's (2002) model of mental illness stigma and further demonstrating its applicability in the Indian culture and, therefore, possibly other non-Western cultures.

5.4.3. Strengths and limitations

One strength of the present study was that it used multiple-group CFA to cross-culturally validate the CAMI measure and also to specifically examine individual scale items. Previous studies have examined the CAMI measure cross-culturally and also used CFA to examine its fit in different cultures (Högberg et al., 2008; Morris et al., 2012). However, none examined the equivalence of the individual items, a shortcoming which was addressed in the present study. Another strength of the present investigation pertains to the type of prejudicial beliefs and discrimination examined. Although Angermeyer and colleagues (2004) examined the mental illness stigma model cross-culturally, they focused on perceptions of dangerousness and dependency. Research has not examined the mental illness stigma model using the most commonly found prejudicial beliefs (i.e., benevolence & CMHI) and discrimination (social distance). The present investigation addressed this gap by using multi-group SEM and indeed found the model to be cross-culturally valid.

The present approach also had limitations, which were the same as in Study 2 (please refer to Chapter 3 for details). First, presentation of mental illness may vary between cultures, however it has been shown that the core symptoms of mental illness remain universal (Bhugra, 2006; Williams & Healy, 2001). Second, the expectation-maximisation method was also used

to infer missing values and thus findings need to be interpreted with caution.

5.4.4. Conclusion

The findings of the present study demonstrate that similar types of prejudice and discrimination are found in both European American and Indian samples, illustrating that Stuart's feeling that he is often perceived as "a lunatic with a knife or on some sort of rampage" (Time to Change, 2010, 0:57) resonates across cultures. Although the mental illness stigma model demonstrated good cross-cultural invariance, Indian participants reported significantly greater endorsement of prejudicial beliefs and discrimination compared to their European American counterparts. Providing an explanation for this phenomenon was beyond the scope of the present investigation, therefore the next chapter aimed to address these cultural differences by examining cultural variables in relation to the mental illness stigma model.

6. The Mental Illness Stigma Model and Predictor Variables

In line with the literature (Abdulla & Brown, 2011; Angermeyer & Dietrich, 2006; Anglin et al., 2006; Cheon & Chiao, 2012; Kurihara et al., 2000; Murthy, 2002; Rüsch et al., 2005; Whaley, 1997), the previous chapter found that similar types of prejudice and discrimination are present in both European American and Indian samples. However, their endorsement differed significantly between cultural groups. The present chapter aimed to address these differences by examining cultural and religious variables in relation to the mental illness stigma model.

6.1.1. Collectivism

Chapter 4 reviewed research examining the association between collectivism and mental illness stigma. Only Ku (2007) and Papadopoulos and colleagues (Papadopoulos, 2009; Papadopoulos et al., 2013) have studied this relationship directly. On the one hand, Ku (2007) found that collectivism was significantly positively related to social distance and dislike towards people with a mental illness in Chinese Australian, Anglo Australian and mainland Chinese samples. On the other hand, Papadopoulos (2009) and Papadopoulos and colleagues (2013) examined English, Greek or Greek Cypriot, American and Chinese samples living in the UK and reported mixed results; namely that greater collectivism was associated with greater endorsement of authoritarianism and social distance in the American sample and further that collectivism was significantly negatively associated with community mental health inventory in the American and the Chinese samples. Similarly, in Chapter 4, I did not find a significant association between collectivism and mental illness stigma (as social distance) in either cultural group. The discrepancies in these findings evidence that the relationship between collectivism and mental illness stigma requires further exploration.

Abdulla and Brown (2011) purported that specific aspects of collectivism explain cross-cultural variation of mental illness stigma – namely, family honour, conformity to norms,

familial obligations and familial support (Abdulla & Brown, 2011; Lauber & Rössler, 2007; Sanchez & Gaw, 2007; Weiss et al., 2001). While there is overlapping variance between the facets of collectivism, it is not a perfect overlap. Research that has examined the link between these specific aspects of collectivism and mental illness stigma does not exist. Thus, the present investigation will examine these facets of collectivism as mediators of the relationship between collectivism and mental illness stigma. The present research continues with the notion that culture shapes mental illness schemata, and studying specific cultural variables will help explain cross-cultural variation. Below, I will introduce these specific concepts and the literature that lends support to the proposed associations with mental illness stigma.

6.1.2. Conformity to norms

Social norms are "social attitudes of approval or disproval, specifying what ought to be done and what ought not to be done" (Sunstein, 1996, p. 914). There are unwritten norms about nearly every aspect of human behaviour ranging from when to show emotion to when to discuss personal matters (Sunstein, 1996). The degree of clarity and importance of social norms within a society is closely linked with the scope for deviance from these norms (Gelfand et al., 2006, 2011). Social norms are enforced through the general community and through social sanctions that may bring about shame and embarrassment for the person breaching the norms (Cialdini & Trost, 1998; Elster, 1994; Sunstein, 1996). Globally, social and group norms are related to attitudes and behaviours (Terry & Hogg, 1996). Thus, perceived norms about a particular behaviour are associated with attitudes towards that behaviour and the likelihood of this behaviour being carried out. Asian cultures particularly stress following and conforming to social norms (Kim et al., 1999), particularly compared to Western cultures (Oyserman et al., 2002). In a cross-cultural comparison of 33-cultures, Gelfand and colleagues (2011) found that cultures were more likely to emphasize conforming to societal norms if they had encountered greater historical threats (e.g., territorial disputes with neighbours), possessed less natural

resources (e.g., water and food scarcity) and had faced more natural disasters (e.g., floods, droughts, viral illnesses). Consequently, they explained, that clear social norms and sanctions for deviant behaviours arose from the need to maintain order and enhance social cooperation to effectively handle these issues. In India, the rules of conduct are firmly defined (Gelfand et al., 2011; Sahay & Walsham, 1997) and norms are rooted in ancient scriptures (Singh, Huang, & Thompson, 1962). The public views the unwritten social code as more important than the state in determining everyday life (Sahay & Walsham, 1997). The society is based on the central tenet of hierarchy and therefore relationships rarely range outside one's own family, caste, linguistic or religious group (Sahay & Walsham, 1997). Mines (1988) reported that 42% of cases of breaking with the norm result in a split with the family. Thus the decision to rebel would not be taken lightly because the consequences could leave the person a social outcast in a society where one's identity and role within it is determined by one's social relations.

As compared to less collectivist cultures (e.g., USA, Hofstede et al., 2010), in more collectivist cultures (e.g., India, Hofstede et al., 2010) outcomes that affect others, as opposed to the individual, may be more salient. Markus and Kitayama (1991) proposed that to an interdependent self, conformity would not reflect an inability to resist social pressure, but would rather signify the willingness to be responsive to others and maintain the social relationship. They further noted that while adjustment to other in-group members is salient, this may not be required at all in relation to out-group members. While individuals from collectivist cultures more strongly endorse social norms and social attitudes towards a behaviour (Park, 2000), the literature also shows that the relationship between endorsement of social norms and behavioural attitudes and behavioural intent does not differ between Western and non-Western cultures (Bagozzi, Lee, & Loo, 2001; Park, 2000).

So how does the value of conformity to norms relate to mental illness stigma? Across cultures symptoms of mental illness – such as hearing voices or excessive worrying – may be

perceived as socially unacceptable and as outside the norm (Abdullah & Brown, 2011; Hinshaw, 2007). Therefore, it is likely that individuals endorsing greater conformity to norms would also report significantly greater stigmatisation of mental disorders.

6.1.3. Familial Support

Next, familial support in relation to mental illness stigma will be examined. Family members of someone with a mental illness invest both time and energy into finding and undergoing adequate support and treatment (Lefley, 1989). Perceptions of providing care have been shown to vary between cultures, with individuals from more collectivist cultures tending to endorse the obligation to care for a family member more organically (Fenton & Sadiq, 1993; Willis, 2012). In more collectivist cultures, the family is central to daily life and the community is seen as the extended family (Choudhry, 2001; Ibrahim, Ohnishi, & Sandhu, 1997). Singh and colleagues (1962) found that compared to Americans, Indians reported significantly greater emotional and physical nourishment and care towards in-group members. Similarly, Willis (2012) compared attitudes towards care giving in Caucasian and South Asian British samples. The findings showed that the former were more likely to attribute their motivation for their care giving behaviours to their personality and personal experiences, while the latter were more likely to describe their motivations as being in their nature. Indeed, in South Asian cultures, caring for a family member who is in need is perceived as the norm and a societal and religious duty (Adamson & Donovan, 2005; Lawrence et al., 2008; Steiner & Bansil, 1989; Willis, 2012), whereas accepting professional help can be seen as a failure in one's role and duties (Lawrence et al., 2008). Caring for a family member is seen as "doing something good" (Adamson & Donovan, 2005, p. 43) and as the opportunity to reciprocate past love and support (Lawrence et al., 2008).

In India, if a problem arises – be it financial, medical or psychiatric – it is not viewed as a particular person's problem, but rather it is approached as the family's problem (Laungani,

1992). Family members are seen as key resources for health issues in terms of advice and practical support (Grewal et al., 2005). Indeed, Padmavati and colleagues (2005) found that the majority of Indian patients with a psychotic episode had been supported by their family members to seek help and would have been unlikely to do so on their own.

As such, it is plausible to purport that cultures that highlight the importance of familial support for members with a mental disorder would in turn endorse stigma towards these less. Indeed, Shibre and colleagues (2001) investigated mental illness stigma in Ethiopia and found that participants from urban areas reported significantly greater stigma compared to participants from rural areas. The authors concluded that this difference was due to less familial support towards patients with mental illness in urban areas. Unfortunately, Shibre and colleagues (2001) did not directly measure familial support as a variable, and therefore their conclusions need to be approached with caution. This limitation will be addressed in the present investigation by measuring familial support as a variable in relation to stigma.

6.1.4. Family honour

Next, family honour in relation to mental illness stigma will be examined. More collectivist cultures place a stronger emphasis on upholding family honour (Abdulla & Brown, 2011). Cohen and colleagues (Kim & Cohen, 2010; Kim, Cohen & Au, 2010; Leung & Cohen, 2011) purported that the criteria against which honour is judged and how it is maintained or regained varies across cultures. While European and North American cultures are deemed *dignity* cultures (where it is believed that every person possesses an intrinsic value, which is immune to external evaluation; see Leung & Cohen, 2011), Hispanic, Mediterranean, Arabic and South Asian cultures are seen as *classic honour* cultures (a person's value is determined by themselves as well as by society. Individuals must accept their value and ensure honour is given by others; see Leung & Cohen, 2011). Cohen and colleagues (Kim & Cohen, 2010; Kim et al., 2010; Leung & Cohen, 2011) explained that individuals from dignity cultures are "impervious

to insults and threats from others" (Leung & Cohen, 2011, p. 509), while threats to one's honour in classic honour cultures must be countered and nullified until one's honour is restored. Thus, in classic honour cultures if a family member has a mental disorder, a family's reputation can be blemished (Lefley, 1989), while in dignity cultures this would only be the case if the individuals themselves sees mental illness as worthy of stigmatisation.

For example, a Zambian participant stated that if a relative is identified as having a mental disorder, "it is assumed that the whole family is mad" (Kapungwe et al., 2010, p. 196) and in fact, not only the family, but the entire in-group can potentially be stigmatised (Kapungwe et al., 2010; Sanchez & Gaw, 2007; Thara & Srinivasan, 2000; Weiss et al., 2001). Twenty percent of relatives reported problems with their neighbours after it became common knowledge that a family member had a mental illness (Thompson & Doll, 1982) and a Zambian individual further explained, "you will find that once there is [mental] illness in the neighbourhood, the neighbours will not want to stay there" (Kapungwe et al., 2010, p. 196).

In upholding the family honour, potentially stigmatising behaviours can be tolerated if they are concealed from public view (Weston, 2003). Choudhry (2001) reported that many of their female South Asian participants were reluctant to disclose personal and family matters because they felt that this would bring shame or dishonour to their family. Similarly, both in non-Western and Western cultures family members reported feeling ashamed or embarrassed (Shibre et al., 2001; Thompson & Doll, 1982) as well as experiencing grief or sadness (Thara & Srinivasan, 2000) about having a relative with a mental illness. Seventy percent of relatives are worried about outsiders knowing that they had someone with mental illness in their family (Shibre et al., 2001) and a further 30-50% made an active effort to conceal this fact (Phelan, Bromet, & Link, 1998; Shibre et al., 2001; Thara & Srinivasan, 2000).

Historically, in India, women brought honour to the family by remaining 'pure' and obedient, while men were expected to protect women's purity and display heroism and valour

(Jain & Sharma, 2002; Vishwanath & Palakonda, 2011; Walton-Roberts, 2004). In modern day India, the family's reputation remains key in determining suitable marriage arrangements (Juthani, 2001; Thara & Srinivasan, 2000; Weiss et al., 2001). Identifying a family member as having a mental illness can blemish the honour of the entire family and make it difficult to arrange a good marital match for both this individual as well as other members of the family (Juthani, 2001; Thara & Srinivasan, 2000; Weiss et al., 2001).

Thus, the literature lends support for the positive relationship between protecting the family honour and endorsing greater mental illness stigma. Ku (2007) investigated family integrity – comprising items such as "one should work without pay in the family business" or "being successful for family honour" (p. 70) – in relation to mental illness stigma in Chinese and European Australian samples. The results showed that family integrity was significantly positively associated with mental illness stigma – that is, greater endorsement of family integrity was significantly related to greater agreement with mental illness stigma. It is likely then that a similar association would be seen with family honour.

6.1.5. Familial obligations

Another specific aspect of collectivism entails the perceived importance of familial obligations. Grewal and colleagues (2005) interviewed South Asian female immigrants to Canada with general health issues and found that even when family members were not directly asked to fulfil particular duties, they felt pressured by cultural and family obligations and expectations to complete these. Freeberg and Stein (1996) found that familial obligations were ingrained in the social role in Mexican Americans, whereas these were equated to relationship quality and, thus, seen as a personal choice in European Americans. Similarly, in India expectations of individuals and their role – for example, respecting and caring for one's parents or being a dutiful wife – are clearly set out and are learnt from an early age (Choudhry, 2001; Willis, 2012). Furthermore, a person's role is defined in the context of one's relationships with

the family and the community (Fenton & Sadiq, 1993) and, Khan (2001) purports that a person's social and personal identity is defined by their familial and socio-cultural obligations and duties.

Family honour, at least in part, is derived from academic and occupational achievements (Abdulla & Brown, 2011) and from family members following and practicing accepted religious and cultural customs (Vishwanath & Palakonda, 2011; Weston, 2003). Women are expected to be benevolent, passive and nurturing, while men are entrusted with the family's inheritance, the responsibility of supporting their parents in old age and completing a good education to find a good job and thus securing a good marital match (Mandelbaum, 1993). A person with mental illness may not be able to fulfil such expectations in a consistent manner (Lefley, 1989), which may result in feelings of inadequacy and self-stigmatisation and also stigmatisation from others for not being able to fulfil these roles (Abdulla & Brown, 2011). Yang and associates' (2014) interviews with Chinese American psychiatric in-patients highlighted the importance of being able to work and that the inability to do so – due to their mental illness – intensified stigma. Indeed, some relatives labelled family members with a mental illness as "useless" (p. 88) and rejection and abandonment was seen as common if patients were unable to work.

On the other hand, the Dharmaśāstra, an ancient Indian moral and ethical code, states that persons with an illness, including mental illness, can be excused from social obligations (Fabrega, 1991a). While this can be met with compassion and tolerance, it is more often followed with being discredited (Fabrega, 1991a). This may be because being relieved of social obligations may be met with resentment from family members and the community in general. Thus, it appears that both explanatory paths – whether mental illness is perceived as a failure to fulfil social obligations or as a relief from them – may heighten stigmatisation towards mental illness.

6.1.6. Religiosity

In addition to the specific facets of collectivism that were discussed above, the present investigation will also examine religiosity in relation to mental illness stigma. To cope with symptoms of mental illness people often turn to religion – for example, through prayer, reading holy scriptures or speaking with a religious leader (Charles et al., 2007; Daly et al., 1995; Furnham & Hamid, 2014; Padmavati et al., 2005; Sewilam et al., 2014; Stansbury et al., 2013; Van Hook, 1999). In fact, Ward and Heidrich (2009) found that participants who reported greater perceived stigma for mental illness were significantly more likely to recommend informal religious coping. Turning to religion as a coping strategy for symptoms of mental illness is significantly more prevalent amongst non-Western samples, while Western samples rarely, if at all, mention religion or spirituality as a way to manage their mental illness (May et al., 2014). Chatters, Taylor, Jackson, and Lincoln (2008) compared religious coping in African, Caribbean and non-Hispanic White Americans and found that non-Hispanic White participants endorsed religious coping – i.e., importance of prayer or believing that God was a source of strength – significantly less compared to the other ethnic groups.

Highly religious people are more likely to attribute responsibility of a problem to people who behave immorally or break from religious practices (Jackson & Esses, 1997). Religion can shape the causal beliefs individuals hold about mental illness (Chen & Bond, 2012; Hatfield et al., 1996; Ohaeri & Fido, 2001). For instance, a man who is hearing voices that ask him to perform certain Christian rituals may believe that he is indeed talking with God, instead of recognising this as a symptom of psychosis. In the same vein, in some cultures mental illness is believed to be a punishment for breaking religious rules and neglecting traditional practices (Cooper & Sartorius, 1997; Fabrega, 1991a; Patel, 1995). In this case, it is likely that people with mental illness would be stigmatised because the public perceives them as being responsible for their illness.

Religiosity has been shown to be significantly associated with stigmatising other illnesses – e.g., AIDS (Greene & Banerjee, 2006). Thus it is likely that this association would transfer to stigma towards mental illness as well. Indeed, studies that conceptualised religiosity along a linear scale of increasing conservativeness found significant positive associations, with more religious participants reporting significantly more authoritarian prejudicial beliefs (Rahav et al., 1984; Tzouvara & Papadopoulos, 2014). Contrary to this, Silton, Flannelly, Milstein, and Vaaler (2011) found a significant, negative association between religiosity and mental illness stigma, when they measured religiosity in terms of attendance in religious institutions. Their results showed that more frequent attendees were less likely to favour social distance towards someone with a mental illness. The discrepancy in findings may stem from the different conceptualisations of religiosity. Saroglou (2002) proposed a duality to religiosity, with *classic religiosity* – i.e., religious practice and perceived importance of religion in a person's life – on the one hand, and *spirituality* – i.e., the perceived importance of spirituality in a person's life and interest in finding meaning and values – on the other hand. The present investigation is the first to examine the relationship between religiosity and mental illness stigma using Saroglou's (2002) conceptualisation of religiosity – i.e., classic religiosity and spirituality – and to do so irrespective of religious affiliation.

6.1.7. Hypotheses

The main purpose of the present investigation was to explore associations and indirect effects of the cross-cultural model of mental illness stigma (see Figure 6.1). See below the proposed hypotheses. In the following hypotheses I will refer to mental illness stigma in general, which is characterised by *(i) lesser benevolence, (ii) lesser community mental health ideology (CMHI)*, and (*iii) greater social distance.*

Hypothesis 1: In both cultural groups, collectivism will significantly positively predict

a) conformity to norms, b) family honour, c) familial obligations and d) familial

Figure 6.1. Cultural and religious variables in relation to the mental illness stigma model.
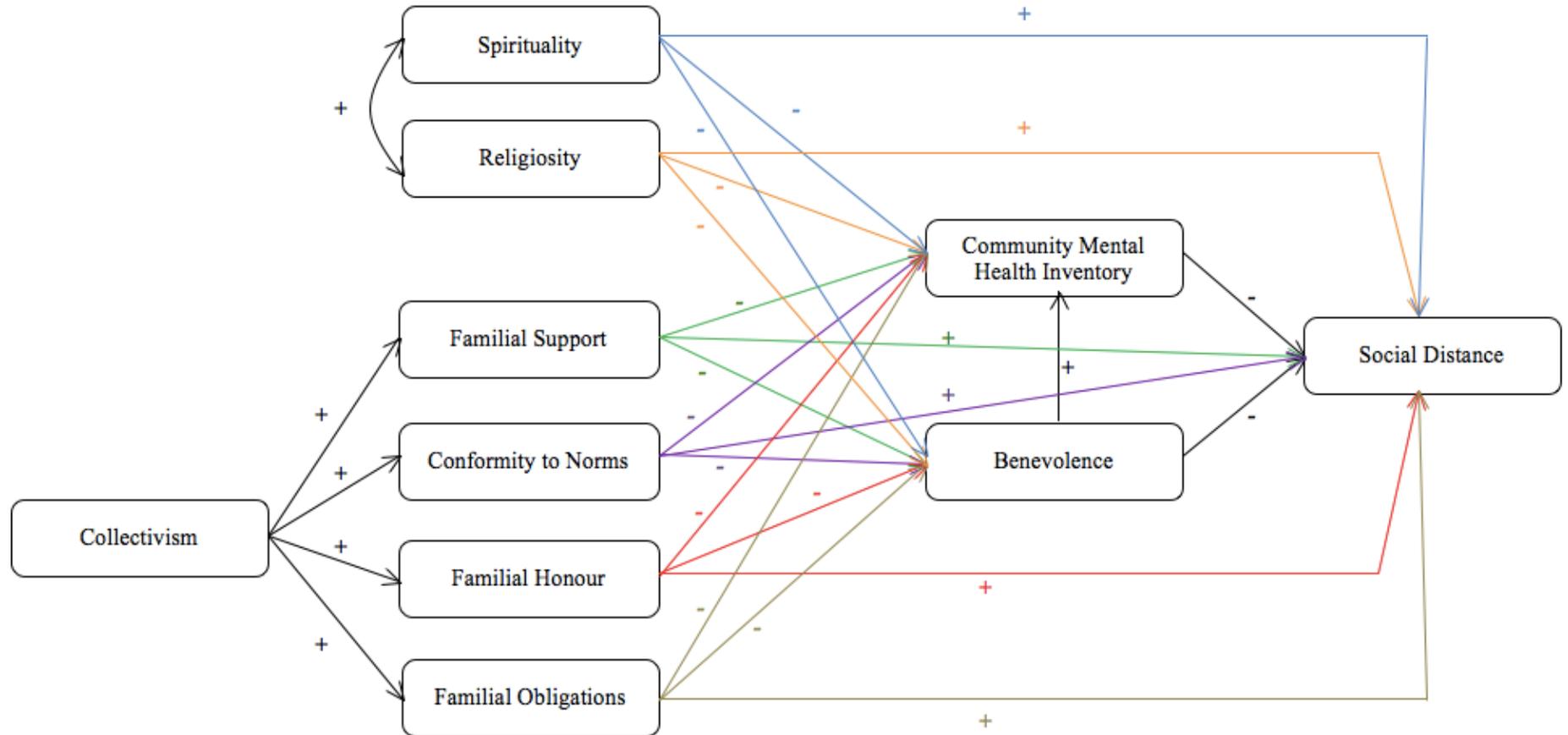
support.

Hypothesis 2: Mental illness stigma would be endorsed significantly more by:

(a) both European American and Indian participants endorsing greater conformity

to norms.

(b) both European American and Indian participants endorsing greater familial

honour.

(c) Indian, but not European American, participants endorsing greater familial

obligations.

(d): European American, but not Indian, participants who endorse familial support

less.

(e): both European American and Indian participants endorsing greater religiosity.

(f): both European American and Indian participants endorsing greater spirituality.

Hypothesis 3: The associations between collectivism and mental illness stigma will be

significantly mediated by the specific aspects of collectivism; that is a) conformity

to norms, b) family honour, c) familial obligations and d) familial support.

The previous chapter demonstrated that the mental illness stigma model held equivalently across cultures – i.e., prejudicial beliefs (benevolence and CMHI) significantly predicted discrimination (social distance). Therefore, it was also proposed that:

Hypothesis 4: The associations between social distance and a) conformity to norms, b)

familial honour, c) familial obligations, d) familial support, e) religiosity and f)

spirituality will be significantly mediated by i) benevolence and ii) CMHI.

6.2. Method

The current investigation was part of the study discussed in Chapter 5. For full details of ethics statement, participants, procedure and measures please refer back to that chapter. See below the details of the scales used to measure the specific cultural and religious variables that

were additionally examined in the present chapter.

6.2.1. Conformity to norms

To measure conformity to norms, I used items from the conformity to norms sub-scale of Kim, Atkinson, and Yang's (2008) Asian Values Scale. A number of items from this sub-scale did not appear to demonstrate good face validity (e.g., measuring familial honour, "The worst thing one can do is bring disgrace to one's family reputation", p. 345) and indeed these items showed low factor loadings ($\leq .40$). Therefore, only items that Kim et al. (2008) reported to have factor loadings of greater than .40 were used in the present study. Sample items include "One should not deviate from familial and social norms" and "One need not follow one's family's and the society's expectations" (reversed). Negative items were reverse coded so as to reflect greater endorsement of conformity to norms. Items were rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scale reliabilities were acceptable for the European American ($\alpha = .88$), but low for the Indian ($\alpha = .45$) sample.

6.2.2. Familial support

This construct was measured with Unger, Ritt-Olson, Teran, Huang, Hoffman, and Palmer's (2002) familism scale. Sample items include "One should not deviate from familial and social norms" and "One need not follow one's family's and the society's expectations" (reversed). Items were rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scale's reliability was good (European American: $\alpha = .76$, Indian: $\alpha = .83$).

6.2.3. Family honour

To measure family honour, the items "A person should feel ashamed if something he or she does dishonours the family name" and "A person should always be expected to defend his or her family's honour no matter what the cost" from Lugo Steidel and Contreras' (2003) familial honour sub-scale were used. The remaining two items of this scale were not used

because they did not appear to measure familial honour ("Children younger than 18 should give almost all their earnings to their parents" and "Children should live with their parents until they get married"). Items were rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scale's reliability was acceptable (European American: α = .67, Indian: α = .73).

6.2.4. Familial obligations

This construct was measured with Sabogal, Marín, Otero-Sabogal, Marín, and Perez-Stable's (1987) familial obligations sub-scale. The scale consisted of six items, sample items include "Aging parents should live with their relatives", and "I would help within my means if a relative told me that s/he is in financial difficulty". Items were rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Reliabilities were good (European American: α = .75, Indian: α = .84).

6.2.5. Religiosity

The Religiosity scale by Saraglou (2002) was used to measure participants' religiosity. This is a bi-dimensional measure that assesses spirituality and classic religiosity on two sub-scales. The measure is comprised of four items per sub-scale that are assessed on 7-point Likert scales. Three items ask "How important is *God / religiosity / spirituality* in your life?" which are rated as 1 (*Very important*) to 7 (*Not important*), one item asks, "How often do you pray?" which is rated from 1 (*Very frequently*) to 7 (*Not at all*), and six items ask "How interested are you in…?" which are assessed ranging from 1 (*Very interested*) to 7 (*Not at all interested*), where sample items included "religious rituals" and "the meaning and values of religion". Items were reverse coded so that they reflected greater religiosity and spirituality. The sub-scales' reliabilities were high (Classic religiosity: [European American: α = .92, Indian: α = .86], Spirituality: [European American: α = .95, Indian: α = .92]).

6.3. Results

First, I conducted *t*-tests to examine cultural differences in predictor and outcome variables (see Table 6.1). Indians reported significantly greater collectivism, conformity to norms, familial support, familial honour, religiosity and spirituality. Endorsement of familial obligations did not significantly differ between cultural groups.

Before commencing model testing, as in Chapters 3 and 5, I created two item parcels to represent each latent variable − i.e., collectivism, conformity to norms, familial support, familial obligations, classic religiosity and spirituality respectively[9]. Please refer to Chapter 3 for details about the parcelling method.

Multi-group structural equation modelling was used to test the hypothesized moderated-mediation model (see Figure 6.1). The measurement model held an acceptable fit (see Model 1 in Table 6.2) and all parcels significantly loaded onto their respective latent variables in both cultural groups (ps < .001). Similarly, the structural model held an acceptable fit when allowed to vary freely across groups (see Model 1 in Table 6.2). Inspection of the regression weights showed some non-significant loadings in both cultural groups (ps > .05). Thus I tested further models by removing any paths between latent variables that were non-significant in both

Table 6.1. Means, standard deviations and *t*-tests of cultural and religious variables.

	Culture	M	SD	t	df	p
Collectivism	European American	26.03	4.75	-7.29	248	<.001
	Indian	30.92	5.67			
Conformity to Norms	European American	14.15	5.77	-5.66	248	<.001
	Indian	17.55	3.66			
Familial Support	European American	26.71	5.72	-3.92	248	<.001
	Indian	29.56	5.72			
Familial Honour	European American	7.53	2.84	-7.20	248	<.001
	Indian	9.95	2.57			
Familial Obligations	European American	30.59	5.15	-1.56	248	.12
	Indian	31.70	5.93			
Religiosity	European American	17.88	10.18	-7.45	241	<.001
	Indian	26.17	7.07			
Spirituality	European American	20.13	10.46	-4.50	243	<.001
	Indian	25.41	7.91			

[9] See appendix section 9.4. for factor loadings.

Table 6.2. Comparison of models of mental illness stigma and cultural and religious variables – removing non-significant paths.

					χ^2	df	p	CFI	RMSEA	LB	HB	$\Delta\chi^2$	df	p
Model 1:		Unconstrained			606.42	288	<.001	.90	.07	.06	.07			
Model 1:		Measurement			627.73	298	<.001	.90	.07	.06	.07			
Model 2:	Removed	FH	→	SD	606.62	290	<.001	.90	.07	.06	.07	0.2	2	.90
Model 3:	Removed	FO	→	SD	606.97	292	<.001	.91	.07	.06	.07	0.35	2	.84
Model 4:	Removed	FO	→	CMHI	618.17	294	<.001	.90	.07	.06	.07	11.2	2	.004
Model 5:	Removed	FS	→	SD	618.27	296	<.001	.90	.07	.06	.07	0.1	2	.85
Model 6:	Removed	Spir	→	CMHI	617.64	298	<.001	.90	.07	.06	.07	0.63	2	.73
Model 7:	Removed	Spir	→	B	622.82	300	<.001	.90	.07	.06	.07	5.18	2	.07
Model 8:	Removed	Spir	→	SD	624.98	302	<.001	.90	.07	.06	.07	2.16	2	.34
Model 9:	Removed	Spir			542.21	234	<.001	.88	.07	.07	.08	82.77	68	.11
Model 10:	Removed	Rel	→	SD	625.14	304	<.001	.90	.07	.06	.07	82.93	70	.14
Model 11:	Removed	CN	→	CMHI	626.92	306	<.001	.90	.07	.06	.07	1.78	2	.41
Model 12:	Removed	FS	→	B	629.74	308	<.001	.90	.07	.06	.07	2.82	2	.24

NB. FH = Familial Honour, FO = Familial Obligations, FS = Familial Support, CN = Conformity to Norms, Rel = Religiosity, Spir = Spirituality, CMHI = Community Mental Health Inventory, B = Benevolence, SD = Social Distance.

Table 6.3. Cultural equivalence of model pathways.

			χ^2	df	p
Collectivism	→	Familial Support	23.21	1	.001
Collectivism	→	Conformity to Norms	6.89	1	.009
Collectivism	→	Familial Honour	2.20	1	.14
Collectivism	→	Familial Obligations	0.17	1	.68
Familial Support	→	CMHI	0.78	1	.38
Conformity to Norms	→	Benevolence	6.55	1	.01
Conformity to Norms	→	Social Distance	5.23	1	.02
Familial Honour	→	CMHI	7.45	1	.006
Familial Honour	→	Benevolence	0.94	1	.33
Familial Obligations	→	Benevolence	0.13	1	.72
Religiosity	→	CMHI	0.41	1	.52
Religiosity	→	Benevolence	0.52	1	.47
Benevolence	→	CMHI	0.28	1	.60
CMHI	→	Social Distance	7.15	1	.007
Benevolence	→	Social Distance	7.04	1	.008
Religiosity	↔	Spirituality	6.26	1	.01

Figure 6.2. Cross-cultural mental illness stigma model with standardised beta values – European American (Indian coefficients italicized). Significant loadings are bolded.
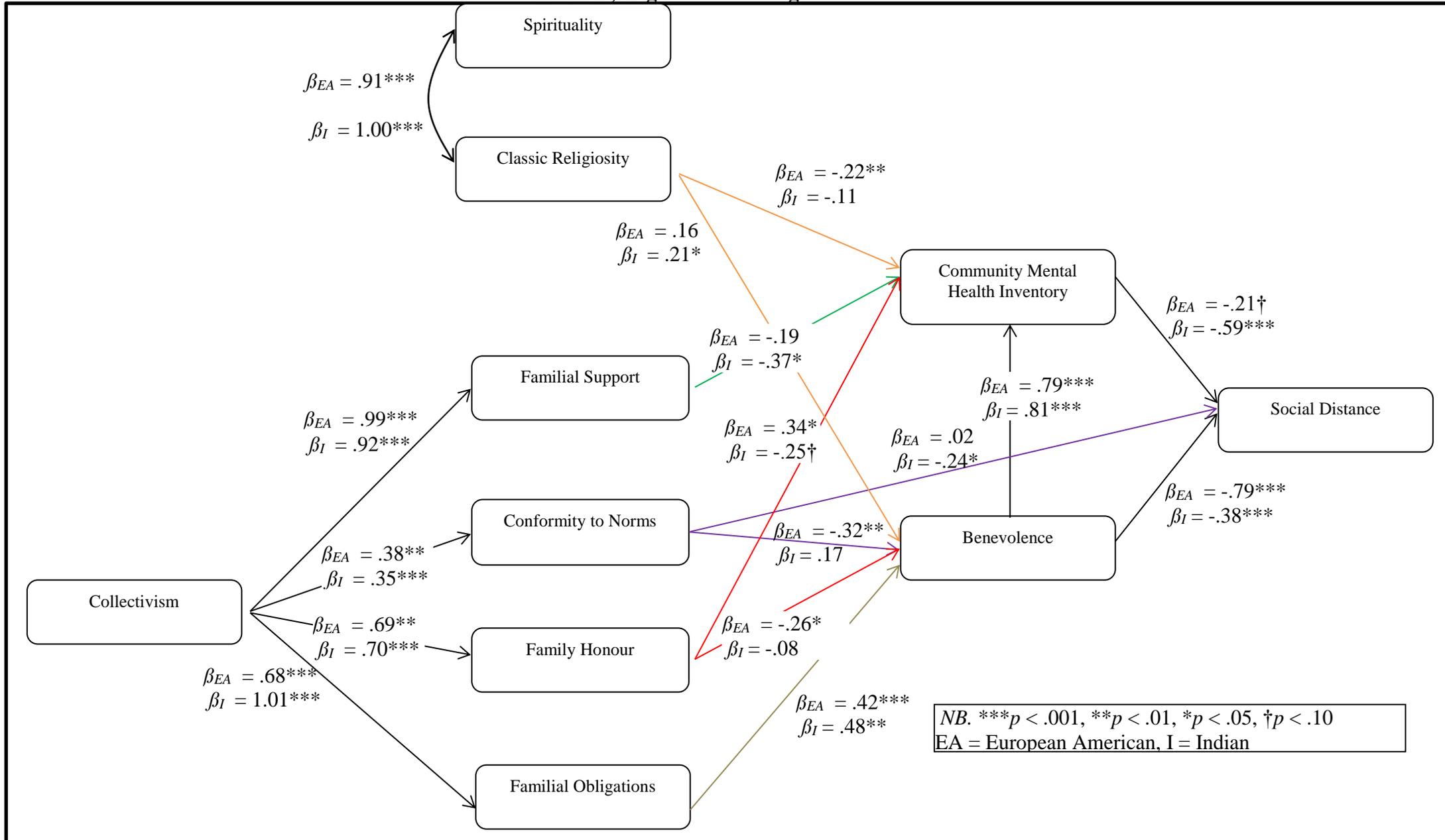
cultures, until all remaining paths were significant in either cultural group. See Table 6.2 for order of path removal. Note that because the removal of *spirituality* worsened the model, this variable was kept as a control variable in the model. The final model held an acceptable model fit (see Model 12 in Table 6.2).

Next I examined the individual hypotheses. *Hypotheses 1 a)* to *d)* were fully supported, as collectivism significantly, positively predicted conformity to norms, family honour, familial obligations and familial support in both cultural groups (Figure 6.2). *Hypothesis 2f)* was not supported, as spirituality did not significantly predict any aspects of mental illness stigma. Contrary to *Hypothesis 2d)*, familial support significantly, negatively predicted CMHI in the Indian, but not European American, sample. Lending partial support to *Hypotheses 2b) & 2e)*, family honour and classic religiosity significantly, positively predicted CMHI in the European American sample. None of the other cultural variables significantly predicted CMHI.

Partially supporting *Hypotheses 2 a)*, *b)* and *e)*, classic religiosity significantly, positively predicted benevolence in the Indian sample, and conformity to norms and family honour significantly, negatively predicted benevolence in the European American sample. This indicates that Indians who were more religious and European Americans who endorsed conformity to norms and familial honour less were significantly more likely to endorse benevolence. Contrary to *Hypothesis 2c)*, participants of both cultural groups who endorsed familial obligations more were significantly more likely to endorse benevolence.

Finally, *Hypotheses 2iii)* were refuted as none of the predictor variables were significantly associated with social distance in the hypothesised directions. Contrary to *Hypothesis 2a)iii)*, Indian participants who reported *lesser* endorsement of conformity to norms were significantly more likely to favour social distance.

6.3.1. Hypotheses 3 and 4: Indirect effects

Next, I tested the indirect effects within the cross-cultural mental illness stigma model –examining

Hypotheses 3 and *4*. As in Chapter 3, the indirect effects were tested via a bootstrapping procedure (Shrout & Bolger, 2002) that examined the 95% bias-corrected confidence intervals (CI) from 1,000 bootstrap samples.

Lending support to *Hypothesis 3i)a)* the indirect effect of collectivism on benevolence through conformity to norms was significant in the European American sample [β = -.14, p = .01 (CI: -.33, -.03)]. This indicates that European American participants who reported greater collectivism were more likely to endorse the value conformity to norms and were in turn less likely to endorse benevolence. Further, partially supporting *Hypothesis 3iii)a)*, the indirect effect of collectivism on social distance through conformity to norms [β = -.17, *p* = .01 (CI: -.35, -.04)] was significant in the Indian sample. This indicates that Indian participants who reported greater collectivism were more likely to endorse the value of conformity to norms and were in turn less likely to endorse social distance. Also, the indirect effect between collectivism through familial obligations on benevolence was significant in the Indian sample [β = .47, *p* = .002 (CI: .24, .68)], lending support to *Hypothesis 3i)c)*. This indicates that Indian participants who reported greater collectivism were more likely to endorse the importance of familial obligations and were in turn more likely to endorse benevolence.

Furthermore, the indirect effect of classic religiosity [β = -.10, p = .04 (CI: -.01, -.29)] on social distance through benevolence was significant in the Indian sample, thus partially supporting *Hypotheses 4e)i)*. This indicates that Indian participants who reported greater classic religiosity were more likely to endorse benevolence and were, in turn, less likely to endorse social distance. Moreover, lending support to *Hypothesis 4c)i)*, the indirect effect of familial obligations through benevolence on social distance was also significant in the European American sample [β = -.56, p = .02 (CI: -5.55, -.11)]. This indicates that European American participants who reported greater endorsement of familial obligations were more likely to endorse benevolence and were, in turn, less likely to endorse social distance. All other indirect effects were non-significant in both cultural samples (*p*s > .05).

6.4. Discussion

The present findings showed that religiosity and specific facets of collectivism were significant predictors of mental illness stigma, although significant cross-cultural variation was evident. Notably, different combinations of the predictor variables were significantly associated with the individual prejudicial beliefs and discrimination of mental illness; these are discussed below.

6.4.1. Family honour

European American participants who reported greater endorsement of upholding the family's honour were significantly less likely to endorse benevolence, but preferred mental health facilities in the community. The importance of upholding the family's honour is generally more prevalent in non-Western cultures (Choudhry, 2001; Juthani, 2001; Kim & Cohen, 2010; Kim et al., 2010; Leung & Cohen, 2011; Thara & Srinivasan, 2000; Weiss et al., 2001). This was corroborated in the present sample, with Indian participants reporting greater endorsement of family honour compared to their European American counterparts. Contrary to Cohen and colleagues' (Kim & Cohen, 2010; Kim et al., 2010; Leung & Cohen, 2011) portrayal of dignity cultures – which would have predicted that social factors were not related to stigma in the European American sample – the present findings indicated that outsiders' evaluations are associated with European Americans' stigma towards mental illness.

Instead, an explanation for the present findings may be that in India, the availability of mental health facilities – be they in the community or segregated – is low (WHO, 2011a, 2011b), whereas the family and the community taking care of someone with a mental illness is viewed as the standard approach to care (Khandelwal et al., 2004). Indeed, in India taking care of a family member who is in need is seen as a societal and religious duty (Adamson & Donovan, 2005; Lawrence et al., 2008; Steiner & Bansil, 1989; Willis, 2012). On the contrary, accepting professional help can be seen as a failure in one's role and duties (Lawrence et al., 2008) and seeking professional help is more likely when it is endorsed by the in-group (Shankar et al., 2006). The present findings indicate that Indians endorsed professional help in the community significantly less compared to their European American counterparts

and this was the case irrespective of their endorsement of family honour. On the other hand, European Americans who valued family honour more were also more likely to support community mental health institutions. The finding that European Americans do not perceive seeking professional help from the community as damaging to the family's honour indicates that the high availability of mental health institutions in the USA (WHO, 2011b) has likely engendered this treatment approach to be the norm.

6.4.2. Familial obligations and support

Endorsement of familial obligations was the strongest predictor of benevolence in both samples. The present results also showed that collectivism was indirectly associated with benevolence through familial obligations in the Indian sample. The Indian culture has clear guidelines as to expectations of men − e.g., financial responsibilities for the family − and women − e.g., obedience and nurturing of family members (Mendelbaum, 1993; Vishwanath & Palakonda, 2011; Weston, 2003). It has been proposed that ancient Indian scriptures relieved people who were unable to fulfil their roles and obligations of honouring these, resulting in resentment towards them (Fabrega, 1991a). The present findings support this line of argument for both the Indian as well as the European American sample, that is persons placing greater importance on familial obligations would in turn be more likely to view people with mental disorders as childlike and who need to be taken care of. This indicates that European cultures also have an unwritten code that revokes people with a mental disorder − likely from the Christian sentiment of helping those in need.

However, in the European American sample, familial obligations were also indirectly associated with social distance through benevolence. This indicates that European American participants who placed greater value on familial obligations were more likely to view people with mental illness as childlike and identify a need for care, which in turn was related to a preference to distance oneself from people with mental illness. In non-Western cultures the duty of caring for family members is embraced organically and is seen as part of one's social identity (Willis, 2012), whereas in Western cultures embracing familial obligations is related to the quality of family relations and seen as a personal choice

(Freeberg & Stein, 1996). Thus, the present findings indicate that in the European American context, before an evaluation of familial relationship quality can take place, the first response to caring for a relative with mental illness is a preference to distance oneself from this responsibility.

This notion is further supported by the present finding that Indian participants who were more likely to endorse familial support – i.e. agree with supporting their family members with any kind of problem – were more prejudiced towards professional support and institutions in the community for people with mental illness. This is in line with the literature that shows that in more collectivist cultures the in-group – in this case family and close friends – is heavily relied upon for any kind of issue, whereas the out-group – in this case professional mental health services – is avoided (Oyserman et al., 2002). Indeed, in South Asian cultures, caring for a family member is perceived as the norm and a person's duty (Adamson & Donovan, 2005; Lawrence et al., 2008; Steiner & Bansil, 1989; Willis, 2012). More specifically, in India when an individual is faced with a problem, it is perceived as the family's responsibility (Laungani, 1992) and, in regards to health issues, family members are seen as key resources (Grewal et al., 2005). The findings of the present investigation underline that issues of mental health are no exception.

6.4.3. Conformity to norms

Furthermore, the literature purports that in India, the pressure to conform to social norms is highly valued (Chan, 1996; Mines, 1988; Sahay & Walsham, 1997; Triandis, 1989). This was confirmed in the present sample, where Indian participants endorsed conformity to norms significantly more than their European American counterparts. On the one hand, the results showed that in the European American sample, greater endorsement of conformity to norms was significantly related to lesser agreement with the prejudicial belief of benevolence and, further, collectivism was indirectly, significantly associated with benevolence through conformity to norms. On the other hand, in the Indian sample endorsement of conformity to norms was significantly associated with lesser preference for social distance, and further, collectivism was indirectly associated with social distance through conformity to norms. This indicates

that European American participants who valued conforming to norms were less likely to view people with mental illness as childlike and as if they need to be taken care of, whereas Indians who valued conforming to norms were less likely to prefer keeping away from individuals with a mental illness. This is likely because the expectation to fulfil particular societal tasks or roles is ingrained in the process of conforming to norms. Thus, these findings lend further support to the notion that people with mental illness are revoked off responsibilities (Fabrega, 1991a) and by extension also off the responsibility to conform. On the contrary, in European Americans, non-adherence to social norms due to mental illness appears to be met with less benevolence, likely because in Western cultures the emphasis is placed on independently fulfilling tasks and obligations (Hofstede et al., 2010; Weiss et al., 2001).

6.4.4. Religiosity

Spirituality did not significantly predict any aspects of mental illness stigma, suggesting that it is religious practice and doctrine – and not a person's perceived spirituality or interest in finding meaning and values – that is related to endorsement of stigma. In the Indian sample, classic religiosity significantly predicted greater benevolence, and classic religiosity was also indirectly associated with social distance through benevolence. This indicates that more religious Indian individuals viewed people with mental illness as childlike and in need for care and, in turn, demonstrated a lesser preference to distance themselves from people with mental illness. This is in line with literature that purports that in non-Western cultures, mental illness can be perceived as punishment for the individual or their family members for breaking religious rules or neglecting traditional practices (Cooper & Sartorius, 1997; Fabrega, 1991a; Patel, 1995) and, in turn, eliciting greater discrimination. It is noteworthy that Hindu participants scored significantly lower on benevolence compared to their Christian and non-religious counterparts. It was beyond the scope of the present study to test moderation effects between religious affiliation and religiosity, however, these results encourage that this should be considered in future studies.

Furthermore, European American participants who reported greater religiosity were significantly

less inclined to support institutions in the community for mental illness, whereas this association was non-significant in the Indian sample. Religiosity is generally associated with conservatism – tradition, conformity and security (Duriez, 2003) – in which case it is expected that religiosity would be incongruent with seeking professional medical help for mental illness. The present findings support this notion and indicate that European Americans perceived religiosity and support for professional help for mental illness in the community as conflicting.

6.4.5. Strengths, limitations, and future directions

The main strength of the present approach is that it empirically examined religiosity and specific facets of collectivism in relation to mental illness stigma. Abdulla and Brown (2011) had theorized associations between family honour, conformity to norms, familial obligations, familial support, and religiosity with mental illness stigma. However, until now research that empirically examined these relationships did not exist. The present investigation found support for the significance of these variables in relation to mental illness stigma, lending support to Abdulla and Brown's (2011) proposal.

A further strength of the present investigation is that it examined an overarching model linking the cultural variables and mental illness stigma, whereas previous research that examined cultural variables in relation to mental illness stigma only tested individual associations (Ku, 2007; Papadopoulos, 2009; Papadopoulos et al., 2013). The present approach enables the evaluation of the contribution of religiosity and cultural variables and their respective importance in predicting mental illness stigma.

The present approach necessarily had limitations. These mainly pertain to the data analysis and are the same as in Study 2, therefore please refer to Chapter 3 for details. Furthermore, the present study followed the literature that classes conformity to norms, familial support, honour and obligations as facets of collectivism (Abdulla & Brown, 2011; Lauber & Rössler, 2007; Sanchez & Gaw, 2007; Weiss et al., 2001), however research shows that these concepts may merely be related to collectivism as opposed to being its sub-categories (Gelfand et al., 2006, 2011; Kim & Cohen, 2010; Kim et al., 2010; Leung & Cohen, 2011; Matsumoto et al., 1997; Rhee et al., 1996). For example, Gelfand and colleagues

(2006, 2011) noted that tightness-looseness of a culture (importance placed on social norms and graveness of sanctions for non-adherence) was a distinct cultural dimension to collectivism (e.g., Brazil is highly collectivist, but has a low emphasis on conforming to norms; Germany is less collectivist, but has a great emphasis on conforming to norms; Chan, 1996; Triandis, 1989). A similar case can be made for family focus – with Chinese and Japanese showing a lower family focus than Koreans, but greater than Americans (Matsumoto et al., 1997; Rhee et al., 1996) – which has implication for the relationship between collectivism and endorsement of familial support, obligations and honour. Thus, this warrants further research into what aspect of collectivism – as opposed to these specific cultural variables – is related to mental illness stigma.

6.4.6. Conclusion

While the previous chapter demonstrated that Stuart's assertion that he is often perceived as "a lunatic with a knife or on some sort of rampage" (Time to Change, 2010, 0:57) resonates across cultures, the present investigation gave insight as to why this may be the case more so in some as opposed to other cultures. The present study revealed that religiosity and facets of collectivism are essential in explaining cultural differences in mental illness stigma, specifically demonstrating that the extent that values about religiosity, conformity to norms, familial obligations, support and honour are endorsed significantly predict prejudice and discrimination towards people with mental illness.

7. General Discussion

What does the public know and believe about mental disorders, and what are the differences between cultures? The present dissertation aimed to address these questions, both across cultures and in relation to cultural variables, by examining recognition of symptoms of mental disorders, causal, lay and professional help-seeking beliefs, and prejudicial beliefs about and discrimination towards people with mental disorders. While the literature widely acknowledges variation in this topic (Angermeyer & Dietrich, 2006; Ayalon & Areán, 2004; Jenkins, 1988; Jorm, 2000; Jorm et al., 2005), research that has examined cultural variables to explain these differences has been scarce (Kuo et al., 2007; Tata & Leong, 1994; Wong et al., 2010). The main novelty of the present dissertation was that it addressed two major limitations of studying this topic cross-culturally: first, by developing and validating measures of beliefs about mental disorders to ensure they were suitable for cross-cultural analysis, and, second, by examining associations with cultural variables – namely collectivism and its facets – aiming to explain cross-cultural variation in mental health literacy and stigma.

7.1. Variation across mental disorders

While the main emphasis of the present dissertation was on the variation in knowledge and beliefs due to culture, the present research also explored differences between mental disorders. The schemata for schizophrenia and depression were closely connected with the Western medical model, whereas the schemata for GAD appeared to be related to a number of lay frameworks. The results from Study 1 showed that awareness about depression and schizophrenia was significantly better than GAD. The former two mental disorders frequently feature in anti-stigmatisation campaigns, the media, books and TV while the latter is largely absent (National Alliance of Mental Illness, 2015; Royal college of psychiatrists, 2015; Sartorius & Schulze, 2005; Tartakovsky, 2011; World Psychiatric Association, 2016). The findings also showed that in regards to schizophrenia and depression participants generally endorsed causal beliefs that followed psychiatric models, i.e., greater endorsement of biological causes in relation to schizophrenia, but greater endorsement of life events in regards to depression. On the other

hand, participants tended to attribute the cause of symptoms of GAD to the person – e.g., due to personal weaknesses. Thus, participants' causal beliefs for symptoms of schizophrenia and depression mirrored psychopathological models (Mind, 2012c, 2014; NHS, 2014c, 2014e), while this was not the case in relation to GAD (Mind, 2015). This further highlights the public's lower awareness of GAD. As Study 2 showed, it is vital that symptoms of mental illness are recognised as a mental disorder, because this is related to a person's causal framework and endorsement of treatments. Indeed, participants were more likely to endorse seeking medical help in relation to schizophrenia as compared to GAD, indicating that persons faced with symptoms of GAD would be less likely to seek adequate help.

As Reavley and Jorm (2011a) demonstrated, awareness and beliefs about other anxiety disorders – e.g., social phobia, post-traumatic stress disorder – are similar to patterns found in the present research in regards to GAD. The research about knowledge and beliefs about anxiety disorders are limited, despite their high prevalence worldwide (Kessler et al., 2005; WHO, 2001a). Yet other mental disorders, such as personality disorders, have received even less publicity and the public holds false beliefs, such as the non-existent multiple personality disorder (Cherry, 2005). Awareness about common physical disorders are ingrained in the public's consciousness, with facts about the human body and malfunctions (e.g., HIV/AIDS) being part of the school curriculum in the UK (Department of Education, 2015). Due to the high prevalence of mental disorders worldwide (WHO, 2001a), this needs to be the case for mental disorders as well. Unfortunately, it was beyond the scope of the present dissertation to compare and contrast knowledge and beliefs about different mental disorders further; however, the findings indicate that it is vital that future research addresses this.

7.2. Variation across cultures

Next, I will examine variation in knowledge and beliefs about mental disorders across cultures. Mental illness schemata in Western samples were greatly shaped by the Western medical model, whereas in non-Western samples mental illness schemata were also connected to lay frameworks. The results from Studies 1 and 2 were in line with the literature (Ayalon & Areán, 2004; Jenkins, 1988; Jorm et al.,

2005; Loo et al., 2012; May et al., 2014), finding significantly better recognition of mental disorders in the European samples. Recognition of symptoms as a mental disorder and psychiatric problem was lower in the Indian sample, likely because specialist psychiatric help and awareness campaigns are not prevalent in India (WHO, 2011a, 2011b). Lawrence and colleagues (2006) found that the majority of Caribbean and Caucasian British individuals, but not South Asian, identified depression as an illness. Furthermore, the majority of Caribbean and South Asian participants perceived sadness and grief as an illness. Thus, although similar to the Caucasian sample, Caribbean participants recognised depression as an illness, it appears that their concept of depression differed. This illustrates that not only does recognition of mental disorders differ across cultures, but the overall cultural conceptualisation of disorders appears to vary as well.

In the same fashion, the literature also showed that causal beliefs about mental disorders differ across cultures (Narikiyo & Kameoka, 1992; Sheikh & Furnam, 2000). Compared to persons of European descent, individuals from Asian or African-Caribbean cultures attribute mental disorders more to social causes (Dietrich et al., 2004; McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992) and less to biological causes (McCabe & Priebe, 2004; Narikiyo & Kameoka, 1992), and vice versa. Indeed, Study 1 found that Caucasian British participants, compared to South Asian and African-Caribbean British participants, endorsed biological causes for schizophrenia, depression and GAD significantly more, while the latter two ethnic groups tended to endorse social causal beliefs more than the Caucasian British sample. Furthermore, Study 2 revealed that the concept of biological causes of mental disorders did not hold in the Indian sample. Thus it appears that because the concept of mental illness differs across cultures – namely psychiatric awareness is limited in the Indian culture – mental illness is less often viewed as a psychiatric issue.

Study 2 revealed that the concept of professional help for mental illness that held equivalence across cultures reflected a medical model of mental illness (e.g., *take medication*). It is likely that due to the lower availability and range of different psychological services available in India, compared to the

USA (WHO, 2011a, 2011b), Indians view rudimental services as more accessible and feasible treatment options for symptoms of mental illness. Furthermore, in line with the literature (Kuo et al., 2007; Tata & Leong, 1994), the results showed that psychological help was endorsed significantly more by the European American, as opposed to the Indian, participants. This gives credence to the notion that greater availability of psychological services and publicity of their availability is related to the public perceiving them as more viable solutions.

While the majority of the literature has focused on professional help-seeking beliefs (Kuo et al., 2007; Tata & Leong, 1994; ten Have et al., 2010), Study 2 also examined lay help-seeking beliefs. Individuals faced with symptoms of mental illness seek help from a range of informal sources (Chadda et al., 2001; Cooper-Patrick et al., 1997; Penny et al., 2009; Shankar et al., 2006; Van Hook, 1999) and indeed often do so before seeking professional help (Cooper-Patrick et al., 1997; Van Hook, 1999). Study 2 revealed that, equivalently across cultures, a broad range of informal sources and strategies – e.g., friends, spiritual leader, going on holiday – were perceived as viable sources for managing symptoms of mental illness. This indicates that there is less cross-cultural variability in potential sources of lay help. However, perceived helpfulness of these lay sources still varied, as was evidenced by Indians – as opposed to European Americans – endorsing lay help more.

In line with the results so far and the literature (Abdulla & Brown, 2011; Angermeyer & Dietrich, 2006; Kurihara et al., 2000; Murthy, 2002; Rüsch et al., 2005), Study 3 also revealed cross-cultural variation (Indian vs European American) in mental illness stigma. First, authoritarianism – the belief that people with mental disorders are different and inferior and that their life decisions should be made by others – was found not to hold across cultural groups. Indeed, several studies were unable to find authoritarianism as a factor (Brockington et al., 1993; Morris et al., 2012; Sevigny et al., 1999; Sørensen & Sørensen, 2013). This was likely the case because authoritarianism assumes personal responsibility for the mental illness; however, non-Western cultures tend to make more external attributions about mental illness (Dietrich et al., 2004). Second, the notion of *benevolence* that held up cross-culturally was

the sentiment of the community's responsibility for people with mental illness as well as the value of people with a mental illness within society. Still, aspects about increased tax spending did not hold cross-culturally, likely because of the low financial resources directed towards mental health care in India compared to the USA (2011a, 2011b). Third, *community mental health inventory (CMHI)* relates to the endorsement of care and psychological help in the community. In India, the family, community, and traditional or religious leaders are the main source of help for people with a mental illness (Ganesh, 2011; Khandelwal et al., 2004; Kishore et al., 2012; Shankar et al., 2006; WHO, 2011a, 2011b). The finding that some of the items pertaining to this sub-scale held in both the European American and Indian groups indicates that some awareness of professional help exists in the Indian public. This is further supported by results from Study 2, that found that mainstream psychological help – e.g., taking medication – were relevant in the Indian culture. Fourth, the general concept of *social distance* held across cultures. Notions of social distance that were revealed as non-significant in the Indian sample included furthering the rights of people with mental disorders. This is likely due to the fact that although a national mental health scheme has been in place (WHO, 2001b), India first introduced a national mental health policy in 2014 (IMHFW, 2014). Thus the legal framework surrounding mental illness is a fairly recent one, underlining why this notion may be unfamiliar. Furthermore, in line with other studies which found that non-Western – compared to Western – cultures showed greater stigma towards mental illness (Abdulla & Brown, 2011; Angermeyer & Dietrich, 2006; Kurihara et al., 2000; Murthy, 2002; Rüsch et al., 2005), the results from Study 3 also revealed that Indian participants were significantly less benevolent, endorsed CMHI less and favoured social distance more than their European American counterparts.

7.3. Mental health literacy and mental illness stigma models across cultures

The previous section demonstrated how the preliminary findings of the present dissertation corroborated with the literature. In Studies 2 and 3 I went a step further by cross-culturally testing models that had hypothesised associations between knowledge and beliefs about mental disorders (i.e., MHL

model, Jorm et al., 1997a; mental illness stigma model, Corrigan, 2000; Corrigan & Watson, 2002). The following sections discuss these results.

7.3.1. Mental Health Literacy model

Study 2 found strong cross-cultural validity for the previously proposed associations between recognition, causal beliefs and help-seeking beliefs (Jorm et al., 1997a). In both cultural groups recognising symptoms as a sign of mental illness was the strongest predictor of all other aspects of MHL. This underlined the importance of knowing about symptoms of mental illness and endorsement of seeking appropriate help for these symptoms (Jorm et al., 1997b; Lauber, Nordt, et al., 2003; Wright et al., 2007). Most campaigns to raise awareness about mental disorders focus on educating the public about symptoms, causes and treatments. The present findings lend further support to the literature that finds merit in this approach (Corrigan et al., 2001; Hahn, 2002; Holmes et al., 1999; Penn et al., 1999; Rüsch et al., 2005). Study 2 found that the aspects of MHL – recognition, causal and help-seeking beliefs – were all related with each other, supporting the notion that these constructs make up schemata about mental illness. Thus, in order to improve MHL it is essential to understand the schema with which an individual is viewing mental illness.

The main difference in the MHL model across cultures concerned beliefs about lay help in relation to symptoms of mental illness. While individuals worldwide deal with symptoms of mental illness by seeking lay help and practicing lay strategies (Chadda et al., 2001; Cooper-Patrick et al., 1997; Penny et al., 2009; Shankar et al., 2006; Van Hook, 1999), the results from Study 2 revealed that perceived helpfulness to manage symptoms in this form differed cross-culturally. In the Indian culture the community, and particularly the family, holds the main responsibility for treatment and care for a person with mental illness (Grewal et al., 2005; Khandelwal et al., 2004). Thus, the mental illness schemata in this setting was closely connected to familial and social factors, whereas this was not the case in the European American setting. While individuals from Western cultures also widely draw on informal sources of help when faced with symptoms of mental illness (Cooper-Patrick et al., 1997; Van Hook,

1999), the present findings indicated that lay help is not held in high esteem and indeed is not perceived as part of the treatment process. This is a significant finding, first, because it conflicts with treatments purporting the merits of self-help strategies for milder forms of mental illness (e.g., yoga, exercise, talking to friends and family; Mind, 2012c, 2015; NHS, 2014e, 2016b) and therefore has implications for patients' acceptance and completion of these kind of treatments. Second, this is noteworthy because the MHL literature proposed that individuals are more likely to seek professional help if this is endorsed by close friends, relatives or in-group members (Jorm, 2011). This has been shown to be the case in non-Western cultures (Penny et al., 2009), however if this association is not as strong in Western cultures, then the question arises of how professional help can be promoted for individuals in need of it.

7.3.2. Mental illness stigma model

In Study 3 the mental illness stigma model – proposed by Corrigan (2000) and Corrigan and Watson (2002) – was tested cross-culturally by measuring common prejudicial beliefs (benevolence, community mental health inventory [CMHI]) and discrimination (social distance). In both the Indian and the European American sample, benevolence and CMHI were significantly positively related and both in turn were significantly negatively associated with social distance, which demonstrated that the mental illness stigma model was robust and equivalent across cultural groups.

7.4. Variables that predict knowledge and beliefs about mental illness

The previous section demonstrated how the present dissertation extended the literature by confirming that hypothesised models outlining associations between knowledge and beliefs about mental disorders were invariant and applicable cross-culturally. The final aim of the present dissertation was to examine variables that explained cultural differences in knowledge and beliefs about mental disorders.

7.4.1. Collectivism

In the present dissertation the main cultural dimension that was examined in relation to knowledge and beliefs about mental disorders was collectivism. Study 2 revealed that collectivism significantly predicted endorsement of social causal beliefs in the European American sample and this association

trended towards significance in the Indian sample. This finding lends support to the notion that collectivists are more likely to attribute causes of mental illness to the community (Dietrich et al., 2004; Narikiyo & Kameoka, 1992; Speller, 2005). It is likely that this association was only significant in the European American sample because more collectivist cultures (i.e., India, Hofstede et al., 2010) already heavily rely on social explanations for mental illness (Penny et al., 2009; Shankar et al., 2006).

Study 2 also found that collectivism significantly predicted lay help-seeking beliefs directly and professional help-seeking beliefs indirectly through lay help-seeking beliefs in the Indian sample. Thus, in India – where lay help is perceived as an ingrained part of the treatment process for mental illness (Grewal et al., 2005; Khandelwal et al., 2004) – being more collectivist was related to being more likely to endorse lay help. This finding also underlines the notion that in non-Western cultures, where the family and community are the main source of help for symptoms of mental illness (Grewal et al., 2005; Khandelwal et al., 2004), greater personal endorsement of professional help is facilitated by endorsement of professional help by the family and community (Penny et al., 2009). This has possible implications for the facilitation of professional help for mental disorders in non-Western contexts; for example, that word of mouth and community endorsement would be vital.

The second part of Study 2 (Chapter 3) examined the direct relationship between collectivism and mental illness stigma. While some studies found that greater collectivism was associated with greater endorsement of mental illness stigma (Abdulla & Brown, 2011; Anglin et al., 2006; Ku, 2007; Lauber et al., 2004; Magliano et al., 2004), Papadopoulos (2009) and Papadopoulos and colleagues (2013) reported mixed results, namely that greater collectivism was associated with greater endorsement of authoritarianism and social distance in their American sample and further that collectivism was significantly negatively associated with community mental health inventory their American and Chinese samples. The results from Study 2 mirrored the latter studies and found the relationship between collectivism and mental illness stigma to be non-significant in both cultural groups. The literature suggested that more specific facets of collectivism – instead of the overall construct – would be better

predictors of mental illness stigma (Abdulla & Brown, 2011; Lauber & Rössler, 2007; Sanchez & Gaw, 2007; Weiss et al., 2001).

7.4.2. Conformity to norms, familial support, honour and obligations

The second part of Study 3 (Chapter 6) addressed this by examining conformity to norms, familial honour, support and obligations in relation to mental illness stigma. First, one explanation for greater endorsement of mental illness stigma proposed that symptoms – such as hearing voices or excessive worrying – may be perceived as socially unacceptable and as outside the norm (Abdullah & Brown, 2011; Hinshaw, 2007). The results showed that greater endorsement of conforming to familial or social norms significantly predicted less benevolence in the European American sample, and was also significantly associated with less social distance in the Indian sample. This indicates that, on the one hand, European Americans who value conforming to norms perceive people with a mental illness with less benevolence. Thus in a European American context, when mental illness is associated with breaking social norms, individuals value people with mental illness less and feel less responsibility for them. On the other hand, in an Indian context it appears that the expectation to fulfil particular societal tasks or roles is ingrained in the process of conforming to norms. Thus, these findings lend further support to the notion that people with mental illness are exempted from responsibilities (Fabrega, 1991a) and, by extension, also from the responsibility to conform.

Similar to conformity to norms, the results revealed that valuing family honour in the European American context was met with less benevolence towards people with mental illness. However, endorsement of family honour was also related to supporting community mental health institutions in the European American sample. As was seen in Study 2, in the USA, professional help for symptoms of mental illness is highly endorsed and appears to be perceived as the streamlined treatment approach for mental disorders. The results of Study 3 reflect that professional care is met with lesser endorsement of stigma towards such treatments. Conversely, in India, caring for a family member who is in need is seen as a societal and religious duty (Adamson & Donovan, 2005; Lawrence et al., 2008; Steiner & Bansil,

1989; Willis, 2012) and this is the main approach to taking care of a person with mental illness (Khandelwal et al., 2004). In India accepting professional help is seen as a failure in one's role and duties (Lawrence et al., 2008), however in the present findings, Indians did not associate the family's honour with endorsement of stigma towards mental illness. Instead, endorsement of familial support in the Indian sample significantly predicted lesser endorsement of community mental health institutions. The results in Study 2 illustrated that Indians closely relate lay and professional help in relation to mental illness. However, the results from Study 3 reveal that in India, community mental health institutions are nonetheless perceived as negative. Thus, in the Indian culture, because lay coping strategies are the norm (Adamson & Donovan, 2005; Lawrence et al., 2008; Steiner & Bansil, 1989; Willis, 2012) and not professional help (WHO, 2011a, 2011b), it appears that endorsement of professional help is conditional on congruence with people's lay framework of support for mental illness.

Further, Study 3 found that valuing the fulfilment of familial obligations was met with benevolence in both European Americans and Indians. While the Indian culture has clear and detailed guidelines of social conduct (Mendelbaum, 1993; Vishwanath & Palakonda, 2011; Weston, 2003), ancient Indian scriptures relieved people who were unable to fulfil their roles and obligations off honouring these, resulting in resentment towards them (Fabrega, 1991a). The present findings support this line of argument, but show that this was also applicable in the European American context. One explanation is that individuals of European descent are more likely to want to master tasks, duties and obligations independently and without outside support (Hofstede et al., 2010); indeed, Weiss and colleagues (2001) reported that Caucasian British patients with a mental disorder did not want to "burden" (p. 82) friends and family with their mental health issues. The results of Study 3 further showed that in the European American sample familial obligations were indirectly associated with social distance through benevolence, while this was not the case in the Indian sample. It appears that instead of embracing the need for care of people with mental illness, European Americans prefer to distance themselves from this responsibility.

It is noteworthy that only conformity to norms predicted discrimination in the Indian sample, whereas endorsement of familial obligations indirectly predicted discrimination through prejudicial beliefs in the European American sample. This indicates that, on the one hand, in the Indian culture discriminating against people with a mental illness is lower in people endorsing conformity to norms and perceiving mental illness as being relieved of the responsibility to conform. On the other hand, in the European American context the need to fulfil duties and obligations elicits such great pressures on the public that it is related to the desire to discriminate against people with a mental illness as they may be perceived as being unable to fulfil these duties.

7.4.3. Religiosity

Study 3 also investigated religiosity in relation to mental illness stigma. The findings revealed that religious practice and doctrine – and not a person's perceived spirituality or interest in finding meaning and values – was significantly related to endorsement of stigma. More religious Indian individuals viewed people with mental illness as childlike and in need for care and, in turn, demonstrated a decreased preference to distance themselves from people with mental illness. This follows the notion that in non-Western cultures, mental illness can be perceived as punishment for the individual or their family members for breaking religious rules or neglecting traditional practices (Cooper & Sartorius, 1997; Fabrega, 1991a; Patel, 1995) and, in turn, elicits greater discrimination. Conversely, more religious European American individuals were significantly less inclined to support institutions in the community for mental illness. This highlights that in a European American context religiosity and support for professional help for mental illness is perceived as conflicting. It is noteworthy that Hindu participants scored significantly lower on benevolence compared to their Christian and non-religious counterparts. It was beyond the scope of the present study to test moderation between religious affiliation and religiosity; however, these results suggest that this should be considered in future studies.

7.5. Implications

"Some healers say beware: 'You treat but we heal.' And they mean that after I have treated a patient, they must finish the job. They must restore balance, so that the patient becomes a social being again in his own culture."

Gualbert Ahyi, one of the first trained psychiatrists in Benin (Adjovi, 2016)

The Beninese psychiatrist, Dr. Ahyi, portrays the sentiment that runs through the present dissertation, namely that it is vital to consider culture in relation to mental illness. Non-psychiatric strategies, such as talking to friends, family members, doing physical exercise or relaxation strategies are promoted in relation to some mental disorders (Mind, 2012c; NHS, 2014f, 2016b, 2016c), yet, worldwide, lay help is the first point of call when faced with any type of mental illness (Cooper-Patrick et al., 1997; Van Hook, 1999). According to Heider (1958) every person is a 'naïve scientist', trying to find patterns and stability in their social reality; so it is not surprising that cognitions and behaviours in relation to mental illness are no exception. Kitchener and Jorm (2002) advocated the importance of mental health first aid, placing responsibility on friends, relatives and the public to facilitate recognition and help-seeking. The present dissertation lends further support to the notion that mental health services need to embed the support network and lay beliefs about treatment in their programmes.

Beyond the finding that individuals prefer to manage symptoms through lay strategies and by drawing on lay sources (Chadda et al., 2001; Cooper-Patrick et al., 1997; Penny et al., 2009; Shankar et al., 2006; Van Hook, 1999), the present findings indicated that in a non-Western context, friends, family members, and spiritual or religious healers are held in the same esteem as medical or psychological professionals. This is similarly reflected in the Rwandan man's (Section 1.4.) view that his country has had "trouble with Western mental health workers" (Solomon, 2010, 15:54). In an increasingly globalised world, it is not sufficient to implement more of the same treatment approaches around the world. The present dissertation demonstrates that social and cultural schemas shape a person's knowledge and beliefs about mental disorders. As mentioned previously, India recently introduced a national mental health policy, which gives confidence to the national improvement of mental health services. However,

as the present dissertation illustrates, all well-intentioned efforts may only bring about the desired change if the public and thus the cultural schemas and understanding are part of the development of these services. Thus, like Dr. Ahyi at the beginning of this section, it should be encouraged for local leaders and the community to be incorporated in the treatment process to ensure better welfare of people with mental illness.

Study 2 attributed the greater endorsement of non-psychiatric explanatory systems to the lack of availability in non-Western countries; however, Study 1 showed that even between ethnic groups within the UK, discrepancies in MHL exist. Thus, while the UK has a sound mental health service compared to other countries (WHO, 2011a, 2011c, 2011d), unless this is recognised by those in need of such services, it may be in vain. The British National Health Service has recognised the importance of culturally competent services (NHS, 2016d), which is also reflected in the fact that 41% of their staff are from a non-White ethnic background (Health & Social Care Information Centre, 2013). Patients with mental health issues have been found to be more likely to access professional help if their family or friends encouraged them to do so (Penny et al., 2009). This is even more relevant in cultures scoring high on collectivism, where the in-group – their support and advice – is highly relied upon (Oyserman et al., 2002). Thus, while the NHS has laid good foundations to overcoming cultural barriers, local communities and culture-specific points of access (e.g., community centres, religious institutions) should be involved more in mental health education and promotion of professional treatments. Furthermore, other countries that have high levels of immigration - e.g., the USA (Homeland Security, 2013), Australia (Australian Bureau of Statistics, 2016), France (Eurostat, 2015) – should develop and implement similar systems. This is even more vital in view of the current wave of Middle Eastern migrants coming to Europe (International Organisation for Migration, 2015), bearing in mind that they likely have experienced traumatic events and endured stressful conditions, and therefore will be in dire need of mental health services.

Furthermore, anti-stigmatisation campaigns mainly focus on dispelling false beliefs and educating

the public (National Alliance of Mental Illness, 2015; Royal college of psychiatrists, 2015; WHO, 2010; World Psychiatric Association, 2016). As mentioned in Chapter 5, the Time to Change campaign – where the protagonist, Stuart, pronounced "I'm sorry to disappoint you if you were expecting a lunatic with a knife or on some sort of rampage" (2010, 0:54) – draws on stereotypes and prejudices widespread in the Western media (Mind, 2009). Similarly, other Western anti-stigmatisation campaigns also draw on Western stereotypes and prejudicial beliefs, which may impede the benefits in ameliorating beliefs about mental disorders in campaigns for non-Western populations because such Western campaigns have less cultural relevance. While education has been central to mental health education and anti-stigmatisation campaigns, few studies – as well as the present research (Tables 3.8 & 5.9) – have found significant associations between participants' level of education and mental health literacy and mental illness stigma (see Angermeyer & Dietrich, 2006). Study 3 revealed that cultural variables, namely facets of collectivism, predicted stigma towards mental disorders. This gives rise to the possibility that campaigns addressing such cultural values may have better outcomes in ameliorating stigma towards mental illness also in non-Western populations.

7.6. Limitations and future directions

Only the overarching limitations are summarised here as the methodologies between the three studies differed. First, the present dissertation was correlational in nature. This approach suited the present dissertation as it aimed to determine associations between variables that may predict knowledge and beliefs about mental disorders. As has been discussed throughout, it appears that individuals perceive and respond to mental illness through set schemas (Jorm, 2011). These are associated with knowledge and beliefs about mental disorders and, the present dissertation has shown, these are predicted by social and cultural variables. Piaget (1952) described that when information incongruent to the current schema was encountered it would be updated to accommodate the new information. In line with the MHL and stigma literature (see Abdulla & Brown, 2011), the present research did not focus on changes in schemata. Therefore, it would be beneficial for future research to explore whether such variables and

their manipulation (e.g., priming participants to emphasise certain cultural frameworks) alter schemata about mental illness and in turn people's MHL and endorsed stigma.

Second, the cultural value dimension of collectivism was used to explain cultural variation in findings. The main limitation with this approach is that cultures differ on a number of variables; including other value dimensions (Hofstede, 1980, 1984; Inglehart & Baker, 2000; Schwartz, 1994), self-construals (Markus & Kitayama, 1991), and social axioms (Leung et al., 2002). A recent study by Vignoles et al. (2016) highlight the shortcomings of comparisons between East versus West, and demonstrate how different non-Western cultures differ on several dimensions of independence and interdependence. For example, Southern and Eastern Asian cultures showed an emphasis on similarity, harmony and variability across contexts, whereas Sub-Saharan African samples were set apart by their focus on self-interest and self-containment married with similarity and dependence on others. These findings evidence the subtleties across different cultures and may explain the varying results in cross-cultural MHL and stigma research. Moreover, Cohen (2009) has suggested that cultural variables may not be sufficient in explaining cultural variation in social phenoma, and recommended the incorporation of religion, socioeconomic status and region within a country. In section 1.3.2. I speculated about how other cultural variables may be related to MHL and stigma and discussed a number of potential associations. Thus, future research may want to consider incorporating other conceptualisations of culture when attempting to further explain cultural variation in MHL and stigma.

Third, the present dissertation demonstrated that lay help was perceived as key in the treatment process in more collectivist cultures. The items of the lay help-seeking beliefs measure in Study 2 was based on previous MHL studies, however these were mainly based on Western samples. It is possible then that lay suggestions that are culture specific were missed. Due to the widespread use of lay help in relation to mental illness in both Western and non-Western cultures (Chadda et al., 2001; Cooper-Patrick et al., 1997; Penny et al., 2009; Shankar et al., 2006; Van Hook, 1999) and the emphasis placed on lay help in non-Western cultures (Khandelwal et al., 2004; Sewilam et al., 2014; Shankar et al., 2006), the

nuances of different types of lay help and the relative importance placed on these strategies is a vital avenue for future research. Due to the key influence that the in-group holds over individuals high in collectivism (Oyserman et al., 2002), future studies may also want to directly measure individuals' perceptions of the extent to which their in-group – i.e., family or friends – would endorse professional psychological help.

Another limitation pertains to the ethnic and cultural samples studied. In Study 1 the ethnic groups studied were broad and the merit of using more narrow culture groups was suggested (e.g., Agyemang et al., 2005). This approach was followed in Studies 2 and 3, studying Indians from India and European Americans from the USA. This yielded insightful results in the associations of knowledge and beliefs about mental disorders in these cultures. While European Americans have similarities with other Western cultures (e.g., UK, France) and India has similarities with other non-Western cultures (e.g., Sri Lanka, West Africa), they do also differ (Hofstede et al., 2010), and, therefore, the generalisability of these results is limited. Thus, future research should examine more cultural groups; for example, in view of the current wave of Middle Eastern migrants coming to Europe (International Organisation for Migration, 2015), this cultural group should be focused on more (particularly because the MHL and mental illness stigma literature focusing on this cultural group is scarce; Al-Krenawi et al., 2004; Kayrouz et al., 2014; Sewilam et al., 2014).

Fifth, the present research measured participants' knowledge about mental disorders in terms of their recognition of symptoms displayed in vignettes. This approach allowed assessment of general knowledge of mental illness, but future research may want to use tools that allow for more detailed understanding of people's knowledge about mental illness. Further, the present research made use of statistics from the World Health Organisation (2011a, 2011b) to speculate about participants' awareness of mental health services depending on their availability. However, future research may also want to measure participants' knowledge about available services, because there is likely a difference between the availability of such services and the public's knowledge of them.

Sixth, while most MHL literature has focused on depression and schizophrenia (Angermeyer & Dietrich, 2006; Dahlberg et al., 2008; Dietrich et al., 2004; Furnham & Hamid, 2014; Jorm, 2000; Jorm et al., 1997a, 1997b, 1997c; Lauber et al., 2001; Lauber, Nordt, et al., 2003; Riedel-Heller et al., 2005; Wright et al., 2007), one novelty of the present research was that it also examined GAD. The DSM-V lists 152 mental disorders (McCarron, 2013), and – like the *dhat syndrome* found in the Indian culture, which was discussed in section 1.3. – the DSM-V (2013) lists numerous culture-specific syndromes. However, apart from the mental disorders studied in the present research, the MHL literature has examined a limited number of mental disorders (e.g., social phobia, post-traumatic stress disorder, Reavley & Jorm, 2011a; alcoholism, hyperactivity, Kohn et al., 2000; eating disorder, panic attack, Angermeyer & Dietrich, 2006). Future research should focus on a greater range of mental disorders as well as culture-specific disorders when studying MHL.

Finally, as was discussed previously (see Research Overview in Chapter 1), the literature focusing on MHL and mental illness stigma is often used interchangeably (see Abdulla & Brown, 2011). In the second part of Study 2, the relationship between MHL and mental illness stigma was explored, but the results showed limited significant associations between the constructs. I only measured one aspect of mental illness stigma, namely social distance as discrimination, therefore the implications of these findings are limited. The present results urge caution to research that use the concepts of MHL and mental illness stigma interchangeably. However, future research should empirically examine these associations and other aspects (e.g., prejudicial beliefs) further, to determine where these concepts overlap and where they indeed differ.

7.7. Final remarks

Taken together the present research underlined that in order to understand the variation in knowledge and beliefs about mental disorders cultural variables need to be examined. Studies 1 and 2 highlighted the differences in MHL between mental disorders, with depression and schizophrenia being the most publicized (National Alliance of Mental Illness, 2015; Royal college of psychiatrists, 2015;

Sartorius & Schulze, 2005; Tartakovsky, 2011; World Psychiatric Association, 2016); therefore, the public showed significantly greater awareness of them. These studies address the gap in the literature of studying mental disorders other than schizophrenia and depression, such as GAD, and demonstrated the need for studies examining a greater variety of mental disorders that ultimately may aid in bettering MHL of less well-known mental disorders.

In line with the literature (Angermeyer & Dietrich, 2006; Ayalon & Areán, 2004; Jenkins, 1988; Jorm, 2000; Jorm et al., 2005), the first two studies also found cultural differences in MHL. Study 2 showed that collectivism was significant in explaining this variation. On the one hand, in European Americans' endorsement of collectivism was associated with their causal beliefs about symptoms of mental illness. On the other hand, in Indians endorsement of collectivism was associated with their help-seeking preferences. Finally, Study 3 demonstrated the importance of examining specific cultural variables in relation to beliefs about mental disorders, since conformity to norms, familial honour, support and obligations were crucial in explaining differences in endorsement of mental illness stigma. Ultimately, the present research encourages researchers, medical professionals and policy makers alike to integrate cultural perspectives in their work to ensure the needs of any individual facing mental health issues are appropriately managed.

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9. Appendix

9.1. Measures

Study 1, 2 & 3: Socio-demographic variables

What is your age?   _____

What is your gender?   Male ☐ Female ☐ Other: _____

If English is not your first language, how well would you say do you understand and communicate in

English?

Poor	Fair	Good	Excellent	Fluent
☐	☐	☐	☐	☐

What is your highest level of education?

☐   Less than high school or equivalent

☐   High school (or equivalent) graduate

☐   Some university (post-secondary education, college, associate degree, technical degree)

☐   University graduate (College of equivalent)

☐   Masters degree or equivalent

☐   Doctorate

☐   Other: _____

What is your religion?

☐   Christian   ☐   Hindu   ☐   Rather not say

☐   Muslim   ☐   Buddhist   ☐   Other:

☐   Jewish   ☐   Non-religious   _____

Study 1: Ethnicity

Ethnicity refers to your family's cultural heritage such as Jewish, Cherokee, Navajo, Mexican, Puerto Rican, South Korean, Japanese, Kenyan, African- American, Italian, Irish, etc. Since people can have more than one race and/or ethnicity, list all that apply. If you do not have this information, please answer 'Don't Know'.

What is your ethnicity?   _____

In what country were you born?   _____

Do you live in the UK?   Yes   ☐   No   ☐

Study 2 & 3: Culture

Ethnicity refers to your family's cultural heritage such as Jewish, Cherokee, Navajo, Mexican, Puerto Rican, South Korean, Japanese, Kenyan, African, American, Italian, Irish, etc. Since people can have more than one race and/or ethnicity, list all that apply. If you do not have this information, please answer 'Don't Know'.

What is your ethnicity?   _____

In what country were you born?   _____

In what country do you currently live?   _____

Study 1, 2 & 3: Familiarity

Level-of-contact report: Holmes et al. (1999)

Please read each of the following statements carefully. After you have read all the statements below, place a check by the statements that best depict your exposure to persons with a severe mental illness.

(3) I have watched a movie or television show in which a character depicted a person with mental illness.

(8) My job involves providing services/treatment for persons with a severe mental illness.

(2) I have observed, in passing, a person I believe may have had a severe mental illness.

(5) I have observed persons with a severe mental illness on a frequent basis.

(12) I have a severe mental illness.

(6) I have worked with a person who had a severe mental illness at my place of employment.

(1) I have never observed a person that I was aware had a severe mental illness.

(7) My job includes providing services to persons with a severe mental illness.

(9) A friend of the family has a severe mental illness.

(10) I have a relative who has a severe mental illness.

(4) I have watched a documentary on the television about severe mental illness.

(11) I live with a person who has a severe mental illness.

Study 1 & 2: Vignettes

The depression and schizophrenia vignettes were modified from the original source (Jorm et al., 1997a).

The generalized anxiety disorder vignette was modified from the original source (Leitschuh, 2008).

Depression:

During the last 2 months, one of your friends has changed. Contrary to previous times, he is feeling downcast and sad without any specific reason. He looks concerned and worried. He hardly ever talks and, if he does, he speaks in a low voice about worries concerning the future. Your friend feels useless and a failure. Attempts to cheer him up are not successful. He has lost all his interests. He complains about waking up repeatedly in the middle of the night and about being unable to fall asleep afterwards. In the morning, he feels weary and without energy. He reports to be hardly able to concentrate on his work. Unlike before, every task takes him a long time to do.

Schizophrenia:

During the last six months, one of your friends has changed. He withdraws from his co-workers and friends more and more. He keeps out of everybody's way. Contrary to his former habits, he does not take care of his appearance any longer and seems to neglect himself increasingly. He seems to be anxious and agitated. He reports to be convinced that people are able to read other people's thoughts, and that they are also able to influence these thoughts; but he would not yet know who is controlling his thoughts. He even hears these people talking to him and giving him orders. Sometimes, they speak to one another and mock him. In his apartment, the situation is particularly bad. There he feels threatened and terribly scared. He has not been at home for a week and hid in a hotel, which he has not dared to leave.

Generalized Anxiety Disorder:

During the last six months, one of your friends has changed. He presents with extraordinary concern about the safety of his wife and young daughter. He rarely leaves them alone, when away (e.g. at work) he telephones home every hour. He has lost one job because of this. He describes recurrent, unbidden thoughts in which dangerous events befall his family and he is not there to save them. He knows the thoughts are "silly" and they come from his own mind rather than any real danger, but he cannot resist contacting his wife or daughter in some way to be certain they are safe. His wife has arranged to lift the telephone receiver briefly, then hang up, which is usually sufficient to calm his fears for an hour or so. He performs well, and is not particularly perfectionistic, overly conscientious (except with regard to his family's safety) or rigid.

Study 1: Recognition, causal and help-seeking beliefs

Recognition:

What would you say, if anything, is wrong with him?

Causal beliefs:

What do you think are the causes of his behaviour?

Help-seeking beliefs:

How do you think he could best be helped? Who would you suggest he talks to about his behaviour and why?

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Study 2: Recognition, causal and help-seeking beliefs

Recognition:

What do you think is going on with the person?

Causal beliefs:

To what extent do you think that the following could explain the person's behaviour?

The person has …

1 (Completely explains the behaviour) – 5 (Do not explains the behaviour)

- problems with their family
- brain damage
- hormonal imbalance
- problems at work
- loss of a loved one
- experienced a traumatic event
- been ecperiencing too much stress
- taken drugs
- relationship problems

Help-seeking beliefs:

To what extent do you think it would be helpful or harmful for your friend to …?

1 (Very helpful) – 7 (Very harmful)

- See a psychologist
- See a GP / doctor
- See a psychiatrist
- Talk to their children
- See a spiritual leader (e.g. priest, imam)
- Get some fresh air
- Take some vitamins
- Talk to their spouse
- Go for counseling and/or therapy
- Go on a holiday

- Talk to a teacher / professor / lecturer
- Go to a psychiatric clinic
- Talk to friends
- Talk to a colleague
- Read about mental illness (in a book or on the internet)
- Talk to their parents
- Take medication (e.g. antidepressants / antipsychotics)
- Call a telephone helpline

Social Distance Scale (Link et al. 1987)

How would you feel _____ .

1 (definitely willing) – 5 (definitely unwilling)

- about living next door to someone like the person described above.
- about working with someone like the person described above.
- if someone like the person described above married one of your family members.
- about leaving your children in the care of someone like the person described above.
- about introducing someone like the person described above to one of your friends.

Study 2 & 3: Collectivism

Short version of the horizontal and vertical individualism and collectivism scale: Sivadas, Bruvold, & Nelson (2008)

1 = Strongly Disagree, 5 = Strongly Agree

1. My happiness depends very much on the happiness of those around me.

2. I would do what would please my family, even if I detested that activity.

3. I usually sacrifice my self-interest for the benefit of my group.

4. I enjoy working in situations involving competition with others.

5. The well-being of my co-workers is important to me.

6. I enjoy being unique and different from others in many ways.

7. Children should feel honored if their parents receive a distinguished award.

8. I often "do my own thing."

9. Competition is the law of nature.

10. If a co-worker gets a prize, I would feel proud.

11. I am a unique individual.

12. I would sacrifice an activity that I enjoy very much if my family did not approve of it.

13. Without competition it is not possible to have a good society.

14. I feel good when I cooperate with others.

Study 3: Community Attitudes Toward the Mentally Ill (CAMI; Taylor & Dear, 1981)

1 (Strongly Disagree) – 5 (Strongly Agree)

Authoritarianism sub-scale

1. One of the main causes of mental illness is a lack of self-discipline and will power

2. The best way to handle the mentally ill is to keep them behind locked doors

3. There is something about the mentally ill that makes it easy to tell them from normal people

4. As soon as a person shows signs of mental disturbance, he should be hospitalized

5. Mental patients need the same kind of control and discipline as a young child

6. Mental illness is an illness like any other (R)

7. The mentally ill should not be treated as outcasts of society (R)

8. Less emphasis should be placed on protecting the public from the mentally ill (R)

9. Mental hospitals are an outdated means of treating the mentally ill (R)

10. Virtually anyone can become mentally ill (R)

Benevolence sub-scale

1. The mentally ill have for too long been the subject of ridicule

2. More tax money should be spent on the care and treatment of the mentally ill

3. We need to adopt a far more tolerant attitude toward the mentally ill in our society

4. Our mental hospitals seem more like prisons than like places where the mentally ill can be cared for

5. We have a responsibility to provide the best possible care for the mentally ill

6. The mentally ill don't deserve our sympathy (R)

7. The mentally ill are a burden on society (R)

8. Increased spending on mental health services is a waste of tax dollars (R)

9. There are sufficient existing services for the mentally ill (R)

10. It is best to avoid anyone who has mental problems (R)

Community mental health ideology sub-scale

1. Residents should accept the location of mental health facilities in their neighborhood to serve the needs of the local community

2. The best therapy for many mental patients is to be part of a normal community

3. As far as possible, mental health services should be provided through community based facilities

4. Locating mental health services in residential neighborhoods does not endanger local residents

5. Residents have nothing to fear from people coming into their neighborhood to obtain mental health services

6. Mental health facilities should be kept out of residential neighborhoods (R)

7. Local residents have good reason to resist the location of mental health services in their neighborhood (R)

8. Having mental patients living within residential neighborhoods might be good therapy but the risks to residents are too great (R)

9. It is frightening to think of people with mental problems living in residential neighborhoods (R)

10. Locating mental health facilities in a residential area downgrades the neighborhood (R)

Social distance sub-scale

1. The mentally ill should not be given any responsibility

2. The mentally ill should be isolated from the rest of the community

3. A woman would be foolish to marry a man who has suffered from mental illness, even though he seems fully recovered

4. I would not want to live next door to someone who has been mentally ill

5. Anyone with a history of mental problems should be excluded from taking public office

6. The mentally ill should not be denied their individual rights(R)

7. Mental patients should be encouraged to assume the responsibilities of normal life (R)

8. No one has the right to exclude the mentally ill from their neighborhood (R)

9. The mentally ill are far less of a danger than most people suppose (R)

10. Most women who were once patients in a mental hospital can be trusted as babysitters (R)

Study 3: Cultural Variables

Conformity to norms sub-scale: Kim, Atkinson & Yang (1999; items of factor loadings > .40)

1. One should not deviate from familial and social norms

2. Following familial and social expectations is important.

3. One need not follow one's family's and the society's norms. (R)

4. One need not follow one's family's and the society's expectations. (R)

Familism scale: Unger et al. (2002)

1. When someone has problems, one can count on the help of relatives.

2. I expect my relatives to help me when I need them.

3. A person should share his/her home with uncles, aunts, or first cousins if they are in need.

4. A person can count on help from his/her relatives to solve most problems.

5. The family should consult close relatives (uncles, aunts) concerning its important decisions.

6. No matter what the cost, dealing with my relatives' problems comes first.

2 items from Familial Honor sub-scale: Lugo Steidel & Contreras (2003)

1. A person should feel ashamed if something he or she does dishonors the family name.

2. A person should always be expected to defend his or her family's honor no matter what the cost.

Familial Obligation sub-scale: Sabogal et al. (1987)

1. One should make great sacrifices in order to guarantee a good education for his/her children

2. One should help economically with the support of younger brothers and sisters

3. I would help within my means if a relative told me the s'he is in financial difficulty

4. One should have the hope of living long enough to see his/her grandchildren grow up

5. Aging parents should live with their relatives

6. A person should share his/her home with uncles, aunts or first cousing if they are in need

Religiosity Scale: Saroglou (2002)

1 (Very important) – 7 (Not important)

1. How important is God in your life?

2. How important is religiosity in your life?

3. How important is spirituality in your life?

   1 (Very frequent) – 7 (Not at all):

4. How often do you pray?

How interested are you in _____?   1 (Very interested) – 7 (Not at all interested)

5. religious rituals?

6. the meaning and values of religion?

7. the aspect of community of religion?

8. the emotional and relational dimension of religion?

9. the personal experience of religion?

10. the fact of belonging to a certain tradition-identity?

9.2. Ethics Approval

1

DEPARTMENT OF PSYCHOLOGY RESEARCH ETHICS CHECKLIST
(Effective November 2009)

If the ethics submission relates to staff research for which an application to an external funding agency will be/has been made, then please complete and submit the full University ethics submission form.

Section I: Project Details

1. Project title: Mental Health literacy across cultures

Section II: Applicant Details

2. Name of applicant: Laura Altweck

3. Status (please circle): Undergrad Student/Postgrad Student/Staff

4. Discipline (please circle): Eco & Fin/His & Pol/Psy/SAnth/Soc & Com

5. Email address: ht11lha@my.brunel.ac.uk

6. Telephone number

Section III: For Students Only

7. Student number: 1044066

8. Module name and number: N/A

9. Brunel supervisor's or module leader's name: Dr. Tara Marshall

10. Brunel supervisor's email address: Tara.Marshall@brunel.ac.uk

Section IV: For Staff Only

☑ If applicable, the student states that he or she has read the Brunel University Code of Research Ethics.

☑ The topic merits further research.

☑ If applicable, the student will possess the skills to carry out the research by the time that he or she starts any work which could affect the well-being of other people. He or she will be deemed to have acquired such skills on passing the relevant research skills module.

☑ The informed consent and debriefing sheets are appropriate, and a copy is included in the ethics application.

☑ The procedures for recruitment and obtaining informed consent are appropriate.

Please confirm the professional research ethics code that will guide the research (please circle)

ASA/BPS/BSA/Other (please state) _____

☐ ☑ Is a CRB check necessary for researchers/students working on this project?
Yes No If yes, please confirm by ticking this box that appropriate CRB procedures will be followed ☐

☐ ☑ Is a *new* Risk Assessment required for this research?
Yes No If yes, please consult the information on the Psychology Ethics webpage, and attach the Risk Assessment to this submission.

_____   Oct. 17, 2012
PI/Staff/Supervisor signature   Date

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

Section V: Research Checklist

Please answer each question by ticking the appropriate box:

		YES	NO
1.	Does the study involve participants who may be particularly vulnerable and/or unable to give informed consent, thus requiring the consent of parents or guardians? (e.g. children under the age of 16; people with certain learning disabilities)	☐	☑
2.	Will all participants be age 18 and over?	☑	☐
3a.	Will the study require the co-operation of a gatekeeper for initial access to the groups or individuals to be recruited?	☐	☑
3b.	If the answer to Question 3a is Yes, then will the study involve people who could be deemed in any way to be vulnerable by virtue of their status within particular institutional settings? (e.g. students at school; disabled people; members of a self-help group; residents of a nursing home, prison, or any other institution where individuals cannot come and go freely)	☐	☐
4.	Does the research involve observational/ethnographic methods?	☐	☑
5.	Will the study involve discussion by or with respondents or behaviour or drug use, where they have not given prior consent to such discussion?	☐	☑
6.	Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?	☐	☑
7.	Will blood or tissue samples be obtained from participants?	☐	☑
8.	Is pain or more than mild discomfort likely to result from the study?	☐	☑
9.	Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?	☐	☑
10.	Will the study involve prolonged or repetitive testing?	☐	☑
11.	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	☐	☑
12.	Will the study involve recruitment of patients or staff through the NHS?	☐	☑
13a.	Have you undertaken this study as part of your work placement?	☐	☑
13b.	If your answer to Question 12a is Yes, then have the employers at your work placement conducted their own research ethics review?	☐	☐
14.	Does the research involve MRI, MEG, or EEG methods?	☐	☑

265

3

Give a brief description of participants and procedure (methods, tests used etc) in up to 150 words

Participants:
Mainstream British and immigrants or foreigners living in the UK

Methodology:
Participants will be asked to complete a survey either electronically or in pen and paper form. The survey includes vignettes describing people with depression, schizophrenia and generalised anxiety disorder, and questions relating to the knowledge and attitudes toward these vignettes, a mental health knowledge questionnaire, an acculturation measure and a measure of individualism and collectivism (Sivades et al, 2008).

Name of Applicant at Brunel University (please print): _____Laura Altweck_____

Signature of Applicant at Brunel University: _____

Date: _____12/6/12 ._____

This request for expedited review has been: ☑ **Approved** (no additional ethics form is necessary)

☐ **Declined** (full University ethics form is necessary)

Signature of PsyREC Officer: _____

Date: _____23-10-12_____

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

F|2|8|3

ALTWECK, Laura
2012/13
PGR   1

DEPARTMENT OF PSYCHOLOGY RESEARCH ETHICS CHECKLIST
(Effective November 2009)

If the ethics submission relates to staff research for which an application to an external funding agency will be/has been made, then please complete and submit the full University ethics submission form.

Section I: Project Details

1. Project title: Mental Health literacy across cultures – Study 2

Section II: Applicant Details

2. Name of applicant: Laura Altweck

3. Status (please circle): Undergrad Student/ Postgrad Student /Staff

4. Discipline (please circle): Eco & Fin/His & Pol/ Psy /SAnth/Soc & Com

5. Email address: Laura.Altweck@my.brunel.ac.uk

6. Telephone number 07808 656 233

Section III: For Students Only

7.   Student number: 1044066

8.   Module name and number: N/A

9.   Brunel supervisor's or module leader's name: Dr. Tara Marshall

10. Brunel supervisor's email address: Tara.Marshall@brunel.ac.uk

Section IV: For Staff Only

✗	If applicable, the student states that he or she has read the Brunel University Code of Research Ethics.
✗	The topic merits further research.
✗	If applicable, the student will possess the skills to carry out the research by the time that he or she starts any work which could affect the well-being of other people. He or she will be deemed to have acquired such skills on passing the relevant research skills module.
✗	The informed consent and debriefing sheets are appropriate, and a copy is included in the ethics application.
✗	The procedures for recruitment and obtaining informed consent are appropriate.

Please confirm the professional research ethics code that will guide the research (please circle)
ASA/BPS/BSA/Other (please state) _____

☐   ✗   Is a CRB check necessary for researchers/students working on this project?
Yes   No   If yes, please confirm by ticking this box that appropriate CRB procedures will be followed ☐

☐   ✗   Is a *new* Risk Assessment required for this research?
Yes   No   If yes, please consult the information on the Psychology Ethics webpage, and attach the Risk Assessment to this submission.

Tara Marshall

_____   24/03/2013_____
PI/Staff/Supervisor signature   Date

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

2

Section V: Research Checklist

Please answer each question by ticking the appropriate box:

	YES	NO
1. Does the study involve participants who may be particularly vulnerable and/or unable to give informed consent, thus requiring the consent of parents or guardians? (e.g. children under the age of 16; people with certain learning disabilities)	☐	☐
2. Will all participants be age 18 and over?	☐	☐
3a. Will the study require the co-operation of a gatekeeper for initial access to the groups or individuals to be recruited?	☐	☐
3b. If the answer to Question 2a is Yes, then will the study involve people who could be deemed in any way to be vulnerable by virtue of their status within particular institutional settings? (e.g. students at school; disabled people; members of a self-help group; residents of a nursing home, prison, or any other institution where individuals cannot come and go freely)	☐	☐
4. Does the research involve observational/ethnographic methods?	☐	☐
5. Will the study involve discussion by or with respondents or behaviour or drug use, where they have not given prior consent to such discussion?	☐	☐
6. Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?	☐	☐
7. Will blood or tissue samples be obtained from participants?	☐	☐
8. Is pain or more than mild discomfort likely to result from the study?	☐	☐
9. Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?	☐	☐
10. Will the study involve prolonged or repetitive testing?	☐	☐
11. Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	☐	☐
12. Will the study involve recruitment of patients or staff through the NHS?	☐	☐
13a. Have you undertaken this study as part of your work placement?	☐	☐
13b. If your answer to Question 12a is Yes, then have the employers at your work placement conducted their own research ethics review?	☐	☐
14. Does the research involve MRI, MEG, or EEG methods?	☐	☐

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

3

Give a brief description of participants and procedure (methods, tests used etc) in up to 150 words
Participants: Mainstream British and immigrants or foreigners living in the UK Methodology: Participants will be asked to complete a survey either electronically or in pen and paper form. The survey includes vignettes describing person with depression, schizophrenia and generalised anxiety disorder respectively and questions relating to the knowledge and attitudes toward these vignettes, a knowledge questionnaire, a demographic questionnaire, a scale measuring the level of prior contact with mental disorders (Holmes, et al., 1999), an acculturation measure (Ryder at al., 2000) and a measure to determine cultural variables (Sivades et al, 2008).

Name of Applicant at Brunel University (please print): _____ Laura Altweck _____

Signature of Applicant at Brunel University: _L Altwl._____

Date: _30-03-13_____

This request for expedited review has been: ☑ **Approved** (no additional ethics form is necessary)

☐ **Declined** (full University ethics form is necessary)

Signature of PsyREC Officer: ___Achin Shirbroll_____

Date: ____25-04-13_____

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

DEPARTMENT OF PSYCHOLOGY RESEARCH ETHICS CHECKLIST
(Effective November 2009)

If the ethics submission relates to staff research for which an application to an external funding agency will be/has been made, then please complete and submit the full University ethics submission form.

Section I: Project Details

1. Project title: Determinants of mental illness stigma: A cross-cultural study

Section II: Applicant Details

2. Name of applicant: Laura Altweck

3. Status (please circle): Undergrad Student/Postgrad Student/Staff

4. Discipline (please circle): Eco & Fin/His & Pol/Psy/SAnth/Soc & Com

5. Email address: Laura.Altweck@my.brunel.ac.uk

6. Telephone number

Section III: For Students Only

7. Student number: 1044066

8. Module name and number: N/A

9. Brunel supervisor's or module leader's name: Dr. Tara Marshall

10. Brunel supervisor's email address: Tara.Marshall@brunel.ac.uk

Section IV: For Staff Only

☑ ☐ If applicable, the student states that he or she has read the Brunel University Code of Research Ethics.

☑ ☐ The topic merits further research.

☑ ☐ If applicable, the student will possess the skills to carry out the research by the time that he or she starts any work which could affect the well-being of other people. He or she will be deemed to have acquired such skills on passing the relevant research skills module.

☑ ☐ The informed consent and debriefing sheets are appropriate, and a copy is included in the ethics application.

☑ ☐ The procedures for recruitment and obtaining informed consent are appropriate.

Please confirm the professional research ethics code that will guide the research (please circle)
        ASA/BPS/BSA/Other (please state) _____

☐   ☑ Is a CRB check necessary for researchers/students working on this project?
Yes   No   If yes, please confirm by ticking this box that appropriate CRB procedures will be followed ☐

☐   ☑ Is a *new* Risk Assessment required for this research?
Yes   No   If yes, please consult the information on the Psychology Ethics webpage, and attach the Risk Assessment to this submission.

Ta Marll   _22/07/13_
PI/Staff/Supervisor signature   Date

Section V: Research Checklist

Please answer each question by ticking the appropriate box:

	YES	NO
1. Does the study involve participants who may be particularly vulnerable and/or unable to give informed consent, thus requiring the consent of parents or guardians? (e.g. children under the age of 16; people with certain learning disabilities)	☐	☐
2. Will all participants be age 18 and over?	☐	☐
3a. Will the study require the co-operation of a gatekeeper for initial access to the groups or individuals to be recruited?	☐	☐
3b. If the answer to Question 3a is Yes, then will the study involve people who could be deemed in any way to be vulnerable by virtue of their status within particular institutional settings? (e.g. students at school; disabled people; members of a self-help group; residents of a nursing home, prison, or any other institution where individuals cannot come and go freely)	☐	☐
4. Does the research involve observational/ethnographic methods?	☐	☐
5. Will the study involve discussion by or with respondents or behaviour or drug use, where they have not given prior consent to such discussion?	☐	☐
6. Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?	☐	☐
7. Will blood or tissue samples be obtained from participants?	☐	☐
8. Is pain or more than mild discomfort likely to result from the study?	☐	☐
9. Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?	☐	☐
10. Will the study involve prolonged or repetitive testing?	☐	☐
11. Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	☐	☐
12. Will the study involve recruitment of patients or staff through the NHS?	☐	☐
13a. Have you undertaken this study as part of your work placement?	☐	☐
13b. If your answer to Question 12a is Yes, then have the employers at your work placement conducted their own research ethics review?	☐	☐
14. Does the research involve MRI, MEG, or EEG methods?	☐	☐

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

3

Give a brief description of participants and procedure (methods, tests used etc) in up to 150 words

Participants:

European Americans and mainstream Indians respectively

Methodology:

Participants will be recruited via the online system of MTurk, where they will be asked to complete a survey electronically. The survey includes a demographic questionnaire, measure of mental illness stigma (Taylor & Dear, 1981), questions relating to the knowledge, a scale measuring the level of prior contact with mental disorders (Holmes, et al., 1999), and several scales measuring different cultural values:
- Conformity to norms sub-scale (Kim, Atkinson & Yang, 1999; items of factor loadings > .40)
- Familism scale (Unger et al. 2002)
- 2 items from Familial Honor sub-scale (Lugo Steidel & Contreras, 2003)
- Familial Obligations sub-scale (Sabogal et al., 1987)
- Short version of the horizontal and vertical individualism and collectivism scale (Sivadas, Bruvold, & Nelson, 2008)
- Religiosity Scale – Saraglou (2002)

Name of Applicant at Brunel University (please print): _____Laura Altweck_____

Signature of Applicant at Brunel University: *[signature]*

Date: 22.07.13.

This request for expedited review has been: ☑ **Approved** (no additional ethics form is necessary)

☐ **Declined** (full University ethics form is necessary)

Signature of PsyREC Officer: *[signature]*

Date: 23-07-2013

9.3. Parcelling - Factor Analyses Results

Study 2

Collectivism

	Factor loadings
HC2	.77
HC1	.76
HC4	.73
HC3	.71
VC1	.69
VC4	.67
VC2	.66
VC3	.59

Study 3

Benevolence

	Factor loadings
Item 10	.79
Item 7	.76
Item 5	-.69
Item 9	.62
Item 4	-.41

CMHI

	Factor loadings
Item 7	.87
Item 6	.85
Item 9	.83
Item 10	.82

Social Distance

	Factor loadings
Item 2	.81
Item 3	.79
Item 4	.78
Item 5	.75
Item 1	.74
Item 7	-.46

Conformity to Norms

	Factor loadings
Item 4	.80
Item 3	.78
Item 1	.73
Item 2	.73

Familial Support

	Factor loadings
Item 4	.81
Item 2	.73
Item 3	.73
Item 5	.69
Item 1	.66
Item 6	.65

Familial Obligations

	Factor loadings
Item 3	.80
Item 6	.73
Item 1	.69
Item 2	.67
Item 4	.65
Item 5	.65

Religiosity

	Factor loadings
Item 2	.90
Item 3	.87
Item 4	.86
Item 1	.86
Item 5	.83

Spirituality

	Factor loadings
Item 4	.95
Item 2	.94
Item 5	.92
Item 3	.92
Item 1	.80

Collectivism

	Factor loadings
VC2	.804
VC1	.753
HC1	.714
VC4	.695
HC3	.695
HC2	.646
VC3	.625
HC4	.610

9.4. Factor Loadings from the Confirmatory Factor Analyses

Chapter 3: Measure Validation

Depression

			Model 1				Model 2			
			EA		I		EA		I	
			p	β	p	β	p	β	p	β
D.HH..20	<---	Prof.HS	<.001	0.55	0.00	0.33	<.001	0.54	0.00	0.33
D.HH..19	<---	Prof.HS	<.001	0.67	<.001	0.72	<.001	0.66	<.001	0.73
D.HH..14	<---	Prof.HS	<.001	0.71	<.001	0.81	<.001	0.69	<.001	0.81
D.HH..11	<---	Prof.HS	<.001	0.67	<.001	0.83	-	-	-	-
D.HH..4	<---	Prof.HS	<.001	0.88	<.001	0.82	<.001	0.90	<.001	0.82
D.HH..3	<---	Prof.HS	<.001	0.75	<.001	0.66	<.001	0.75	<.001	0.68
D.HH..2	<---	Prof.HS	<.001	0.84	<.001	0.82	<.001	0.84	<.001	0.80

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

Depression (Continued)

			Model 3				Model – final			
			EA		I		EA		I	
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*
D.HH..20	<---	Prof.HS	<.001	0.53	<.001	0.36	<.001	0.52	0.00	0.33
D.HH..19	<---	Prof.HS	<.001	0.71	<.001	0.76	<.001	0.85	<.001	0.70
D.HH..14	<---	Prof.HS	<.001	0.74	<.001	0.82	<.001	0.72	<.001	0.86
D.HH..11	<---	Prof.HS	-	-	-	-	-	-	-	-
D.HH..4	<---	Prof.HS	<.001	0.84	<.001	0.80	-	-	-	-
D.HH..3	<---	Prof.HS	<.001	0.75	<.001	0.65	-	-	-	-
D.HH..2	<---	Prof.HS	-	-	-	-	-	-	-	-

Schizophrenia

			Model 1				Model 2			
			EA		I		EA		I	
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*
S.HH..20	<---	Prof.HS	0.02	0.24	<.001	0.37	0.03	0.22	<.001	0.38
S.HH..19	<---	Prof.HS	<.001	0.66	<.001	0.68	<.001	0.67	<.001	0.71
S.HH..14	<---	Prof.HS	<.001	0.90	<.001	0.71	<.001	0.95	<.001	0.70
S.HH..11	<---	Prof.HS	<.001	0.58	<.001	0.79	<.001	0.56	<.001	0.81
S.HH..4	<---	Prof.HS	<.001	0.80	<.001	0.87	<.001	0.76	<.001	0.85
S.HH..3	<---	Prof.HS	<.001	0.61	<.001	0.78	<.001	0.58	<.001	0.77
S.HH..2	<---	Prof.HS	<.001	0.60	<.001	0.81	-	-	-	-

Schizophrenia (Continued)

			Model – final			
			EA		I	
			p	*β*	*p*	*β*
S.HH..20	<---	Prof.HS	0.02	0.25	0.02	0.28
S.HH..19	<---	Prof.HS	<.001	0.78	<.001	0.95
S.HH..14	<---	Prof.HS	<.001	0.82	<.001	0.59
S.HH..11	<---	Prof.HS	-	-	-	-
S.HH..4	<---	Prof.HS	-	-	-	-
S.HH..3	<---	Prof.HS	-	-	-	-
S.HH..2	<---	Prof.HS	-	-	-	-

GAD

			Model 1				Model 2			
			EA		I		EA		I	
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*
A.S1.20	<---	Prof.HS	<.001	0.35	0.02	0.24	<.001	0.37	0.01	0.27
A.S1.19	<---	Prof.HS	<.001	0.58	<.001	0.66	<.001	0.60	<.001	0.64
A.S1.14	<---	Prof.HS	<.001	0.64	<.001	0.71	<.001	0.64	<.001	0.69
A.S1.11	<---	Prof.HS	<.001	0.67	<.001	0.74	-	-	-	-
A.S1.4	<---	Prof.HS	<.001	0.87	<.001	0.80	<.001	0.86	<.001	0.83
A.S1.3	<---	Prof.HS	<.001	0.59	<.001	0.55	<.001	0.60	<.001	0.57
A.S1.2	<---	Prof.HS	<.001	0.84	<.001	0.77	<.001	0.83	<.001	0.75

GAD (Continued)

			Model 3				Model 4			
			EA		I		EA		I	
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*
A.S1.20	<---	Prof.HS	<.001	0.52	0.01	0.27	<.001	0.53	0.01	0.29
A.S1.19	<---	Prof.HS	<.001	0.73	<.001	0.72	<.001	0.76	<.001	0.77
A.S1.14	<---	Prof.HS	<.001	0.69	<.001	0.71	<.001	0.68	<.001	0.75
A.S1.11	<---	Prof.HS	-	-	-	-	-	-	-	-
A.S1.4	<---	Prof.HS	-	-	-	-	-	-	-	-
A.S1.3	<---	Prof.HS	<.001	0.63	<.001	0.51	-	-	-	-
A.S1.2	<---	Prof.HS	<.001	0.66	<.001	0.70	<.001	0.63	<.001	0.61

GAD (Continued)

			Model - final			
			EA		I	
			p	β	p	β
A.S1.20	<---	Prof.HS	<.001	0.60	0.00	0.34
A.S1.19	<---	Prof.HS	<.001	0.75	<.001	0.96
A.S1.14	<---	Prof.HS	<.001	0.64	<.001	0.58
A.S1.11	<---	Prof.HS	-	-	-	-
A.S1.4	<---	Prof.HS	-	-	-	-
A.S1.3	<---	Prof.HS	-	-	-	-
A.S1.2	<---	Prof.HS	-	-	-	-

Chapter 3 – MHL Model

| | | | Model 1 | | | | Model 2 | | | | Model 3 | | | |
| | | | EA | | I | | EA | | I | | EA | | I | |
			p	β	p	β	p	β	p	β	p	β	p	β
Recogn_latent	<---	Col_latent	0.03	0.75	0.15	0.23	0.03	0.70	0.15	0.23	0.05	0.64	0.15	0.22
socCB_latent	<---	Col_latent	-0.37	0.01	-0.21	0.13	-0.38	0.01	-0.21	0.13	-0.42	0.01	-0.21	0.13
socCB_latent	<---	Recogn_latent	-0.33	0.02	-0.35	0.02	-0.34	0.02	-0.35	0.02	-0.34	0.03	-0.35	0.03
LayHS_latent	<---	socCB_latent	0.75	0.07	0.95	<.001	0.77	0.07	0.96	<.001	0.77	0.09	0.96	<.001
LayHS_latent	<---	Col_latent	-0.15	0.40	-0.24	0.05	-0.14	0.44	-0.24	0.05	-0.13	0.54	-0.25	0.03
LayHS_latent	<---	Recogn_latent	0.17	0.28	0.30	0.05	0.18	0.30	0.30	0.04	0.18	0.34	0.30	0.04
ProfHS_latent	<---	socCB_latent	0.08	0.83	0.39	0.71	-	-	-	-	-	-	-	-
ProfHS_latent	<---	Col_latent	0.16	0.16	-0.11	0.64	0.15	0.18	-0.02	0.79	-	-	-	-
ProfHS_latent	<---	Recogn_latent	-0.16	0.26	-0.13	0.70	-0.21	0.04	-0.26	0.00	-0.26	0.02	-0.26	0.00
ProfHS_latent	<---	LayHS_latent	0.23	0.47	0.53	0.61	0.27	0.04	0.91	<.001	0.16	0.14	0.92	<.001

Chapter 4: MHL model & MI Stigma

			Model 1				Model 2			
			EA		I		EA		I	
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*
SDS_latent	<---	Recogn_latent	0.06	0.88	1.20	0.17	0.06	0.88	1.23	0.16
SDS_latent	<---	Col_latent	0.00	0.98	0.04	0.86	-	-	-	-
socCB_latent	<---	SDS_latent	-0.09	0.28	0.11	0.03	-0.09	0.28	0.11	0.03
socCB_latent	<---	Recogn_latent	-0.71	0.10	-1.08	0.02	-0.71	0.10	-1.08	0.02
socCB_latent	<---	Col_latent	-0.13	0.05	-0.16	0.09	-0.13	0.05	-0.16	0.09
LayHSB_latent	<---	SDS_latent	0.76	0.15	0.25	0.22	0.76	0.15	0.25	0.22
LayHSB_latent	<---	Recogn_latent	2.38	0.38	3.20	0.13	2.38	0.38	3.19	0.13
LayHSB_latent	<---	socCB_latent	5.04	0.07	4.48	<.001	5.04	0.07	4.48	<.001
LayHSB_latent	<---	Col_latent	-0.55	0.22	-0.83	0.03	-0.55	0.22	-0.83	0.03
ProfHSB_latent	<---	SDS_latent	-0.33	0.10	-0.11	0.10	-0.33	0.10	-0.11	0.10
ProfHSB_latent	<---	LayHSB_latent	0.04	0.33	0.44	<.001	0.04	0.33	0.44	<.001
ProfHSB_latent	<---	Recogn_latent	-1.60	0.09	-1.37	0.02	-1.60	0.09	-1.36	0.02

Chapter 4: MHL model & MI Stigma (Continued)

			Model 3				Model 4			
			EA		I		EA		I	
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*
SDS_latent	<---	Recogn_latent	-0.23	0.74	1.33	0.13	0.21	0.83	1.54	0.09
SDS_latent	<---	Col_latent	-	-	-	-	-	-	-	-
socCB_latent	<---	SDS_latent	0.00	0.99	0.13	0.01	0.01	0.87	0.13	0.01
socCB_latent	<---	Recogn_latent	-0.76	0.11	-1.19	0.01	-0.83	0.11	-1.23	0.01
socCB_latent	<---	Col_latent	-0.18	0.02	-0.16	0.08	-0.18	0.02	-0.16	0.08
LayHSB_latent	<---	SDS_latent	-	-	-	-	-	-	-	-
LayHSB_latent	<---	Recogn_latent	2.57	0.38	4.96	0.03	2.42	0.45	4.76	0.03
LayHSB_latent	<---	socCB_latent	4.94	0.09	5.63	<.001	4.77	0.09	5.25	<.001
LayHSB_latent	<---	Col_latent	-0.27	0.63	-0.65	0.13	-0.25	0.65	-0.77	0.06
ProfHSB_latent	<---	SDS_latent	0.00	0.99	-0.10	0.13	-	-	-	-
ProfHSB_latent	<---	LayHSB_latent	0.06	0.24	0.44	<.001	0.06	0.26	0.40	<.001
ProfHSB_latent	<---	Recogn_latent	-1.69	0.09	-1.42	0.02	-2.57	0.03	-1.71	0.00

Chapter 5 – MI stigma measure validation

Authoritarianism

| | | | Model 1 | | | | Model 2 | | | |
| | | | EA | | I | | EA | | I | |
			β	p	β	p	β	p	β	p
Stig.A1	<---	Authoritarian	0.50	<.001	0.41	<.001	0.48	<.001	0.48	<.001
Stig.A2	<---	Authoritarian	0.70	<.001	0.46	<.001	0.62	<.001	0.51	<.001
Stig.A3	<---	Authoritarian	0.55	<.001	0.44	<.001	0.61	<.001	0.41	<.001
Stig.A4	<---	Authoritarian	0.64	<.001	0.35	<.001	0.70	<.001	0.42	<.001
Stig.A5	<---	Authoritarian	0.63	<.001	0.33	0.00	0.68	<.001	0.32	0.00
Stig.A6.r	<---	Authoritarian	0.36	<.001	-0.04	0.73	0.32	0.00	0.01	0.92
Stig.A7.r	<---	Authoritarian	0.56	<.001	-0.47	<.001	-	-	-	-
Stig.A8.r	<---	Authoritarian	0.39	<.001	-0.66	<.001	0.35	<.001	-0.59	<.001
Stig.A9.r	<---	Authoritarian	0.39	<.001	-0.31	0.00	0.39	<.001	-0.28	0.01
Stig.A10.r	<---	Authoritarian	0.48	<.001	-0.23	0.03	0.42	<.001	-0.17	0.10

Authoritarianism (Continued)

			Model 3				Model 4			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.A1	<---	Authoritarian	0.50	<.001	0.52	<.001	0.48	<.001	0.54	<.001
Stig.A2	<---	Authoritarian	0.60	<.001	0.28	0.01	0.57	<.001	0.29	0.01
Stig.A3	<---	Authoritarian	0.61	<.001	0.36	<.001	0.61	<.001	0.34	0.00
Stig.A4	<---	Authoritarian	0.72	<.001	0.70	<.001	0.74	<.001	0.71	<.001
Stig.A5	<---	Authoritarian	0.69	<.001	0.39	<.001	0.72	<.001	0.38	<.001
Stig.A6.r	<---	Authoritarian	0.29	0.01	-0.05	0.67	0.25	0.02	-0.03	0.78
Stig.A7.r	<---	Authoritarian	-	-	-	-	-	-	-	-
Stig.A8.r	<---	Authoritarian	-	-	-	-	-	-	-	-
Stig.A9.r	<---	Authoritarian	0.37	<.001	-0.08	0.47	0.38	<.001	-0.07	0.54
Stig.A10.r	<---	Authoritarian	0.42	<.001	-0.14	0.19	-	-	-	-

Authoritarianism (Continued)

			Model 5				Model 6			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.A1	<---	Authoritarian	0.47	<.001	0.52	<.001	0.55	<.001	0.53	<.001
Stig.A2	<---	Authoritarian	0.55	<.001	0.26	0.01	0.64	<.001	0.25	0.02
Stig.A3	<---	Authoritarian	0.60	<.001	0.33	0.00	0.52	<.001	0.32	0.00
Stig.A4	<---	Authoritarian	0.77	<.001	0.74	<.001	0.69	<.001	0.75	<.001
Stig.A5	<---	Authoritarian	0.72	<.001	0.37	<.001	-	-	-	-
Stig.A6.r	<---	Authoritarian	0.23	0.03	-0.04	0.74	0.30	0.01	0.00	0.97
Stig.A7.r	<---	Authoritarian	-	-	-	-	-	-	-	-
Stig.A8.r	<---	Authoritarian	-	-	-	-	-	-	-	-
Stig.A9.r	<---	Authoritarian	-	-	-	-	-	-	-	-
Stig.A10.r	<---	Authoritarian	-	-	-	-	-	-	-	-

Benevolence

			Model 1				Model 2			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.B10.r	<---	Benevolence	0.70	<.001	0.60	<.001	0.70	<.001	0.60	<.001
Stig.B9.r	<---	Benevolence	0.41	<.001	0.45	<.001	0.40	<.001	0.45	<.001
Stig.B8.r	<---	Benevolence	0.54	<.001	0.71	<.001	0.57	<.001	0.71	<.001
Stig.B7.r	<---	Benevolence	0.60	<.001	0.77	<.001	0.63	<.001	0.77	<.001
Stig.B6.r	<---	Benevolence	0.53	<.001	0.52	<.001	0.54	<.001	0.52	<.001
Stig.B5	<---	Benevolence	0.71	<.001	0.42	<.001	0.70	<.001	0.41	<.001
Stig.B4	<---	Benevolence	0.46	<.001	0.22	0.02	0.46	<.001	0.22	0.02
Stig.B3	<---	Benevolence	0.87	<.001	0.40	<.001	0.85	<.001	0.39	<.001
Stig.B2	<---	Benevolence	0.57	<.001	0.13	0.19	0.58	<.001	0.12	0.20
Stig.B1	<---	Benevolence	0.66	<.001	0.03	0.74	-	-	-	-

Benevolence (Continued)

			Model 3				Model 4			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.B10.r	<---	Benevolence	0.67	<.001	0.61	<.001	0.75	<.001	0.61	<.001
Stig.B9.r	<---	Benevolence	0.43	<.001	0.46	<.001	0.38	<.001	0.46	<.001
Stig.B8.r	<---	Benevolence	0.65	<.001	0.73	<.001	0.54	<.001	0.73	<.001
Stig.B7.r	<---	Benevolence	0.65	<.001	0.78	<.001	0.68	<.001	0.78	<.001
Stig.B6.r	<---	Benevolence	0.58	<.001	0.52	<.001	0.58	<.001	0.52	<.001
Stig.B5	<---	Benevolence	0.64	<.001	0.36	<.001	0.64	<.001	0.36	<.001
Stig.B4	<---	Benevolence	0.40	<.001	0.16	0.10	0.41	<.001	0.15	0.12
Stig.B3	<---	Benevolence	-	-	-	-	-	-	-	-
Stig.B2	<---	Benevolence	0.59	<.001	0.07	-	-	-	-	-
Stig.B1	<---	Benevolence	-	-	-	-	-	-	-	-

Benevolence (Continued)

			Model 5				Model 6			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.B10.r	<---	Benevolence	0.79	<.001	0.64	<.001	0.82	<.001	0.65	<.001
Stig.B9.r	<---	Benevolence	0.34	<.001	0.42	<.001	0.34	0.00	0.41	<.001
Stig.B8.r	<---	Benevolence	-	-	-	-	-	-	-	-
Stig.B7.r	<---	Benevolence	0.67	<.001	0.73	<.001	0.66	<.001	0.68	<.001
Stig.B6.r	<---	Benevolence	0.55	<.001	0.60	<.001	-	-	-	-
Stig.B5	<---	Benevolence	0.66	<.001	0.35	<.001	0.64	<.001	0.43	<.001
Stig.B4	<---	Benevolence	0.40	<.001	0.17	0.09	0.40	<.001	0.17	0.11
Stig.B3	<---	Benevolence	-	-	-	-	-	-	-	-
Stig.B2	<---	Benevolence	-	-	-	-	-	-	-	-
Stig.B1	<---	Benevolence	-	-	-	-	-	-	-	-

Running Head: CROSS-CULTURAL: KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDER

CMHI

			Model 1				Model 2			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.CMHI1	<---	CMHI	-0.71	<.001	0.13	0.16	0.72	<.001	0.13	0.17
Stig.CMHI2	<---	CMHI	-0.49	<.001	0.13	0.19	0.48	<.001	0.12	0.20
Stig.CMHI3	<---	CMHI	-0.46	<.001	-0.12	0.20	0.45	<.001	-0.13	0.18
Stig.CMHI4	<---	CMHI	-0.86	<.001	0.04	0.66	-	-	-	-
Stig.CMHI5	<---	CMHI	-0.83	<.001	0.17	0.08	0.80	<.001	0.16	0.08
Stig.CMHI6.r	<---	CMHI	-0.82	<.001	0.75	<.001	0.83	<.001	0.75	<.001
Stig.CMHI7.r	<---	CMHI	-0.85	<.001	0.75	<.001	0.85	<.001	0.74	<.001
Stig.CMHI8.r	<---	CMHI	-0.84	<.001	0.45	<.001	0.85	<.001	0.45	<.001
Stig.CMHI9.r	<---	CMHI	-0.78	<.001	0.67	<.001	0.80	<.001	0.67	<.001
Stig.CMHI10.r	<---	CMHI	-0.74	<.001	0.68	<.001	0.75	<.001	0.69	<.001

CMHI (Continued)

			Model 3				Model 4			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.CMHI1	<---	CMHI	0.71	<.001	0.11	0.23	-	-	-	-
Stig.CMHI2	<---	CMHI	0.44	<.001	0.10	0.27	0.43	<.001	0.09	0.34
Stig.CMHI3	<---	CMHI	0.44	<.001	-0.14	0.14	0.41	<.001	-0.15	0.12
Stig.CMHI4	<---	CMHI	-	-	-	-	-	-	-	-
Stig.CMHI5	<---	CMHI	-	-	-	-	-	-	-	-
Stig.CMHI6.r	<---	CMHI	0.82	<.001	0.75	<.001	0.81	<.001	0.75	<.001
Stig.CMHI7.r	<---	CMHI	0.86	<.001	0.75	<.001	0.87	<.001	0.75	<.001
Stig.CMHI8.r	<---	CMHI	0.86	<.001	0.46	<.001	0.88	<.001	0.47	<.001
Stig.CMHI9.r	<---	CMHI	0.80	<.001	0.67	<.001	0.79	<.001	0.67	<.001
Stig.CMHI10.r	<---	CMHI	0.75	<.001	0.69	<.001	0.75	<.001	0.69	<.001

CMHI (Continued)

| | | | Model 5 | | | | Model 6 | | | |
| | | | EA | | I | | EA | | I | |
			β	p	β	p	β	p	β	p
Stig.CMHI1	<---	CMHI	-	-	-	-	-	-	-	-
Stig.CMHI2	<---	CMHI	0.45	<.001	0.11	0.23	0.43	<.001	0.13	0.17
Stig.CMHI3	<---	CMHI	0.41	<.001	-0.16	0.09	-	-	-	-
Stig.CMHI4	<---	CMHI	-	-	-	-	-	-	-	-
Stig.CMHI5	<---	CMHI	-	-	-	-	-	-	-	-
Stig.CMHI6.r	<---	CMHI	0.80	<.001	0.76	<.001	0.80	<.001	0.77	<.001
Stig.CMHI7.r	<---	CMHI	0.85	<.001	0.76	<.001	0.85	<.001	0.76	<.001
Stig.CMHI8.r	<---	CMHI	-	-	-	-	-	-	-	-
Stig.CMHI9.r	<---	CMHI	0.80	<.001	0.65	<.001	0.80	<.001	0.64	<.001
Stig.CMHI10.r	<---	CMHI	0.77	<.001	0.67	<.001	0.78	<.001	0.67	<.001

CMHI (Continued)

			Model 7			
			EA		I	
			β	p	β	p
Stig.CMHI1	<---	CMHI	-	-	-	-
Stig.CMHI2	<---	CMHI	-	-	-	-
Stig.CMHI3	<---	CMHI	-	-	-	-
Stig.CMHI4	<---	CMHI	-	-	-	-
Stig.CMHI5	<---	CMHI	-	-	-	-
Stig.CMHI6.r	<---	CMHI	0.79	<.001	0.76	<.001
Stig.CMHI7.r	<---	CMHI	0.87	<.001	0.76	<.001
Stig.CMHI8.r	<---	CMHI	-	-	-	-
Stig.CMHI9.r	<---	CMHI	0.79	<.001	0.65	<.001
Stig.CMHI10.r	<---	CMHI	0.77	<.001	0.68	<.001

Social Distance

			Model 1				Model 2			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.S10.r	<---	Soc.Rest	0.61	<.001	-0.34	<.001	-	-	-	-
Stig.S9.r	<---	Soc.Rest	0.81	<.001	0.00	0.99	0.81	<.001	0.04	0.71
Stig.S8.r	<---	Soc.Rest	0.74	<.001	0.09	0.35	0.75	<.001	0.13	0.20
Stig.S7.r	<---	Soc.Rest	0.55	<.001	0.21	0.03	0.55	<.001	0.25	0.01
Stig.S6.r	<---	Soc.Rest	0.59	<.001	0.03	0.73	0.59	<.001	0.04	0.66
Stig.S5	<---	Soc.Rest	0.66	<.001	0.61	<.001	0.64	<.001	0.63	<.001
Stig.S4	<---	Soc.Rest	0.78	<.001	0.63	<.001	0.78	<.001	0.63	<.001
Stig.S3	<---	Soc.Rest	0.70	<.001	0.66	<.001	0.70	<.001	0.65	<.001
Stig.S2	<---	Soc.Rest	0.77	<.001	0.67	<.001	0.78	<.001	0.67	<.001
Stig.S1	<---	Soc.Rest	0.63	<.001	0.53	<.001	0.63	<.001	0.51	<.001

Social Distance (Continued)

			Model 3				Model 4			
			EA		I		EA		I	
			β	p	β	p	β	p	β	p
Stig.S10.r	<---	Soc.Rest	-	-	-	-	-	-	-	-
Stig.S9.r	<---	Soc.Rest	-	-	-	-	-	-	-	-
Stig.S8.r	<---	Soc.Rest	0.12	0.22	-	-	-	-	0.12	0.22
Stig.S7.r	<---	Soc.Rest	0.25	0.01	0.53	<.001	0.23	0.02	0.25	0.01
Stig.S6.r	<---	Soc.Rest	0.04	0.68	0.55	<.001	0.03	0.78	0.04	0.68
Stig.S5	<---	Soc.Rest	0.62	<.001	0.71	<.001	0.62	<.001	0.62	<.001
Stig.S4	<---	Soc.Rest	0.63	<.001	0.79	<.001	0.62	<.001	0.63	<.001
Stig.S3	<---	Soc.Rest	0.65	<.001	0.70	<.001	0.65	<.001	0.65	<.001
Stig.S2	<---	Soc.Rest	0.67	<.001	0.76	<.001	0.68	<.001	0.67	<.001
Stig.S1	<---	Soc.Rest	0.52	<.001	0.68	<.001	0.54	<.001	0.52	<.001

Social Distance (Continued)

			Model 5			
			EA		I	
			β	p	β	p
Stig.S10.r	<---	Soc.Rest	-	-	-	-
Stig.S9.r	<---	Soc.Rest	-	-	-	-
Stig.S8.r	<---	Soc.Rest	-	-	-	-
Stig.S7.r	<---	Soc.Rest	0.50	<.001	0.23	0.02
Stig.S6.r	<---	Soc.Rest	-	-	-	-
Stig.S5	<---	Soc.Rest	0.71	<.001	0.62	<.001
Stig.S4	<---	Soc.Rest	0.79	<.001	0.62	<.001
Stig.S3	<---	Soc.Rest	0.72	<.001	0.65	<.001
Stig.S2	<---	Soc.Rest	0.76	<.001	0.68	<.001
Stig.S1	<---	Soc.Rest	0.67	<.001	0.54	<.001

Chapter 6 – MI stigma & culture

| | | | Model 1 | | | | Model 2 | | | | Model 3 | | | |
| | | | EA | | I | | EA | | I | | EA | | I | |
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*
FO	<---	C	1.26	<.001	1.18	<.001	1.26	<.001	1.19	<.001	1.26	<.001	1.18	<.001
FH	<---	C	0.67	0.00	0.32	<.001	0.67	0.00	0.32	<.001	0.67	0.00	0.32	<.001
CN	<---	C	1.16	0.00	0.28	<.001	1.16	0.00	0.28	<.001	1.16	0.00	0.28	<.001
FS	<---	C	2.67	<.001	0.85	<.001	2.67	<.001	0.86	<.001	2.67	<.001	0.85	<.001
B	<---	FO	0.30	0.06	0.80	0.04	0.30	0.06	0.85	0.03	0.30	0.04	0.79	0.04
B	<---	FH	-0.92	0.04	-0.11	0.74	-0.92	0.03	-0.21	0.49	-0.92	0.03	-0.05	0.86
B	<---	CN	-0.22	0.01	0.08	0.56	-0.22	0.01	0.08	0.54	-0.22	0.01	0.07	0.57
B	<---	FS	0.22	0.18	-0.57	0.20	0.22	0.18	-0.59	0.18	0.22	0.17	-0.57	0.19
B	<---	Reli	-0.24	0.11	2.09	0.51	-0.24	0.11	2.20	0.30	-0.24	0.11	4.57	0.42
B	<---	Spir	0.11	0.23	-1.38	0.48	0.11	0.23	-1.44	0.27	0.11	0.22	-2.91	0.41
CMHI	<---	B	0.68	<.001	1.14	0.30	0.68	<.001	1.18	0.03	0.68	<.001	4.97	0.89
CMHI	<---	FO	-0.04	0.72	-1.01	0.31	-0.04	0.72	-1.11	0.02	-0.04	0.68	-3.98	0.88
CMHI	<---	FH	0.71	0.04	-0.14	0.69	0.70	0.03	0.01	0.94	0.70	0.03	-0.04	0.99
CMHI	<---	CN	-0.03	0.60	0.12	0.44	-0.03	0.59	0.12	0.43	-0.03	0.59	-0.16	0.95
CMHI	<---	FS	-0.12	0.30	0.69	0.40	-0.12	0.28	0.73	0.15	-0.12	0.28	2.85	0.89
CMHI	<---	Reli	0.17	0.11	-2.17	0.69	0.17	0.10	-2.28	0.43	0.17	0.10	-22.93	0.90
CMHI	<---	Spir	-0.06	0.39	1.42	0.68	-0.06	0.39	1.49	0.42	-0.06	0.38	14.59	0.90
SD	<---	CMHI	-0.23	0.30	9.19	0.98	-0.24	0.14	10.38	0.95	-0.23	0.14	-0.96	<.001
SD	<---	B	-0.81	0.00	-11.99	0.97	-0.80	<.001	-13.70	0.94	-0.81	<.001	-0.07	0.75
SD	<---	FO	-0.01	0.95	10.42	0.97	-0.01	0.94	12.69	0.94	-	-	-	-
SD	<---	FH	-0.01	0.98	1.53	0.97	-	-	-	-	-	-	-	-
SD	<---	CN	-0.01	0.92	-1.45	0.97	-0.01	0.92	-1.55	0.93	-0.01	0.91	-0.28	0.01
SD	<---	FS	0.03	0.83	-7.18	0.97	0.02	0.76	-8.52	0.94	0.02	0.74	-0.10	0.44
SD	<---	Reli	-0.18	0.13	22.20	0.97	-0.18	0.10	26.14	0.95	-0.18	0.09	-1.61	0.14
SD	<---	Spir	0.11	0.10	-14.54	0.97	0.11	0.08	-17.07	0.95	0.11	0.08	1.01	0.14
Reli	<-->	Spir	21.25	<.001	12.77	<.001	21.25	<.001	12.77	<.001	21.25	<.001	12.78	<.001

Chapter 6 – MI stigma & culture (Continued)

			Model 1				Model 2				Model 3			
			EA		I		EA		I		EA		I	
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*
FO	<---	C	1.25	<.001	1.16	<.001	1.25	<.001	1.16	<.001	1.25	<.001	1.16	<.001
FH	<---	C	0.66	0.00	0.32	<.001	0.66	0.00	0.32	<.001	0.67	0.00	0.32	<.001
CN	<---	C	1.16	0.00	0.27	<.001	1.15	0.00	0.27	<.001	1.16	0.00	0.27	<.001
FS	<---	C	2.67	<.001	0.86	<.001	2.67	<.001	0.86	<.001	2.67	<.001	0.86	<.001
B	<---	FO	0.28	0.05	0.59	0.14	0.29	0.05	0.59	0.14	0.29	0.05	0.70	0.08
B	<---	FH	-0.91	0.03	-0.10	0.76	-0.91	0.03	-0.10	0.76	-0.93	0.03	0.03	0.91
B	<---	CN	-0.22	0.01	0.12	0.34	-0.22	0.01	0.12	0.34	-0.22	0.01	0.09	0.47
B	<---	FS	0.23	0.16	-0.32	0.47	0.22	0.17	-0.33	0.47	0.22	0.17	-0.51	0.26
B	<---	Reli	-0.24	0.11	2.04	0.52	-0.24	0.11	2.02	0.46	-0.20	0.16	11.32	0.50
B	<---	Spir	0.11	0.23	-1.36	0.49	0.11	0.23	-1.35	0.43	0.09	0.32	-7.07	0.50
CMHI	<---	B	0.66	<.001	0.62	0.01	0.66	<.001	0.61	0.01	0.65	<.001	0.53	<.001
CMHI	<---	FO	-	-	-	-	-	-	-	-	-	-	-	-
CMHI	<---	FH	0.69	0.03	-0.38	0.06	0.69	0.03	-0.38	0.06	0.67	0.03	-0.37	0.06
CMHI	<---	CN	-0.03	0.58	0.08	0.37	-0.03	0.55	0.08	0.36	-0.04	0.49	0.10	0.24
CMHI	<---	FS	-0.14	0.20	-0.24	0.05	-0.13	0.21	-0.24	0.04	-0.13	0.21	-0.21	0.03
CMHI	<---	Reli	0.16	0.12	-0.85	0.64	0.16	0.12	-0.83	0.59	0.08	0.02	0.06	0.17
CMHI	<---	Spir	-0.05	0.42	0.57	0.61	-0.05	0.42	0.56	0.56	-	-	-	-
SD	<---	CMHI	-0.24	0.13	-0.77	0.01	-0.24	0.13	-0.76	<.001	-0.25	0.09	-0.55	0.00
SD	<---	B	-0.80	<.001	-0.27	0.40	-0.80	<.001	-0.28	0.04	-0.78	<.001	-0.11	0.55
SD	<---	FO	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	FH	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	CN	-0.01	0.92	-0.26	0.01	0.00	0.96	-0.26	0.01	0.00	0.93	-0.34	0.01
SD	<---	FS	0.02	0.74	0.00	0.99	-	-	-	-	-	-	-	-
SD	<---	Reli	-0.18	0.09	-0.88	0.64	-0.19	0.09	-0.85	0.50	-0.16	0.10	-3.34	0.23
SD	<---	Spir	0.11	0.08	0.54	0.65	0.11	0.08	0.52	0.51	0.10	0.10	2.08	0.23
Reli	<-->	Spir	21.25	<.001	12.76	<.001	21.25	<.001	12.76	<.001	21.23	<.001	12.78	<.001

Chapter 6 – MI stigma & culture (Continued)

| | | | Model 7 | | | | Model 8 | | | | Model 9 | | | |
| | | | EA | | I | | EA | | I | | EA | | I | |
			p	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*
FO	<---	C	1.25	<.001	1.16	<.001	1.25	<.001	1.16	<.001	1.25	<.001	1.16	<.001
FH	<---	C	0.67	0.00	0.32	<.001	0.67	0.00	0.32	<.001	0.66	0.00	0.32	<.001
CN	<---	C	1.16	0.00	0.27	<.001	1.16	0.00	0.27	<.001	1.16	0.00	0.27	<.001
FS	<---	C	2.66	<.001	0.86	<.001	2.67	<.001	0.86	<.001	2.67	<.001	0.86	<.001
B	<---	FO	0.27	0.06	0.65	0.11	0.28	0.06	0.65	0.11	0.28	0.05	0.62	0.12
B	<---	FH	-0.94	0.03	-0.21	0.53	-0.94	0.03	-0.21	0.53	-0.93	0.03	-0.37	0.27
B	<---	CN	-0.22	0.01	0.12	0.32	-0.22	0.01	0.12	0.32	-0.22	0.01	0.16	0.20
B	<---	FS	0.24	0.14	-0.36	0.43	0.24	0.15	-0.36	0.43	0.23	0.16	-0.25	0.57
B	<---	Reli	-0.07	0.20	-0.15	0.01	-0.07	0.20	-0.16	0.01	-0.08	0.14	-0.06	0.36
B	<---	Spir	-	-	-	-	-	-	-	-	-	-	-	-
CMHI	<---	B	0.65	<.001	0.51	<.001	0.66	<.001	0.51	<.001	0.66	<.001	0.49	<.001
CMHI	<---	FO	-	-	-	-	-	-	-	-	-	-	-	-
CMHI	<---	FH	0.68	0.03	-0.34	0.08	0.69	0.03	-0.34	0.08	0.69	0.03	-0.31	0.10
CMHI	<---	CN	-0.04	0.49	0.09	0.25	-0.04	0.51	0.09	0.25	-0.03	0.54	0.08	0.33
CMHI	<---	FS	-0.14	0.21	-0.22	0.03	-0.14	0.20	-0.22	0.03	-0.14	0.20	-0.24	0.02
CMHI	<---	Reli	0.08	0.02	0.06	0.19	0.08	0.02	0.06	0.19	0.09	0.02	0.01	0.65
CMHI	<---	Spir	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	CMHI	-0.25	0.11	-0.75	<.001	-0.26	0.10	-0.75	<.001	-0.25	0.11	-0.76	<.001
SD	<---	B	-0.78	<.001	-0.34	<.001	-0.77	<.001	-0.35	<.001	-0.78	<.001	-0.33	<.001
SD	<---	FO	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	FH	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	CN	0.01	0.90	-0.23	0.01	0.01	0.81	-0.23	0.01	0.00	0.94	-0.22	0.02
SD	<---	FS	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	Reli	-0.13	0.14	4.89	0.98	-0.01	0.77	-0.02	0.71	-0.02	0.57	0.00	0.80
SD	<---	Spir	0.08	0.14	-3.04	0.98	-	-	-	-	-	-	-	-
Reli	<-->	Spir	21.21	<.001	12.82	<.001	21.14	<.001	12.83	<.001	-	-	-	-

Chapter 6 – MI stigma & culture (Continued)

			Model 10				Model 11				Model 12			
			EA		I		EA		I		EA		I	
			p	β	p	β	p	β	p	β	p	β	p	β
FO	<---	C	1.25	<.001	1.16	<.001	1.26	<.001	1.16	<.001	1.32	<.001	1.16	<.001
FH	<---	C	0.67	0.00	0.32	<.001	0.67	0.00	0.32	<.001	0.60	0.00	0.32	<.001
CN	<---	C	1.15	0.00	0.27	<.001	1.13	0.00	0.27	<.001	1.11	0.00	0.27	<.001
FS	<---	C	2.67	<.001	0.86	<.001	2.67	<.001	0.86	<.001	2.70	<.001	0.85	<.001
B	<---	FO	0.28	0.06	0.66	0.11	0.27	0.06	0.61	0.12	0.41	0.00	0.35	0.00
B	<---	FH	-0.95	0.03	-0.21	0.53	-0.97	0.03	-0.19	0.56	-0.58	0.04	-0.15	0.63
B	<---	CN	-0.21	0.01	0.12	0.32	-0.22	0.00	0.16	0.19	-0.21	0.00	0.18	0.14
B	<---	FS	0.24	0.15	-0.36	0.43	0.25	0.14	-0.32	0.46	-	-	-	-
B	<---	Reli	-0.06	0.21	-0.15	0.01	-0.07	0.18	-0.15	0.02	-0.08	0.11	-0.15	0.02
B	<---	Spir	-	-	-	-	-	-	-	-	-	-	-	-
CMHI	<---	B	0.65	<.001	0.51	<.001	0.68	<.001	0.55	<.001	0.66	<.001	0.57	<.001
CMHI	<---	FO	-	-	-	-	-	-	-	-	-	-	-	-
CMHI	<---	FH	0.69	0.03	-0.34	0.08	0.70	0.03	-0.33	0.09	0.62	0.02	-0.32	0.10
CMHI	<---	CN	-0.04	0.47	0.10	0.24	-	-	-	-	-	-	-	-
CMHI	<---	FS	-0.14	0.21	-0.22	0.03	-0.15	0.13	-0.22	0.03	-0.11	0.16	-0.23	0.02
CMHI	<---	Reli	0.08	0.02	0.06	0.18	0.09	0.01	0.05	0.25	0.09	0.01	0.05	0.23
CMHI	<---	Spir	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	CMHI	-0.27	0.05	-0.76	<.001	-0.26	0.06	-0.76	<.001	-0.25	0.08	-0.76	<.001
SD	<---	B	-0.76	<.001	-0.33	<.001	-0.77	<.001	-0.33	0.00	-0.79	<.001	-0.34	0.00
SD	<---	FO	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	FH	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	CN	0.02	0.69	-0.23	0.01	0.01	0.78	-0.23	0.02	0.01	0.79	-0.23	0.02
SD	<---	FS	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	Reli	-	-	-	-	-	-	-	-	-	-	-	-
SD	<---	Spir	-	-	-	-	-	-	-	-	-	-	-	-
Reli	<-->	Spir	21.13	<.001	12.83	<.001	21.13	<.001	12.82	<.001	21.13	<.001	12.82	<.001

Running Head: A CROSS-CULTURAL KNOWLEDGE AND BELIEFS ABOUT MENTAL DISORDERS

9.5. Chi-square values for constrained paths

Study 2.1

Constrained path	CMIN	df	p
SCB → Lay HSB	.292	1	.589
C → Prof HSB	.206	1	.650
Recogn → Lay HSB	.321	1	.571
Recogn → Prof HSB	.007	1	.932
C → SCB	.040	1	.842
Lay HSB → Prof HSB	.053	1	.818
Recogn → SCB	.001	1	.971
C → Lay HSB	.487	1	.485
SCB → Prof HSB	.032	1	.857

Study 2.2

Constrained path	CMIN	df	p
Recogn → SDS	134.463	85	.001
SDS → SCB	136.081	85	.000
SDS → Lay HSB	133.970	85	.001
SDS → Prof HSB	134.443	85	.001
Lay HSB → Prof HSB	146.067	85	.000
Recogn → SCB	133.340	85	.001
Recogn → Lay HSB	136.300	85	.000
Recogn → Prof HSB	136.231	85	.000
SCB → Lay HSB	133.030	85	.001
C → SCB	133.061	85	.001
C → Lay HSB	133.187	85	.001
C → SDS	133.049	85	.001

Study 3.1

Constrained path	CMIN	df	p
B → CMHI	20.519	13	.083
CMHI → SD	21.029	13	.072
B → SD	19.712	13	.103

Study 3.2

Constrained path	CMIN	df	p
C → FO	606.458	289	<.001
C → FH	609.548	289	<.001
C → CN	614.060	289	<.001
C → FS	628.591	289	<.001
B → CMHI	607.821	289	<.001
FO → B	608.380	289	<.001
FH → B	608.664	289	<.001
CN → B	609.330	289	<.001
FS → B	610.603	289	<.001
Rel → B	609.720	289	<.001
Spir → B	609.592	289	<.001
FO → CMHI	612.952	289	<.001
FH → CMHI	609.267	289	<.001
CN → CMHI	607.245	289	<.001
FS → CMHI	611.189	289	<.001
Rel → CMHI	609.264	289	<.001
Spir → CMHI	609.264	289	<.001
CMHI → SD	607.307	289	<.001
B → SD	607.396	289	<.001
FO → SD	606.339	289	<.001
FH → SD	606.618	289	<.001
CN → SD	607.271	289	<.001
FS → FS →	606.171	289	<.001
Rel → CMHI	607.364	289	<.001
Spir → CMHI	607.330	289	<.001
Rel ↔ Spir	612.751	289	<.001

9.6. Chi-square difference tests for paths in Chapter 4

	CMIN	df	p
Recogn → SDS	1.457	1	.227
SDS → SCB	3.075	1	.079
SDS → Lay HSB	.964	1	.326
SDS → Prof HSB	1.438	1	.231
Lay HSB → Prof HSB	13.061	1	.000
Recogn → SCB	.334	1	.563
Recogn → Lay HSB	3.294	1	.070
Recogn → Prof HSB	3.226	1	.072
SCB → Lay HSB	.024	1	.876
C → SCB	.055	1	.814
C → Lay HSB	.181	1	.670
C → SDS	.043	1	.836