A CROSS-CULTURAL COMPARISON OF FACTORS RELATED TO HELP-SEEKING ATTITUDES FOR PSYCHOLOGICAL DISORDER

by

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Abstract

It has been reported that Asian people have negative views of mental illness, including beliefs that it is incurable and shameful. Asian people also tend to attribute causes of mental disorders to factors less susceptible to personal influence such as supernatural factors, and are likely to have an external health locus of control which reflects beliefs that health outcomes are a product of external factors such as luck. In the present study, each of the above constructs were compared between American and Asian students. In addition, the above constructs were used to predict self-report of utilization of various treatment modalities. Four inventories were developed to assess the above constructs and treatment preferences. Reliability and validity of the new measures were examined.

Results revealed that Asian students were more likely than American students to identify psychological disorder as shameful and its sufferers as socially untrustworthy and dangerous. Asian students were also more likely to attribute the causes of psychological disorder to supernatural factors than American students, and were more likely to seek folk medicine remedies for psychological disorder than were American students were. Both American and Asian students endorsed family care as the most preferable treatment approach, followed by psychological intervention, medical intervention, folk medicine intervention, and no treatment. An internal mental health locus of control predicted participants' willingness to seek no treatment. Among Asian students, beliefs in the untrustworthiness of the mentally ill predicted their willingness to seek folk medicine treatment. Attribution of psychological disorder to supernatural causes predicted their unwillingness to seek medical treatment. Among American students, an internal mental health locus of control predicted participants' willingness to seek no treatment. Attribution of supernatural causes and an internal mental health locus of control predicted their willingness to seek folk medicine treatment. A belief that mentally ill people were untrustworthy predicted a preference for medical interventions.

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Dedication

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Introduction

The Asian population in the United States has been increasing after World War II. Approximately 270,000 people emigrated from Asian countries in 1995, which is 37.2% of all immigrants (US immigration and Naturalization Service, 1996). Moreover, proportionately 64% of all international students in the United States in 1994-1995 were from South, Middle and East Asian countries (US Department of Education, 1996). The life circumstances of these Asian people and students provide a number of stressors. They have experienced relocation, separation from significant others, financial concerns, health problems, and difficulties with language. A recent study of Asian people in a college sample revealed that difficulties with the English language is an important source of their life stress (Yang & Clum, 1994). Because these Asian people may experience higher levels of stress, they may be more at risk to suffer from psychological disorders than American people. Kinzie and Leung (1993) suggested that 50% of Indochinese in California need treatment for psychological disorders due to their life history as refugees, and Kim (1993) also indicated the need for psychological treatment for the Korean population in the United States.

However, non-western individuals in general, including Asian people in particular, have been underrepresented in psychological treatment facilities which provide western-style psychological treatment. One recent survey by the National Institute of Mental Health (Matsuoka, Breaux, & Ryujin, 1997) reported that for all types of services (e.g., inpatients or outpatients, etc.) across all types of facilities (e.g., hospitals psychiatric services, mental clinics, community services, etc.), Asian American /Pacific Islanders are much less likely than their Euro-American counterparts to make use of mental health services. One recent research study reported that non-white individuals, including Asian Americans who had mental illness were less likely to have consulted a specialist in mental health (Gallo, Marino, Ford, & Anthony, 1995). Several authors (Enrique, 1993; Fujii, Fukushima & Yamamoto, 1993; Gaw, 1993; Kim, 1993) described a low rate of utilization of mental health services among the Asian population including Chinese, Japanese, Korean and other Southeast Asians in the United States. This trend may reflect the attitudes toward the utilization of such services formed in their home countries. One recent study conducted in Singapore showed that the main coping strategy of Chinese families with a mentally ill person is indifference and tolerance (Bentelspacher, Chitran & Rahman, 1994). Butcher, Narikiyo, and Vitousek (1993) stated that hospitalized patients with mental illness in non-western societies are a highly selected group, implying that there exist patients who might be cared for within the family, tolerated by society, or simply lack access to or motivation for treatment.

On the other hand, several culturally-appropriate treatment methods for psychological disorder among Asian populations have been reported. Asian people seem likely to seek treatment consistent with their cultural strategies. Chinese seek more classical Chinese medicine and folk healers including shamans, physiognomers, geomancers, and bonesetters than they do practitioners of western medicine (Gaw, 1993). Koreans seek more traditionally-oriented herbal and /or acupuncture treatment, Chinese medicine and shamans (Kim, 1993). One recent study with Indochinese in Australia reported that they tend to receive initial help from traditional healers as well as family members (Lam & Kavanagh, 1996). Similarly, another recent study with

non-western people including families in Malaysia reported that the majority of the sample families with a mentally ill person utilized the service of a religious counselor or a traditional healer (Wintersteen, Wintersteen, Mupedziswa, & Cheah, 1997).

Why are Asian people living in western countries less likely to seek western psychological treatments? It seems that because western psychological treatments have been developed in western societies and require people to explore feelings and thoughts openly, these strategies may not be compatible with Asians' cultural and traditional values such as modesty. Consequently Asian people may feel conflicts when they seek western-style psychological treatment. Considering this, Asians' acculturation level might be one factor to explain their underrepresentation in western-style psychological treatment facilities. Regarding the relationship between Asians' acculturation level and their treatment seeking behavior, some inconsistent research findings are reported. Leong, Wagner, and Kim (1995) reported that Asian Americans' positive attitudes toward psychological treatment are related to their acculturation level, whereas Atkinson, Lowe, and Matthews (1995) reported that Asian Americans' willingness to seek psychological treatment is not influenced by their acculturation level. These findings may indicate that there are some other factors which may better contribute to Asians' treatment seeking behavior. In the present study, attitudes toward psychological disorder in general, causal attributions for psychological disorder, and culturally- shaped beliefs in controllability of their health outcomes were examined as possible factors underling Asians' treatment-seeking behavior.

Negative views of psychological disorders

In Asian societies, people appear to have negative views of psychological disorders. Johnson and Orrell (1995) reported that the negative view of mental illness includes constructs of it as enduring, inherited, difficult to cure, and not influenced by personal efforts. Another recent study (Skinner, Berry, Griffith, & Byres, 1992) suggested that beliefs about stigmatization effects of mental illness include negative expectations of the effects of mental illness on interpersonal and social relationships (e.g., children and romantic relationships, social functioning), and on trust and responsibility (e.g., work and child care). One study in South India reported that depressive symptoms are considered to be private and dangerous and socially disadvantageous (Ragman, Weiss, Channabasavannam, & Devins, 1996). Other recent studies (Enrique, 1993; Fujii et al., 1993; Gaw, 1993; Kim, 1993) suggest that in Asian countries such as Korea, China and Japan, mental illness traditionally brings shame upon the entire family and raises concern about the appropriateness of sufferers for such social institutions as marriage. Filipino Americans believe that only a person whose behavior dangerously deviates from their society requires psychological treatment (Enrique, 1993). Based on these studies, it seems likely that Asian people see mental illness as being incurable, shameful, and dangerous, and that it leads to social untrustworthiness. As Johnson and Orrell (1995) suggest, these stigmas attached to mental illness seem likely to influence Asian peoples' willingness to acknowledge that they have a mental illness and their subsequent attitudes toward utilization of mental health resources. Asian people may feel a fear of being labeled as having psychological disorder as the result of the utilization of psychological treatment; consequently, they are likely to refuse psychological treatment and seek other types of treatment including family care.

Attribution of causes of psychological disorder

Causal attribution of psychological disorder is another factor that might influence what type of treatment people seek. Although western people in general may attribute causes of psychological disorder to such factors as social and psychological factors, Asian people may attribute causes of mental disorders to factors less susceptible to personal influence. One popular Chinese view of psychological disorder is that it is a sign of the wrath of the Gods or one's ancestors (Gaw, 1993). Koreans may also view mental illness as the product of a supernatural intervention (Kim, 1993). One recent study reported cultural differences in causal attributions among college students on mental illness (Landrine & Klonoff, 1994). These authors reported that although supernatural causes such as sinful thoughts, punishment from God, evil eye, sinful acts, lack of faith, hexes, payback, and thin blood are not considered to be primary factors in the etiology of psychological disorder, non-white college students, including Asian students, endorsed more supernatural causes of mental illness than did white college students. Another study with epilepsy patients conducted in India reported that the choice of folk healers was associated with a belief in supernatural causes, whereas people who participated in the social network and had a belief in a physical cause sought intervention from modern medicine (Banerjee & Banerjee, 1995). Based on these studies, Asian people seem likely to attribute the cause of mental illness to factors such as supernatural factors. These causal attributions of psychological disorder may in turn lead individuals from Asian countries to seek cultural or folk medicine treatment rather than psychological treatment.

Mental health locus of control

Locus of control for health outcomes may also influence treatment-seeking behavior. Individuals who believe that health outcomes are a product of their own efforts (an internal locus of control) as opposed to believing that health outcomes are a product of external features such as luck (an external locus of control) are more likely to engage in behaviors in which they learn a process to improve their mental health. In a recent study, Kawanishi (1995) reported that Japanese were twice as likely as Americans to attribute successful coping to good luck rather than the treatment effect. Japanese agree more strongly than Americans with statements such as "Successful coping depends mostly on luck." These results support a conclusion that Japanese have an external locus of control with regard to health outcome and that this might be one of the determining factors for their treatment-seeking behavior. That is, they may have a lower expectation for therapeutic gain from psychological treatment which requires more active involvement in therapy than from other treatments.

Hypotheses

To date, the research literature has focused on the examination of cultural differences on single constructs related to mental illness such as negative views and causal attributions of psychological disorder. Although, some of the literature suggested possible relationships between these constructs and treatment-seeking behavior (Johnson & Orrell, 1995; Landrine & Klonoff, 1994), comprehensive studies in this area have not been reported. Further validation of these differences is needed as well as an examination of the amount of independent contribution of

each of these factors to willingness to seek psychological interventions for mental health problems.

Based on the foregoing studies, the following hypotheses will be examined.

1. Foreign students from Asian countries will have more negative beliefs of psychological disorder defined as believing psychological disorder is incurable and shameful and its sufferers are socially untrustworthy and dangerous than will American students.

2. Foreign students from Asian countries will be more likely to attribute causes of psychological disorder to supernatural factors and will be less likely to attribute the causes to psychological factors than will American students.

3. Compared with American students, foreign students from Asian countries will be more likely to have an external mental health locus of control than will American students.

4. Beliefs of psychological disorder, causal attribution of psychological disorder and mental health locus of control will independently predict treatment-seeking behavior for both American students and foreign students from Asian countries. Specifically, students who have less negative beliefs about psychological disorders, attribute causes of psychological disorders to psycho-social factors, and who possess a high internal health locus of control are more likely to report willingness to seek psychological treatment, while students who have more negative beliefs about psychological disorders, attribute causes of psychological disorders to supernatural factors, and have a high external locus of control are more likely to report willingness to seek culturally-appropriate treatment methods (e.g., folk medicine, religious healers, etc.).

The purpose of the present study is to compare and contrast Asian students' concept of psychological disorder, causal attribution of psychological disorder and levels on mental health locus of control with those of American students. The present study uses American students as a control group in contrast to most of the recent research studies examining cultural differences on attitudes toward mental illness and treatment seeking behavior (Atkinson et al., 1995; Bentelspacher et al., 1994; Landrine & Klonoff, 1994; Leong et al., 1995, Skinner et al., 1992). A second benefit of the present study is development of new scales to measure cultural differences on attitudes toward mental illness, attributions of causes of mental illness, and treatment seeking behavior. In comparison to recent research studies which conducted interviews to measure these constructs (Lam & Kavanagh, 1996; Ragman et al., 1996) or administered self-report questionnaires using an open-ended format (Skinner et al., 1992; Landrine & Klonoff, 1994), the present study uses structured questionnaires to evaluate a number of constructs.

Method

Subjects

A total of 216 students at Virginia Tech participated in this study. One hundred and fourteen international students were born in Asia and held student visas, 5 were international students born in other western countries, and 97 were American students including Caucasian,

African American, Hispanic, Asian American and others. “Asian countries” were those included in the classification of Asian countries by the World Almanac and Book of Facts (1996).

Although the number of years of residence in the United States for Asian participants was preferred to be less than 5 years to minimize the influence of the Asians’ acculturation level on their treatment seeking behavior, 91 Asian students met this criterion, while 11 students had been in the United States between 5 to 7 years, and 12 students had been in the United States more than 7 years. Their countries of origin included Bangladesh (n = 1), China (n = 31), Hong Kong (n = 3), India (n = 22), Indonesia (n = 8), Japan (n = 5), Macao (n = 1), Malaysia (n = 5), Nepal (n = 5), Pakistan (n = 2), Philippines (n = 1), South Korea (n = 16), Taiwan (n = 6), Thailand (n = 7), and Vietnam (n = 1). Among this Asian group, 85 were male and 29 were female, and 86 were single and 28 were married. Their age range was from 18 to 39 (M = 25.3, SD = 5.1). Ten were freshmen, 8 were sophomores, 6 were juniors, 12 were seniors, 74 were graduate students, and 4 were language intensive course students. Eight participants were enrolled in the Introductory Psychology or other psychology courses such as social psychology, and were given an extra credit. The other 106 students were recruited without the opportunity to receive the extra credit. Four Asian students were majors in psychology.

Among American and western students, 89 students were Caucasian, 4 were Hispanic, 5 were Asian American, 2 were African American, 1 was Pacific Islander, and 1 was other. Their countries of origin included Columbia (n = 1), England (n = 1), Puerto Rico (n = 1), Spain (n = 2), and the United States (n = 97). Among this group, 45 were male and 57 were female, and all of the participants were single. Their age range was from 18 to 28 (M = 19.6, SD = 1.6). Thirty-two were freshmen, 26 were sophomores, 26 were juniors, 17 were seniors, and 1 was a graduate student. Ninety students were enrolled in the Introductory Psychology or other psychology course, and were given an extra credit. The other 12 students were recruited without the opportunity to receive the extra credit. Seventeen American students were majors in Psychology.

A summary of the demographic features is listed in Table 1.

Predictor measures

Three questionnaires were developed to measure Asian peoples' concept of psychological disorder, attribution of causes of psychological disorder, and mental health locus of control. Several recent research studies (Atkinson et al., 1995; Delphine & Rollck, 1995; Furnham & Andrew, 1996; Leong et al., 1996; Lippincott & Mierzwa, 1995) have investigated various factors to predict treatment seeking behavior across various ethnic groups, including Asians and African Americans, and across various age groups, including undergraduate students and other adult people, by administering self-report questionnaires. Based on this research trend, the approach used in the present study of administering self-report questionnaires of attitudes toward and beliefs about mental health as well as treatment preferences is believed to be reasonable. The psychometric properties including reliability and validity of these scales are reported in the Results section.

Beliefs about Psychological Disorder (BPD). The BPD questionnaire was designed to

assess an individual's stereotypical views of psychological disorder. It is composed of 24 statements, each of which assesses beliefs regarding the incurable and shameful features of psychological disorder, and the untrustworthiness and dangerousness of individuals with psychological disorder. These dimensions are based on descriptive constructs in the studies by Johnson and Orrell (1995), Skinner et al. (1992), Ragurman et al. (1996), Enrique (1993), Fujii et al., (1993), Gaw (1993), and Kim (1993), but which have not yet been developed as part of a standardized assessment instrument. All items in the BPD are originally developed from constructs reported in the cross-cultural literature and from the investigators' experience interacting with Asian cultures. The items are rated on a 6-point Likert scale ranging from completely disagree (0) to completely agree (5). High scores reflect higher level of negative beliefs about psychological disorders. (Appendix A)

Attribution of Causes of Psychological Disorder (ACPD). The ACPD questionnaire was designed to assess an individual's attributions of causes of psychological disorders. This questionnaire includes 18 statements, which examine attributions reflecting psychosocial (e.g., interpersonal conflict, stressful life event etc.) and supernatural (e.g., sinful thoughts, punishment from God, evil eye, thin blood, animals, planets, spirits, etc.) causes of mental disorder. These causal attribution dimensions were based on constructs in the studies of Landrine and Klonoff (1994), Millet et al. (1996), and Whaley (1997), but which had not yet been developed as part of a standardized assessment instrument. All items in the ACPD were originally developed from constructs reported in the cross-cultural literature and from the investigators' experience interacting with Asian cultures. The respondents are required to evaluate their level of agreement with statements on factors that cause psychological disorder. The items are rated on a 6-point Likert scale ranging from completely disagree (0) to completely agree (5). A high score on each item reflects higher level of attribution of psychological disorder to supernatural causes. (Appendix B)

Mental Health Locus of Control Scale (MHLCS). The MHLCS was modeled after the Health Locus of Control measure (Wallston, Wallston, Kaplan, & Shirley, 1976), but was modified to be specific to beliefs regarding change in emotional problems consequent upon internal vs. external factors. In the MHLCS, the participants were asked to indicate the degree of their expectancies regarding locus of control of mental health-related behavior should they be in position to have to deal with a psychological disorder. The questionnaire includes 11 statements describing beliefs of mental health-related locus of control. The items are rated on a 6-point Likert scale ranging from completely disagree (0) to completely agree (5). This scale is scored in the external direction, with reverse scores for the internally worded items. Thus, a low score reflects a belief that improved mental health can be accomplished through one's own efforts (i.e., internal mental health locus of control), whereas a high score reflects a belief that improved mental health is accomplished only through external factors (i.e., external mental health locus of control). (Appendix C)

Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA, Suinn, Figueroa, Lew, S., & Vigal, 1987). The SL-ASIA consists of a 26-item multiple choice questionnaire covering topics such as language preferences, ethnic identity, friendship choice, behaviors, generational/ geographic history, and attitudes toward one’s ethnic group. Twenty-one items (item 1 to item

21) were used in the present study based on the instruction provided by Suinn (personal contact, 1998). Each item is scored on a continuum ranging from 1.00 which is indicative of low acculturation (or very Asian) to 5.00 which is indicative of high acculturation (or very anglicized). A reliability estimate using Cronbach's alpha of .91 was obtained by Suinn, Ahuna, & Khoo (1992). A reliability estimate using Cronbach's alpha in the present study was .82 (n=100)

Criterion measure

Treatment-Seeking Behavior (TSB). This questionnaire was given to participants to assess their treatment-seeking behavior. The questionnaire consists of 16 statements, which examine preferences for different treatment approaches, including western psychological treatment, an Asian-based culturally-appropriate treatment (e.g., folk medicine, religious healers, etc.), pharmacological treatment, use of family support, and no treatment-seeking. All items in the TSB were originally developed from constructs reported in the cross-cultural literature and from the investigators' clinical experience. The respondents are required to evaluate their level of agreement with each statement if they were to experience several psychological symptoms. The items are rated on a 6-point Likert scale ranging from completely disagree (0) to completely agree (5). A high score on each item reflects higher level of the likelihood they would seek such treatment. The psychometric properties including reliability and validity of this scale are reported in the Results section. (Appendix D)

Procedures

Participants were recruited via flyers on campus, email, and the newsgroups of Virginia Tech in the Internet. Information on the study's purpose, money prize opportunities, and ways to reach the investigator were described in each of media. Email was sent to Asian students who were on the international student list obtained from the Cranwell International Student Center at Virginia Tech. The students who responded to the email, or saw the flyers or the newsgroups and responded to the investigator were informed that if they were taking either Introductory Psychology or other psychology course, they would receive one extra credit for participating in this study, and that if they completed all the questionnaires, they could win a money prize up to $100. A sign-up sheet for Introductory Psychology was also used for the recruitment procedure, informing them of the extra credit and the money prize opportunities.

The BPD, ACPD, MHLCS, and TSB scales were given to all participants in this order. The SL-ASIA was given only to Asian participants to estimate their level of acculturation. Prior to answering these questionnaires, the participating individuals were given an informed consent (Appendix E) and the identifying information sheet covering general demographic questions (Appendix F). The consent form detailed the research purpose, procedure, freedom of withdrawal, risks and benefits, and compensation. After reading the consent form individuals who agreed to participate signed it. The individuals were asked to answer the questions in the same order honestly. For the Asian participants, approximately 40 minutes were required to complete all questionnaires, whereas approximately 15 minutes were required for the American and western participants. The investigator verbally answered Asian participants' questions

regarding English words and allowed them to use the dictionary.

All participants were informed that they could request a copy of the results of this study. Sixteen participants were chosen by lottery to be given a money prize for their full participation. Specifically, the prize included $100 for 2 participants, $50 for 4 participants and $10 for 10 participants. The winners were notified by email after all data were collected.

Data Analysis

A t-test and the Pearson chi square tests were performed to detect any possible distribution differences on demographic variables between foreign students from Asian countries and American students, including age, gender, marital status, and class year.

A series of exploratory factor analyses were conducted to examine construct validity in the BPD, ACPD, MHLCS and TSB scales. The analyses were conducted separately for the Asian and the American and western students followed by a factor analysis of the combined group.

Because it was expected that new predictor measures were correlated, MANOVAs using Wilk's Lambda criterion were conducted to investigate differences in all of the factors of the BPD, ACPD, and MHLCS between American students and between all Asian students and those who have been living in the United States less than 5 years. The factors used in this procedure were ones which were identified in the factor analysis procedures.

One-way ANOVAs were conducted to investigate hypothesized differences between Asian and American students. Comparisons were conducted on total scores for the BPD and the MHLCS and on each factor which was identified as meaningful in the factor analysis procedures. Because subsamples within the American student sample were small (5 Asian Americans, 4 Hispanics, 2 African Americans, 1 pacific islander, and 1 other), all ethnic groups within the American sample were combined.

Using the identified factors in each predictor measure, multiple regression analyses were conducted to determine whether or not any sets of these factors predicted both American students and Asian students' treatment-seeking behavior (i.e., seeking western style psychological treatments, seeking culturally-appropriate treatment methods).

Regression diagnostics were conducted with the data to detect potential problems that could affect interpretation of the results of regression analyses. Assumption violations such as non-linearity, inclusion of irrelevant predictors, outliers, leverage (outliers in predictor variables), influential cases, and collinearity of predictors were examined.

Results

Participants

A t-test and chi square analyses revealed that there was significant distribution difference

between the two samples on age, gender, marital status, and class year. A summary of these comparisons is shown in Table 1. Because sampling did not permit matching Asian and American student participants on demographic variables, these variables were analyzed as possible factors related to the measures of interest.

Among the Asian group, no differences on each of the demographic variables were found between those living in the United States less than 5 years and those living in the United States 5 or more years. To test whether Asians living in the United States are less acculturated than those living in the United States 5 or more years, the acculturation level of these two groups was examined using the SL-ASIA questionnaire. The mean score for all Asian participants was 2.16 ($SD = .33$, $n = 100$). The mean score for Asian students who had been in the United States less than 5 years was 2.11 ($SD = .26$, $n = 85$), whereas the mean score for Asians students living 5 or more years was 2.44 ($SD = .51$, $n = 15$). The difference between the scores of these two Asian groups was statistically significant ($t(100) = 3.90$, $p < .000$). However, these scores indicated that both groups identified themselves as Asians and believed in Asian values more than American values.

Among American students, only one graduate student was found. This individual was eliminated from the data when demographic variables were used for regression analyses among American students because of his unique status among the American student sample.

New Measures

Construct validity in the BPD, ACPD, MHLCS and TSB scales was examined by exploratory factor analyses. The principle components method and varimax with Kiser normalization rotation were employed in a series of factor analyses on each measure. The factor analyses were conducted separately for the Asian and the American and western students followed by a factor analysis of the combined group. The analyses were conducted both by specifying the number of extracted factors based on the experimenter's expectations and without specifying the number of factors. In each process, a factor loading level of .40 was used as the cutoff criterion for factor membership as well as was an examination of the face validity of each item. The factors produced by the analyses with the combined group were given first priority because the combined group had the largest sample sizes and produced the higher reliability estimates. Items that loaded on two factors were placed with the factor after examining both factor loading and face validity for each factor. Items were retained in the factor where they have a lower factor loading only when the factor reliability for the newly constituted factor did not change significantly from the original one. Based on this procedure, meaningful factors in each new measure were identified and titled.

For the BPD, a 4-factor solution produced by specifying the number of factors with the combined group was the most meaningful. One of the four factors whose items had little face valid commonality was eliminated from the final solution .The three remaining factors were titled : 1. Dangerousness; 2. Embarrassment and Untrustworthiness; and 3. Incurability. This solution approximates the expected 4 factor solution with the exception that factor 2 included items expected to factor on two separate factors. Two items categorized in the eliminated factor

were moved to factor 2 and one item in factor 2 was moved to factor 1 based on the aforementioned rules. Twenty-one items out of the original 24 items were included in the final solution.

For the ACPD, a 2-factor solution produced by specifying the number of factors with the combined group was the most meaningful. The two factors were titled : 1. Psychosocial causes of psychological disorder; and 2. Supernatural causes of psychological disorder. This solution was identical to the expected 2 factor solution, and the items were distributed into these two factors as expected.

For the MHLCS, a 2-factor solution produced by specifying the number of factors with the combined group was the most meaningful. The two factors were titled : 1. Internal health locus of control; and 2. External health locus of control. This solution was identical to the expected 2 factor solution, and the items were distributed into these two factors as expected .

For the TSB, a 6-factor solution using the combined group with no pre-specified number of factors was the most meaningful. Because one factor in which two items were loaded had a low reliability estimate and ambiguous face validity, it was eliminated from the final factor solution. The five factors were titled : 1. No treatment-seeking; 2. Folk medicine; 3. Psychological treatment; 4. Medical treatment; and 5. Family care. Psychological treatment, pharmacological treatment, culturally-appropriate treatment methods (e.g., folk medicine, religious healer etc.) were identified as expected, whereas family care and no-treatment were not expected factors. Fourteen items out of the original 16 items were included in the final solution.

Items in each factor for each scale are presented in Tables 2-1, 2-2, 2-3, and 2-4 along with their factor loadings. Cronbach’s alpha reliability for the BPD, the MHLCS, and each factor for all scales were obtained for Asian students, American students, and the combined group. The results for the combined group and the separate groups are shown in Table 3. Examination of the reliability estimates shown in Table 3 revealed high internal consistency of the BPD scale and very low internal consistency of the MHLCS scale (external direction). Moderate to high internal consistency of the BPD and ACPD factors, low to moderate reliability for the MHLCS factors, and with the exception of the no-treatment factor, moderate to high reliability for the TSB questionnaire factors were demonstrated. The results revealed that reliability estimates for both the Asian and American groups were comparable with the exception of the MHLCS factors.

Item total correlations for each subscale were obtained for the combined group and each of the subgroups to further examine the reliability of the scales. These results are shown in Tables 4-1, 4-2, 4-3, and 4-4. The results demonstrated significant item total correlations among the combined group. Among American sample, item 8 in factor 2 of the BPD was not significantly correlated with other items in this factor. Among Asian, item 5 in the external MHLCS factor of the MHLCS was not significantly correlated with other items in this factor.

Group comparisons

A MANOVA using Wilk's Lambda criterion revealed that there was a significant

difference between Asian and American students on the means of a joint distribution of all of the factors of the BPD, ACPD, and MHLCS [$F(7, 195) = 8.393$, $p<.000$]. In a second MANOVA, there was no significant difference between Asian students who have been living in the United States less than 5 years and those living in the United States 5 or more years.

One-way ANOVAs were conducted to investigate hypothesized differences between Asian and American students. The comparisons were conducted between all Asian students and American students on total scores for the BPD and the MHLCS (external direction) and on total scores of each factor of each questionnaire. A summary of the results is presented in Table 5.

As Table 5 indicates, the BPD total scores showed that Asian students had significantly stronger negative beliefs about psychological disorder in general compared to American students. Comparisons on total scores of each factor indicated that Asian students are more likely to think that people who are suffering from psychological disorder are dangerous and untrustworthy, and that their personal level of embarrassment would be greater if they or someone they knew were mentally ill. No difference between groups was found on the incurability factor.

The low mean scores of the supernatural factor of the ACPD indicated that neither Asian students nor American students strongly believed that supernatural factors are likely to cause psychological disorders. However, as expected Asian students were more likely to endorse the supernatural factor as a possible cause of psychological disorder than were American students. Although it was hypothesized that Asian students were less likely to endorse the psychosocial factor as a possible cause of psychological disorder, there was no significant difference on this factor between the two groups.

Total score on the MHLCS was not different for the two groups. However, Asian students scored higher on both external and internal mental health locus of control factors than American students.

Regarding treatment seeking behavior as measured by the TSB, participants from both groups indicated they would seek some type of treatment if they had a psychological disorder. Based on an average score per item in each factor the most frequently endorsed approach was family care, followed by psychological intervention, medical intervention, folk medicine intervention, and no treatment. This order was identical for both student groups. As hypothesized, Asian students were more willing to seek folk medicine than were American students if they had a psychological disorder, while American students were more likely to seek medical treatment. No other differences were found.

Correlations

Correlations between predictors and criterion variables were conducted to investigate whether or not there were any significant relationships between the predictors and the treatment options. In addition to correlations among all Asian students, correlations for China, India, and South Koreans were separately obtained to determine if there were between-country differences.

These countries were chosen because of their relatively large sample size. A summary of these correlations is shown in Table 6-1. Correlations between demographic variables and predictor and criterion variables were conducted to investigate whether or not there were any significant relationships between the demographic variables and the predictors and treatment options. Class year was coded as 1 for freshmen, 2 for sophomores, 3 for juniors, 4 for seniors, 5 for graduate students when correlation analyses were conducted. Language intensive students were not coded because their education level did not reflect the above categorization. Thus, they were eliminated from analyses evaluating education levels for Asian students.

A summary of these correlations is shown in Table 6-2. The results revealed the presence of significant correlations between predictors, and low to moderate correlations between criterion variables except for the correlation between psychological treatment and medical treatment and between psychological treatment and no treatment option for the combined group.

Several significant correlations were found between the predictor variables and the participants' treatment preferences, although these relationship differ somewhat depending on which group of students is being examined. Preference for psychological treatment and preference for family care were not correlated with any predictor variables. Preference for medical treatment was differentially related to predictor variables among Asian and American students. Among Asian students beliefs that mental illness was incurable and that it was caused by supernatural factors were negatively correlated with preference for medical treatment. Among American students beliefs that individuals with mental illness are dangerous and untrustworthy and that mental illness is incurable were positively correlated with preference for medical treatment. Preference for no treatment was not related to any predictor factors among Asian students, but among American students, preference for no treatment was positively correlated with beliefs that individuals with mental illness are untrustworthy, that supernatural factors cause mental illness and both internal and external mental health locus of control. These latter correlations largely accounted for the relationships in the combined sample. Preference for folk medicine treatment was differentially related to predictor variables among Asian and American students. Internal mental health locus of control and beliefs that supernatural factors cause mental illness were positively related to folk medicine remedies among American students, while a belief that mentally ill people are untrustworthy and suffering from psychological disorder is shameful were positively correlated with folk medicine remedies among Asian students.

Next examinations were the correlations between demographic and predictor and criterion variables. Because only one graduate student was found among American students, this individual was eliminated from correlation analysis evaluating demographic variables for American students. For both groups gender correlated with negative beliefs that psychologically ill people are dangerous and untrustworthy, an internal mental health locus of control, and preferences for the no treatment and folk medicine options. American students and Asian students demonstrated different correlation patterns. Among Asian students, being married and age correlated with predictor and criterion variables, while among American students gender correlated with several predictor and criterion variables. Among American students, gender correlated with a negative belief that mentally ill people are dangerous and untrustworthy, an attribution that psychological disorders were caused by supernatural factors, an internal mental

health locus of control, and preferences for no treatment and folk medicine remedies. The relationships between gender and the predictor and criterion variables for the combined group was similar to those found among American students.

Regression Analyses

To determine if ethnicity (coded as American = 0 and Asian = 1) predicted differences in beliefs and attributions after controlling for gender, hierarchical regression analyses with the listwise option for dealing with missing data were conducted. Gender was controlled only if there were correlations between gender and the factors in the developed scales. Age was not correlated with predictor variables within ethnic samples, and other demographic variables such as class year and marital status appeared to be artifactually related to beliefs, attributions, and treatment-seeking preferences due to sample selection. Thus, these other variables were not controlled. To determine if Asian students' acculturation level (SL-ASIA total) predicted differences in beliefs, regression analyses with the same option described above were conducted. These results are presented in Table 7-1. As can be seen from these analyses, cultural differences between American and Asian students predicted their beliefs about psychological disorder, attribution of supernatural factors as causes of psychological disorders, both internal and external mental health locus of control, and choice of folk medicine remedies. Among Asian students, more acculturated Asian students are less likely to believe that supernatural factors cause psychological disorders and are less likely to believe that their mental health are control by their own efforts.

A series of stepwise regression analyses with the listwise option for dealing with missing data was conducted to determine which set of predictor variables predicts both American students and Asian students' treatment-seeking preferences. From the correlation analysis, predictors which were significantly correlated with the criterion variables were chosen and entered into the regression analyses. This procedure was used to reduce the number of predictor variables. Stepwise procedures could also reduce effects of mulitcollinearity. These results are presented in Table 7-2.

The analyses predicting treatment preferences that included all participants demonstrated that only internal mental health locus of control predicted participants' willingness to seek no treatment. Attribution of supernatural causes and a belief that mentally ill people were untrustworthy predicted a preference for folk medicine treatments, which approximated the hypothesis that students who have more negative beliefs about psychological disorders are more likely to report willingness to seek culturally-appropriate treatment methods. Attributing supernatural causes to the development of psychological disorder predicted unwillingness to seek medical treatments. Among Asian students, it was shown that beliefs in the untrustworthiness of the mentally ill predicted their willingness to seek folk medicine treatment. It was also shown that their attribution of psychological disorder to supernatural causes predicted their unwillingness to seek medical treatment. Among American students, an internal mental health locus of control predicted participants' willingness to seek no treatment. Attribution of supernatural causes and an internal mental health locus of control predicted their willingness to seek folk medicine treatment. A belief that mentally ill people were untrustworthy predicted a preference for medical interventions.

A series of hierarchical and stepwise regression analyses using the same approach described above was conducted in order to determine which set of new measures above and beyond ethnicity and gender predict both American students and Asian students' treatment-seeking preferences. For separate groups, gender was controlled to determine predictors for treatment preferences. These analyses were conducted only if there were correlations between treatment options and the demographic variables. These results are presented in Table 7-3.

The results of the regression analyses controlling for gender and ethnicity variables presented in Table 7-3 revealed different sets of relationships between predictor and criterion variables for American and Asian students. Among Asian students, none of predicted relationships were found when controlling for the gender variable. For American students, on the other hand, an internal mental health locus of control predicted their preference for seeking no treatment, and supernatural causal attributions predicted their willingness to seek folk medicine remedies when controlling for the gender variable.

Regression diagnostics including tests for the presence of non-linearity, collinearity tests using VIF < 20 as a critical level, residual plots, histograms, studentized residual analyses for detecting outliers, leverage diagnostics, and Cook's D using D > 1 as a critical level for detecting influential cases demonstrated no hetero-scedasticity, no significant collinearity of predictor variables, and high likelihood of inclusions of no irrelevant predictors, no significant outliers, and no significant influential cases for the American student, Asian student, and combined student groups. The diagnostic analyses demonstrated the presence of leverage. Further analyses revealed no significant differences of predictor-criterion variable relationships between the original samples and samples developed after eliminating individuals contributing leverage across all groups. These results indicate that obtained data from the current samples can be interpretable without further statistical controls.

Discussion

A series of factor analyses with the combined samples (N = 216) examined construct validity for the four scales, revealing that the Beliefs of Psychological Disorder Scale has 3 factors, the Attribution of Causes of Psychological Disorder Scale has 2 factors, the Mental Health Locus of Control Scale has 2 factors, and the Treatment Seeking Behavior Scale has 5 factors. In general the factor solutions were consistent with the experimenter's expectations. For the BPD, the factor structure was as expected with the exception that items reflecting both Embarrassment and Untrustworthiness were integrated into one factor. For the ACPD and MHLCS, the identified factors and items included in these factors were identical to hypothesized factors and item distributions. For the TSB, the factor structure was as expected with the exception that No-treatment and Family Care were identified as two separate factors, although they were expected to be one factor. In general, identified factors and item distributions produced by the combined student group were most closely related to the hypothesized factors and item distributions than when the samples were divided by ethnic origins. These latter results may represent real differences between the two samples or improved factor reliability for the larger combined sample.

Examination of the reliability estimates for each factor revealed moderate to high internal consistency of the BPD and ACPD factors, but low-moderate reliability for the MHLCS factors, and with the exception of the no-treatment factor, moderate to high reliability for the TSB questionnaire factors. Similar reliability estimates were found among both American and Asian groups. These results indicate these new questionnaires are relatively reliable measures for both Asian and American students. Item total correlations revealed moderate to high correlations of items within factors for the BPD, ACPD, MHLCS, and TSB with the exceptions that one item in the BPD and one item in the MHLCS were not significantly correlated with other items when American and Asian students were analyzed separately.

As hypothesized, foreign students from Asian countries had negative beliefs about psychological disorder in general compared to American students. However, analyses failed to demonstrate that Asian students had significantly stronger negative beliefs on each factor of negative beliefs than American students. More specifically, no difference between groups was found on the incurability factor. Although neither Asian students nor American students strongly believe that supernatural factors are likely to cause psychological disorder, as hypothesized Asian students were more likely to endorse supernatural factors as possible causes of psychological disorder than were American students. No significant difference was found between Asian and American students in the belief that psychosocial factors cause mental illness. These latter findings suggest that Asian students are sophisticated about psychosocial theories of psychological disorder. This may reflect a selection factor that Asian students who select study in the United States may be more familiar with western ideas than students remaining in their countries of origin. As opposed to the hypothesis that, compared with American students, foreign students from Asian countries will be more likely to have an external mental health locus of control, total scores on the MHLCS (external direction) were not different for the two groups. However, Asian students scored higher on both external and internal mental health locus of control factors than did American students. These results might be explained by very low internal consistency reliability estimates for the MHLCS as well as considerable intra-Asian variability on these subscales.

Regarding treatment seeking behavior, both student groups endorsed family help first, followed by psychological interventions, medical interventions, folk medicine interventions, and no treatment. As hypothesized Asian students were more willing to seek folk medicine alternatives than were American students, while American students were more likely to seek medical treatments than were Asian students. Given that both groups of students endorsed family care as a first option, perhaps family care should be considered a positive, firstline of defense should a family member develop mental illness as opposed to viewing it as a negative, culturally-specific preference, as reported by previous studies (Butcher et al., 1993; Lam & Kavanagh, 1996).

The pattern of intercorrelations among predictor variables is very complex, especially when examined separately for the two student samples. In general, however, for both student groups, negative beliefs about the qualities of the mentally ill were related to beliefs in supernatural causal factors. The results shown in Table 6-2 indicate that participants' cultural

differences are related to negative beliefs regarding the mentally ill as well as a tendency to make supernatural attributions in the cause of mental illness. These results are consistent with general expectations.

Several explanations exist for the failure to demonstrate the hypothesized difference between American and Asian students in beliefs about psychosocial causal variables and preference for psychological interventions. First, most of the Asian participants came to the United States after finishing college level education in their home countries where psychosocial theories of psychological disorder and the effectiveness of psychological interventions may have been provided. Further, Asian students who select study in the United States may be more familiar with western ideas than students remaining in their countries of origin. Second, most of the previous studies identifying Asians' beliefs, attributions, and attitudes toward psychological disorders and mental health were conducted with community samples (Bentelsparcher et al., 1994; Furnham & Andrew, 1996; Kawanishi, 1995; Ragurman et al., 1996; Lam & Kavanagh, 1996), while only college students were used in the current study. Community samples are much less likely to have the sophistications of Asian student samples who are primarily graduate students. Third, most of the previous research studies were conducted within one ethnic group sample (Benerjee & Benerjee, 1995; Bentelsparcher et al., 1994; Johnson & Orrell, 1995; Kawanishi, 1995; Lam & Kavanagh, 1996; Landrine & Klonoff, 1994; Ragurman et al., 1996; Wintersteen et al., 1996), while students from various Asian countries participated in the study. When one examines specific Asian subgroups, some of the hypothetical differences are found.

As indicated in Table 6-1, for example, Korean students were highly likely to relate a belief of dangerousness of the mentally ill to a belief in its incurability ($r = .886$, $\underline{p} < .000$), while Chinese and Indian students did not. Only Indian students significantly related the supernatural factor as a cause of psychological disorder to a belief in dangerousness. Only among Chinese students, did negative beliefs toward psychological disorders in general correlate with their preference for seeking no treatment. These findings suggest that there is considerable variability among Asian students, and thus, it likely to fail to demonstrate the hypotheses when all subcultures are combined. It is likely that more of the specific hypotheses would have been supported within some Asian subgroups had the sample size been large enough to detect between country differences.

Still less clear are the data in which beliefs about what it means to be mentally ill and attributions about causes of mental illness were used to predict treatment modality. In these analyses, for example, no hypothesized relationship existed between beliefs and attribution variables and choice of psychological treatment and family care. Inability to predict these latter two treatment options may reflect the general tendency of both groups of students to select both options quite frequently. The general acceptability of these options may preclude these predictors by the variables of interest. On the other hand, it was demonstrated that an internal mental health locus of control predicted the no treatment option and the supernatural factor predicted willingness of the folk medicine option beyond demographic and ethnic differences. The first of these makes good sense as individuals who believe they have personal control may well try to change things on their own. The latter relationship was expected because of cultural factors.

Americans who were likely to school in the importance of medical interventions endorsed the use of such interventions for the mentally ill. Asians who were likely to school in the importance of folk medicine remedies were more likely to endorse such options for individuals with mental illness. These findings are consistent with our expectations. The distinction between medical and psychological interventions is an important one when examining for cultural differences. Asian students believe that psychological treatments are viable options, and in this way, are no different from American students. When it comes to medical treatments, on the other hand, Asian students are much less willing than American students to endorse this option. It is interesting to note that the correlation between number of living years in the United States and preferences for the medical treatment options is low but positive. Acculturation apparently increases the likelihood of choosing medical intervention. An examination of the various individual difference variables that predict choice of medical treatment for both student samples is interesting. For American students medical interventions are chosen by individuals with negative beliefs about mental illness. For Asian students, choice of medical interventions is related to more positive beliefs. Thus, the presumed sophistication of American students who endorse medical interventions more frequently than Asian students seems illusory. American students seem to view medical treatments as punishment or as treatment of last resort, while Asians who endorse medical treatments seem to have a realistic perspective of their place in treating mental illness.

It is interesting to identify the features of individuals who go against the general pattern on group differences found in this study, i.e., American students who endorse folk medicine alternatives and Asian students who endorse medical treatment alternatives. American students who endorse folk medicine approaches tend to be males, tend to have an internal mental health locus of control and tend to believe supernatural factors cause mental illness. Asian student who endorse medical intervention options tend to have more positive beliefs about the mentally ill, are more likely to see them as safe and mental illness as curable. They are also less likely to believe mental illness is caused by supernatural factors than are their Asian counterparts. In other words, when American students select folk medicine options and when Asian students select western style medical treatments, they are also likely to endorse belief systems consistent with those choices.

Limitation and Recommendation

In the current study, there are several limitations. First, there were significant differences between the two samples on each of the demographic variables. The failure to match Asian and American students on demographic variables obscures our ability to interpret some of the results as demographic variables were found to have consistent relationships with both predictor and criterion variables. Second, because the results were obtained from Asian students from various subcultures, the conclusions are less likely to be generalizable to specific Asian subgroups. Finally, the current study did not use actual treatment-seeking behavior as the criterion, but administered self-report questionnaires to evaluate treatment seeking preferences. Although recent research studies support the use of self-report questionnaires to predict treatment-seeking behavior (Atkinson et al., 1995; Delphine & Rollck, 1995; Furnham & Andrew, 1996; Leong et al., 1996; Lippincott & Mierzwa, 1995), it is less clear that the prediction demonstrated in the

current study reflects participants' actual treatment-seeking behavior.

Because the results obtained from the current study are sample specific, the following is recommended for future study. Cross-validation should be conducted to further establish the reliability and validity of the developed measures. Once reliability and validity of the measures is further established, group comparisons would be conducted with both American and specific Asian samples. Comparison groups should be matched on demographic variables. Finally, individuals from individual Asian countries should be compared with both American samples and with each other to test for differences in the belief systems among these ethnic subgroups.

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Table 1
Comparisons of American and Asian students on demographic variables

Variables	Asian (N = 114)	American (N = 102)
Mean age	25.3 (SD = 5.10, n = 111)	19.6 (SD = 1.58, n = 102)
	$t(212) = 10.71$ ($p < .01$)	
Gender		
Male	85 (74.9 %)	45 (44.1 %)
Female	29 (25.4 %)	57 (55.9 %)
	$\chi_1^2 = 8.35$ ($p < .01$) *1	
Marital Status		
Single	86 (75.4 %)	102 (100 %)
Married	28 (25.4 %)	0
	$\chi_1^2 = 28.77$ ($p < .01$) *1	
Class year		
Freshman	10 (8.8 %)	32 (31.4 %)
Sophomore	8 (7.0 %)	26 (25.5 %)
Junior	6 (5.3 %)	26 (25.5 %)
Senior	12 (10.5 %)	17 (16.7 %)
Graduate	74 (64.9 %)	1 (1.0 %)
Language intensive	4 (3.5 %)	
	$\chi_1^2 = 105.28$ ($p < .01$) *1	

*1: The Pearson chi-square test

Table 2-1
Extracted factors and their factor loadings of the BPD for the combined group

	Items	Factor loadings
Factor 1: Dangerousness		
1.	A mentally ill person is more likely to harm others than a normal person.	.798
2.	Mental disorder would require a much longer period of time to be cured than would other general diseases.	.461
3.	It may be a good idea to stay away from people who have psychological disorder because their behavior is dangerous.	.694
6.	Mentally ill people are more likely to be criminals.	.684
13.	I am afraid of people who are suffering from psychological disorder because they may harm me.	.464
Factor 2: Untrustworthiness and Embarrassment		
4.	The term "Psychological disorder" makes me feel embarrassed.	.595
5.	A person with psychological disorder should have a job with minor responsibilities.	.696
8.	I am afraid of what my boss, friends and others would think if I were diagnosed as having a psychological disorder.	.519
11	.It might be difficult for mentally ill people to follow social rules such as being punctual or keeping promises.	.518
12.	I would be embarrassed if people knew that I dated a person who once received psychological treatment.	.612
14.	A person with psychological disorder is less likely to function well as a parent.	.396
15.	I would be embarrassed if a person in my family became mentally ill.	.392
19.	Mentally ill people are unlikely to be able to live by themselves because they are unable to assume responsibilities.	.544
20.	Most people would not knowingly be friends with a mentally ill person.	.625
24.	I would not trust the work of a mentally ill person assigned to my work team.	.461
Factor 3: Incurability		
7.	Psychological disorder is recurrent.	.642
9.	Individuals diagnosed as mentally ill will suffer from its symptoms throughout their life.	.799
10.	People who have once received psychological treatment are likely to need further treatment in the future.	.740
18.	I do not believe that psychological disorder is ever completely cured.	.719
21.	The behavior of people who have psychological disorders is unpredictable.	.465
22.	Psychological disorder is unlikely to be cured regardless of treatment.	.592

Table 2-2
Extracted factors and their factor loadings of the ACPD for the combined group

	Items	Factor loadings
Factor 1: Psychosocial		
1.	A pattern of imagining the worse when any little thing goes wrong can lead to mental disorder.	.418
2.	Interpersonal conflict in school, at home or at work may cause psychological disorder.	.591
4.	A pattern of failing to engage in activities that are enjoyable can produce mental disorder.	.428
5.	Conflicts with one's parents in childhood may influence the development of mental disorder.	.607
7.	Stressful life circumstances (e.g., having an unsupportive family, being socially isolated, living in poverty, being physically handicapped, discrimination etc.) can cause psychological disorder.	.719
9.	Using poor problem-solving strategies when faced with stressful events can produce psychological disorder.	.614
11.	A pattern of blaming yourself for problems can cause psychological disorder.	.619
13.	Stressful life events (e.g., moving, death of family member, divorce etc.) may contribute to the development of mental illness.	.680
14.	Deficits in social skills may cause psychological disorder.	.661
16.	A pattern of negative interpretations of stressful events may be responsible for development of psychological disorder.	.717
17.	Traumatic life events (e.g., natural disasters, accidents, etc.) can cause psychological disorder.	.571
18.	A pattern of negative interactions with people may produce mental disorder.	.723
Factor 2: Supernatural		
3.	The position of planets, weather, wind and other natural phenomena can contribute to psychological disorder.	.601
6.	Psychological disorder can be a product of punishment from one's ancestors or Gods.	.604
8.	You are either destined to become mentally ill or you are not.	.458
10.	A person's sinful thoughts or acts, lack of religious faith, or lack of moral life may cause mental illness.	.648
12.	Being cursed by people you offended can cause mental illness.	.700
15.	Evil sprits, hexes and animal spirits can cause mental disorder.	.741

Table 2-3
Extracted factors and their factor loadings of the MHLCS for the combined group

	Items	Factor loadings
Factor 1: Internal		
1.	If I take care of myself, I can avoid psychological disorder.	.628
2.	If I become mentally ill, it is because of something I have done or not done.	.703
8.	If I became mentally ill, it would be because I had not been getting the proper exercise or eating right.	.390
10.	People's mental illness results from their own carelessness.	.677
11.	I am directly responsible for my mental health.	.732
Factor 2: External		
3.	Good mental health is largely a matter of good fortune.	.598
4.	No matter what I do, if I am going to be mentally ill, I will get mentally ill.	.627
5.	Most people do not realize the extent to which their mental illness is controlled by accidental happenings.	.368
6.	I can only do what I am told to do in order to keep good mental health.	.592
7.	There are so many strange mental disorders around that you can never know how or when you might pick one up.	.492
9.	People who never get mentally ill are just plain lucky.	.676

Table 2-4
Extracted factors and their factor loadings of the TSB for the combined group

	Items	Factor loadings
Factor 1: No treatment		
1.	If I thought I had a psychological disorder, I would rely on my own resources for help.	.736
11.	If I thought I had a psychological disorder, I would simply wait for it to get better.	.726
15.	If I thought I had a psychological disorder, I would be tolerant without treatment.	.763
Factor 2: Folk Medicine and Religious healer		
2.	If I thought I had a psychological disorder, I would seek acupuncture and other types of folk medicine provided by folk medicine practitioners.	.795
7.	If I thought I had a psychological disorder, I would take natural herbal medicines prescribed by specialists.	.659
8.	If I thought I had a psychological disorder, I would visit a holy place (e.g., church, temple etc.), have a holy person perform rituals, or do other holy activities.	.689
12.	If I thought I had a psychological disorder, I would seek opportunities to do meditation, Taich, Qigong, or similar activities.	.655
Factor 3: Psychosocial		
3.	If I thought I had a psychological disorder, I would consult with a psychologist to explore my stressful life events, patterns of emotional reactions, fears, internal conflicts and other factors.	.557
10.	If I thought I had a psychological disorder, I would seek treatment at a mental health facility.	.667
14.	If I thought I had a psychological disorder, I would seek opportunities to receive psychotherapy.	.881
Factor 4: Medical treatment		
4.	If I thought I had a psychological disorder, I would seek medical treatment such as pharmacological (i.e., drug) treatments.	.868
16.	If I thought I had a psychological disorder, I would take medicine prescribed by a medical specialist.	.860
Factor 5: Family Care		
6.	If I thought I had a psychological disorder, I would seek care within my family.	.929
9.	If I thought I had a psychological disorder, I would seek help from my family.	.926

Table 3
Reliability estimates of total scores and factors analyzed subscales of the BPD, ACPD, MHLCS, and TSB

Factors	Cronbach		
	All	Asian	American
BPD (all items)	0.91 (n = 210)	0.91	0.89
MHLCS (all items, external direction)	0.35 (n = 213)	0.28	0.49
BPD subscales			
factor 1: Dangerous	0.75 (n = 216)	0.80	0.77
factor 2: Untrustworthy and embarrassing	0.84 (n = 214)	0.82	0.74
factor 3: Incurable	0.82 (n = 211)	0.81	0.85
ACPD subscales			
factor 1: Psychosocial	0.85 (n = 213)	0.79	0.89
factor 2: Supernatural	0.72 (n = 212)	0.70	0.73
MHLCS subscales			
factor 1: Internal	0.68 (n = 214)	0.54	0.76
factor 2: External	0.62 (n = 214)	0.59	0.67
TSB subscales			
factor 1: No treatment	0.65 (n = 215)	0.56	0.73
factor 2: Folk medicine	0.70 (n = 215)	0.68	0.69
factor 3: Psychological treatment	0.72 (n = 216)	0.77	0.69
factor 4: Medical treatment	0.82 (n = 216)	0.84	0.78
factor 5: Family care	0.86 (n = 216)	0.79	0.92

Table 4-1
Item total correlations of the BPD

	All	Asian	American
BPD subscales			
Factor 1: Dangerous			
BPD1	.591**	.629**	.555**
BPD2	.468**	.451**	.782**
BPD3.	.715**	.728**	.771**
BPD6.	.514**	.506**	.726**
BPD13	.567**	.593**	.779**
Factor 2: Untrustworthy and embarrassing			
BPD4	.492**	.530**	.233**
BPD5	.633**	.652**	.452**
BPD8	.223**	.337**	.150
BPD11	.577**	.551**	.574**
BPD12	.572**	.503**	.590**
BPD14	.539**	.477**	.550**
BPD15	.543**	.489**	.481**
BPD19	.647**	.557**	.591**
BPD20	.480**	.445**	.338**
BPD24	.611**	.569**	.513**
Factor 3: Incurable			
BPD7	.523**	.474**	.577**
BPD9	.618**	.639**	.615**
BPD10	.580**	.510**	.664**
BPD18	.666**	.635**	.726**
BPD21	.534**	.528**	.534**
BPD22	.637**	.616**	.663**

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

Table 4-2
Item total correlations of the ACPD

	All	Asian	American
ACPD subscales			
Factor 1: Psychosocial			
ACPD1	.396**	.407**	.397**
ACPD2	.561**	.540**	.598**
ACPD4	.408**	.335**	.472**
ACPD5	.454**	.368**	.570**
ACPD7	.566**	.410**	.713**
ACPD9	.552**	.522**	.613**
ACPD11	.537**	.391**	.694**
ACPD13	.554**	.403**	.683**
ACPD14	.590**	.533**	.658**
ACPD16	.623**	.497**	.724**
ACPD17	.411**	.266**	.568**
ACPD18	.667**	.647**	.697**
Factor 2: Supernatural			
ACPD3	.483**	.448**	.477**
ACPD6	.439**	.458**	.376**
ACPD8	.312**	.385**	.296**
ACPD10	.462**	.423**	.431**
ACPD12	.499**	.408**	.580**
ACPD15	.562**	.461**	.676**

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

Table 4-3
Item total correlations of the MHLCS

	All	Asian	American
MHLCS subscales			
Factor 1: Internal			
MHLCS1	.416**	.255**	.550**
MHLCS2	.507**	.415**	.546**
MHLCS8	.326**	.188**	.495**
MHLCS10	.508**	.349**	.619**
MHLCS11	.410**	.330**	.447**
Factor 2: External			
MHLCS3	.423**	.341**	.483**
MHLCS4	.281**	.274**	.321**
MHLCS5	.263**	.177	.309**
MHLCS6	.300**	.332**	.383**
MHLCS7	.416**	.390**	.438**
MHLCS9	.460**	.473**	.441**

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

Table 4-4
Item total correlations of the TSB

	All	Asian	American
TSB subscales			
Factor 1: No treatment			
TSB1	.430**	.320**	.537**
TSB11	.515**	.434**	.603**
TSB15	.452**	.373**	.553**
Factor 2: Folk medicine			
TSB2	.512**	.388**	.592**
TSB7	.527**	.585**	.444**
TSB8	.409**	.415**	.380**
TSB12	.529**	.504**	.501**
Factor 3: Psychological treatment			
TSB3	.563**	.616**	.549**
TSB10	.533**	.576**	.480**
TSB14	.560**	.639**	.525**
Factor 4: Medical treatment			
TSB4&16	.694**	.720**	.633**
Factor 5: Family care			
TSB6&9	.761**	.656**	.859**

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

Table 5
Comparisons of American and Asian students on all measures

Factors	Asians' Mean	Americans' Mean	F	p	
BPD	56.1 (SD = 19.2, n = 112)	43.1(SD = 15.3, n = 98)	28.7	.000	
MHLCS (external)	27.7 (SD = 5.4, n = 112)	26.5(SD = 5.3, n = 101)	.081	.777	
BPD factors					
Dangerousness	12.6 (SD = 5.04, n = 114)	10.1 (SD = 4.53, n = 102)	13.4	.000	
Untrustworthiness	24.6 (SD = 9.07, n = 113)	16.7 (SD = 7.09, n = 101)	48.9	.000	
Incurability	15.0 (SD = 5.76, n = 112)	13.9 (SD = 5.50, n = 99)	2.05	.154	
ACPD factors					
Psychosocial	36.8 (SD = 8.07, n = 112)	36.7 (SD = 9.86, n = 101)	.015	.903	
Supernatural	7.33 (SD = 5.50, n = 110)	4.44 (SD = 4.58, n = 102)	17.1	.000	
MHLCS factors					
Internal	11.8 (SD = 4.00, n = 113)	9.44 (SD = 4.48, n = 101)	16.6	.000	
External	12.1 (SD = 4.94, n = 112)	9.73 (SD = 4.74, n = 102)	12.9	.000	
TSB factors					
No Treatment	5.45 (SD = 2.93, n = 113)	4.68 (SD = 3.26, n = 102)	3.37	.068	
Folk & Religious	9.52 (SD = 4.16, n = 113)	7.11 (SD = 4.35, n = 102)	17.3	.000	
Psychological	10.6 (SD = 3.19, n = 114)	10.3 (SD = 2.95, n = 102)	.428	.514	
Medical	5.86 (SD = 2.77, n = 114)	6.75 (SD = 2.26, n = 102)	6.51	.011	
Family Care	7.82 (SD = 2.08, n = 114)	8.02 (SD = 2.41, n = 102)	.442	.507	

Table 6-1
Correlations between the predictor and criterion variables

All participants

	DR	UE	IC	PS	SN	IL	EL	NT	FM	PT	MT	FC
DR		.662**	.550**	.197**	.367**	.349**	.315**	.168*	.211**	.032	-.092	-.038
UE			.513**	.136*	.366**	.433**	.364**	.244**	.272**	.034	-.087	-.052
IC				.079	.225**	.291*	.265**	.129	.126	-.088	-.050	.043
PS					.263**	.225*	.186**	-.077	-.117	.025	-.061	-.073
SN						.440*	.439**	.198**	.344**	-.103	-.166*	-.055
IL							.314**	.357**	.234**	-.124	-.051	-.014
EL								.155*	.151*	-.029	-.074	-.105
NT									.105	-.376**	-.251**	-.115
FM										.109	.136*	.225**
PT											.481**	.134*
MT												.121

All Asians

	DR	UE	IC	PS	SN	IL	EL	NT	FM	PT	MT	FC
DR		.630**	.561**	.174	.347**	.183	.252**	.152	.158	-.010	-.232*	-.084
UE			.568**	.159	.313**	.315**	.266**	.130	.187*	.027	-.150	-.032
IC				.139	.283**	.252**	.316**	.142	.100	-.111	-.209*	-.021
PS					.448**	.243**	.365**	-.009	-.111	-.062	-.138	-.113
SN						.381**	.475**	.089	.145	-.131	-.257**	-.134
IL							.296**	.167	-.030	-.158	-.082	-.062
EL								.007	.091	.052	-.127	-.169
NT									-.161	-.362**	-.259**	-.155
FM										.288**	.256**	.230*
PT											.526**	.086
MT												.183

All Americans

	DR	UE	IC	PS	SN	IL	EL	NT	FM	PT	MT	FC
DR		.657**	.522**	.232*	.293**	.441**	.297**	.135	.152	.064	.220*	.031
UE			.467**	.136	.247*	.443**	.351**	.314**	.173	.014	.250*	-.024
IC				.022	.110	.305**	.166	.095	.109	.115	.220*	.117
PS					.090	.216*	.027	-.008	-.137	.110	.023	-.042
SN						.424**	.305**	.274**	.474**	-.101	.077	.059
IL							.235*	.482**	.369**	-.121	.096	.049
EL								.248*	.091	-.150	.102	-.026
NT									.299**	-.414**	-.211*	-.071
FM										-.115	.114	.263**
PT											.456**	.191
MT												.037

DR: Danger; UE: Untrustworthy & Embarrassing; IC: Incurability; PS: Psychosocial; SN: Supernatural; IL: Internal; EL: External; NT: No Treatment; FM: Folk Medicine; PT: Psychological; MT: Medication; FC: Family Care.
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Chinese

	DR	UE	IC	PS	SN	IL	EL	NT	FM	PT	MT	FC
DR		.613**	.330	-.037	.166	-.069	.187	.408*	.248	-.039	-.232	-.053
UE			.660**	.007	.315	.114	.197	.581**	.078	-.160	-.479**	.069
IC				-.208	.085	-.006	.114	.330	.102	-.244	-.378*	-.008
PS					.508**	.439	.468*	.233	-.435*	-.176	-.272	-.136
SN						.428*	.405*	.148	-.260	-.305	-.520**	.088
IL							.382*	.110	-.484**	-.350	-.143	.087
EL								.094	-.131	-.071	-.183	.067
NT									-.245	-.447*	-.560**	.101
FM										.521*	.430*	.097
PT											.612**	-.120
MT												-.151

Indian

	DR	UE	IC	PS	SN	IL	EL	NT	FM	PT	MT	FC
DR		.494*	.040	.408	.495*	.261	.220	.415	-.035	-.387	-.666**	-.396
UE			.538**	.128	.346	.488*	.484*	-.005	.035	-.153	-.313	-.158
IC				.067	.172	.121	.477*	-.118	.038	.021	-.075	-.107
PS					.269	.103	.441*	.124	-.018	-.134	-.291	-.147
SN						.209	.204	.423	-.011	-.637**	-.668**	-.420
IL							.256	.095	.191	.039	.070	.198
EL								-.171	-.002	-.055	-.160	-.198
NT									.181	-.210	-.150	-.505*
FM										.074	.112	.426*
PT											.714**	.499*
MT												.424*

South Korean

	DR	UE	IC	PS	SN	IL	EL	NT	FM	PT	MT	FC
DR		.651**	.886**	.380	.243	.676**	.296	-.171	.321	-.089	-.124	-.290
UE			.618*	.187	-.056	.480	.218	.196	.193	-.092	-.092	-.398
IC				.513*	.135	.621**	.242	-.343	.373	-.093	-.182	-.069
PS					.516*	.162	.623**	-.510*	.246	-.130	.202	.109
SN						.270	.772**	-.529*	.439	.013	.215	-.201
IL							.197	-.271	-.033	-.024	-.169	-.545*
EL								-.477	.478	.079	.367	-.287
NT									-.545*	-.196	-.228	-.065
FM										-.010	.146	.144
PT											.676**	-.377
MT												-.110

DR: Danger; UE: Untrustworthy & Embarrassing; IC: Incurability; PS: Psychosocial; SN: Supernatural; IL: Internal; EL: External; NT: No Treatment; FM: Folk Medicine; PT: Psychological; MT: Medication; FC: Family Care.

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

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

Table 6-2
Correlations between demographic variables and the predictor and criterion variables

All participants

	Age	Male	Married	Class year	Ethnicity
DR	.122	.233**	.174*	.079	.243**
UE	.343**	.350**	.312**	.303**	.433**
IC	.066	.013	.052	.081	.099
PS	-.048	.006	-.038	-.067	.008
SN	.136*	.122	.163*	.139	.275**
IL	.169*	.257**	.031	.183**	.269**
EL	.209**	.097	.166*	.147	.239**
NT	.121	.375**	-.002	.151	.125
FM	.171*	.192**	.300**	.153	.274**
PT	.111	-.133	.123	.069	.045
MT	-.148*	-.004	-.036	-.124	-.172*
FC	-.111	.014	-.034	.023	-.045

All Asians

	Age	Male	Married	Class year	Year of Residence
DR	-.001	.117	.124	-.062	-.176
UE	.184	.209*	.227*	.164	-.106
IC	.028	-.129	.023	.065	.045
PS	-.111	.037	-.068	-.159	-.089
SN	-.061	-.129	.092	-.013	-.197*
IL	.025	-.034	-.110	.055	-.142
EL	.120	-.144	.116	.025	-.110
NT	.054	.321**	-.075	.102	-.004
FM	.028	-.126	.314**	.023	-.023
PT	.205*	-.115	.152	.112	-.018
MT	-.003	.036	.036	.084	.136
FC	-.121	.035	-.028	.121	-.174

All Americans (without one graduate student)

	Age	Male	Married	Class year
DR	-.038	.262**	--	-.109
UE	-.069	.330**	--	-.131
IC	-.056	.086	--	-.033
PS	.019	-.019	--	-.001
SN	.062	.232*	--	-.066
IL	.040	.390**	--	.018
EL	.044	.187	--	-.025
NT	.049	.373**	--	.043
FM	-.079	.334**	--	-.131
PT	-.018	-.172	--	.048
MT	-.183	.113	--	-.139
FC	-.150	.026	--	-.013

DR: Danger; UE: Untrustworthy & Embarrassing; IC: Incurability; PS: Psychosocial; SN: Supernatural; IL: Internal; EL: External; NT: No Treatment; FM: Folk Medicine; PT: Psychological; MT: Medication; FC: Family Care;
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).
Note: No language intensive course students were included.

Table 7-1
Regression Analyses predicting differences on predictor and criterion variables from cultural differences controlling for gender variable

Criterion	Predictor	B	R^2 change	F change	sig.
		All participants			
BPD total (n = 210)	Gender *1	7.32	.080	F(1,208) = 18.113	p <.01
	Ethnicity	10.69	.074	F(1,207) = 18.122	p <.01
BPD factors					
Danger (n = 215)	Gender *1	1.75	.054	F(1,214) = 12.239	p <.01
	Ethnicity	1.86	.032	F(1,213) = 7.492	p <.01
Untrustworthiness (n = 213)	Gender *1	4.40	.122	F(1,212) = 29.541	p <.01
	Ethnicity	6.50	.116	F(1,211) = 32.078	p <.01
ACPD factor					
Supernatural (n = 212)	Ethnicity *2	2.75	.075	F(1,210) = 17.144	p <.01
MHLCS factor					
Internal	Gender *1	1.70	.066	F(1,212) = 15.053	p <.01
	Ethnicity	1.82	.039	F(1,211) = 9.12	p <.01
External	Ethnicity *2	2.31	.048	F(1,211) = 10.808	p <.01
TSB factors					
Folk medicine (n = 214)	Gender *1	1.06	.037	F(1,213) = 8.194	p <.01
	Ethnicity	2.09	.050	F(1,212) = 11.706	p <.01
Medical treatment (n = 216)	Ethnicity *2	-.973	.030	F(1,213) = 7.087	p <.01
		Asian participants			
Supernatural (n = 98)	Acculturation Level	-3.80	.023	F(1,96) = 5.306	p < .05
Internal MHLCS (n=100)	Acculturation Level	-2.76	.049	F (1,98) = 5.072	p < .05

*1: Gender indicates being male, ethnicity indicates Asian group.
*2: Gender has no effect
Note: Criterion variables which were not predicted by any predictor variables were not reported.

Table 7-2
Stepwise regression Analyses predicting treatment choice from developed predictors

Criterion	Predictor	B	R^2 change	F change	sig.
		All participants			
No treatment (n = 208)	Internal MHLC	.253	.129	F(1,206) = 30.587	p< .01
Folk medicine (n = 207)	Supernatural Cause	.238	.116	F(1,205) = 26.944	p< .01
	Untrustworthiness	7.49E-02	.020	F(1,204) = 4.648	p< .05
Medical treatment (n = 212)	Supernatural Cause	-8.14E-02	.028	F(1,210) = 5.985	p < .05
		All Asian participants			
Folk medicine (n = 112)	Untrustworthiness	.407	.035	F(1,110) = 3.984	p < .05
Medical treatment (n = 109)	Supernatural Cause	-.128	.065	F(1,107) = 7.400	p < .01
		American participants			
No treatment (n = 100)	Internal MHLC	.350	.234	F(1,98) = 29.956	p < .01
Folk medicine (n = 101)	Supernatural Cause	.367	.224	F(1,99 = 28.518	p < .01
	Internal MHLC	.201	.035	F(1,98) = 4.593	p < .05
Medical treatment (n = 98)	Untrustworthiness	8.73E-02	.078	F(1,96) = 8.078	p < .01

Note: Criterion variables which were not predicted by any predictor variables were not reported.

Table 7-3
Stepwise regression Analyses predicting treatment choice from developed predictors controlling for gender and ethnicity variables

Criterion	Predictor	B	R^2 change	F change	sig.
		All participants			
No treatment (n = 208)	Gender & ethnicity *1		.140	F(2,205) = 17.735	p < .01
	Internal MHLC	.203	.075	F(1,204) = 19.413	p < .01
Folk medicine (n = 207)	Gender & ethnicity *1		.088	F(2, 207) = 9.966	p < .01
	Supernatural Cause	.242	.076	F(1, 206) = 18.600	p < .01
Medical treatment (n = 212)	Gender & ethnicity *1		.032	F(2.209) = 3.479	p < .05
		All Asian participants			
		No predictions			
		American participants			
No treatment (n = 101)	Gender *1	1.459	.141	F(1,99) = 16.279	p < .01
	Internal MHLC	.287	.135	F(1,97) = 18.247	p < .01
Folk medicine (n = 101)	Gender *1	2.093	.114	F(1,100) = 12.912	p < .01
	Supernatural	.397	.165	F(1,99) = 22.674	p < .01

*1: Gender indicates being male, ethnicity indicates Asian group
Note: Criterion variables which were not predicted by any predictor variables were not reported.

Appendix A

Questionnaire 1

Using the scale below, please indicate the level of your agreement with the following items by choosing the number that most closely corresponds with your beliefs.

0 = completely disagree
1 = mostly disagree
2 = slightly disagree
3 = slightly agree
4 = mostly agree
5 = completely agree.

⓪①②③④⑤	1.	A mentally ill person is more likely to harm others than a normal person.
⓪①②③④⑤	2.	Mental disorder would require a much longer period of time to be cured than would other general diseases.
⓪①②③④⑤	3.	It may be a good idea to stay away from people who have psychological disorder because their behavior is dangerous.
⓪①②③④⑤	4.	The term “Psychological disorder” makes me feel embarrassed.
⓪①②③④⑤	5.	A person with psychological disorder should have a job with minor responsibilities.
⓪①②③④⑤	6.	Mentally ill people are more likely to be criminals.
⓪①②③④⑤	7.	Psychological disorder is recurrent.
⓪①②③④⑤	8.	I am afraid of what my boss, friends and others would think if I were diagnosed as having a psychological disorder.
⓪①②③④⑤	9.	Individuals diagnosed as mentally ill will suffer from its symptoms throughout their life.
⓪①②③④⑤	10.	People who have once received psychological treatment are likely to need further treatment in the future.
⓪①②③④⑤	11.	It might be difficult for mentally ill people to follow social rules such as being punctual or keeping promises.
⓪①②③④⑤	12.	I would be embarrassed if people knew that I dated a person who once received psychological treatment.
⓪①②③④⑤	13.	I am afraid of people who are suffering from psychological disorder because they may harm me.
⓪①②③④⑤	14.	A person with psychological disorder is less likely to function well as a parent.
⓪①②③④⑤	15.	I would be embarrassed if a person in my family became mentally ill.

⓪①②③④⑤	16.	People who have received treatment for a mental illness should not marry and have children.
⓪①②③④⑤	17.	Mentally ill people are likely to be dangerous regardless of their diagnoses.
⓪①②③④⑤	18.	I do not believe that psychological disorder is ever completely cured.
⓪①②③④⑤	19.	Mentally ill people are unlikely to be able to live by themselves because they are unable to assume responsibilities.
⓪①②③④⑤	20.	Most people would not knowingly be friends with a mentally ill person.
⓪①②③④⑤	21.	The behavior of people who have psychological disorders is unpredictable.
⓪①②③④⑤	22.	Psychological disorder is unlikely to be cured regardless of treatment.
⓪①②③④⑤	23.	Even if I had a psychological disorder, I would avoid having treatment because I am ashamed of it.
⓪①②③④⑤	24.	I would not trust the work of a mentally ill person assigned to my work team.

Appendix B

Questionnaire 2

Using the scale below, please indicate the level of your agreement with the following statements by choosing the number that most closely corresponds to your beliefs.

0 = completely disagree
1 = mostly disagree
2 = slightly disagree
3 = slightly agree
4 = mostly agree
5 = completely agree.

1. A pattern of imagining the worse when any little thing goes wrong can lead to mental disorder. _____

2. Interpersonal conflict in school, at home or at work may cause psychological disorder. _____

3. The position of planets, weather, wind and other natural phenomena can contribute to psychological disorder. _____

4. A pattern of failing to engage in activities that are enjoyable can produce mental disorder. _____

5. Conflicts with one's parents in childhood may influence the development of mental disorder. _____

6. Psychological disorder can be a product of punishment from one's ancestors or Gods. _____

7. Stressful life circumstances (e.g., having an unsupportive family, being socially isolated, living in poverty, being physically handicapped, discrimination etc.) can cause psychological disorder. _____

8. You are either destined to become mentally ill or you are not. _____

9. Using poor problem-solving strategies when faced with stressful events can produce psychological disorder. _____

10. A person's sinful thoughts or acts, lack of religious faith, or lack of moral life may cause mental illness. _____

11. A pattern of blaming yourself for problems can cause psychological disorder.

_____

12. Being cursed by people you offended can cause mental illness.

_____

13. Stressful life events (e.g., moving, death of family member, divorce etc.) may contribute to the development of mental illness.

_____

14. Deficits in social skills may cause psychological disorder.

_____

15. Evil sprits, hexes and animal spirits can cause mental disorder.

_____

16. A pattern of negative interpretations of stressful events may be responsible for development of psychological disorder.

_____

17. Traumatic life events (e.g., natural disasters, accidents, etc.) can cause psychological disorder.

_____

18. A pattern of negative interactions with people may produce mental disorder.

_____

Appendix C

Questionnaire 3

Using the scale below, please indicate the level of your agreement with the following items by choosing the number that best corresponds with your beliefs.

1. If I take care of myself, I can avoid psychological disorder.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

2. If I become mentally ill, it is because of something I have done or not done.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

3. Good mental health is largely a matter of good fortune.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

4. No matter what I do, if I am going to be mentally ill, I will get mentally ill.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

5. Most people do not realize the extent to which their mental illness is controlled by accidental happenings.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

6. I can only do what I am told to do in order to keep good mental health.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

7. There are so many strange mental disorders around that you can never know how or when you might pick one up.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

8. If I became mentally ill, it would be because I had not been getting the proper exercise or eating right.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

9. People who never get mentally ill are just plain lucky.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

10. People's mental illness results from their own carelessness.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

11. I am directly responsible for my mental health.

0	**1**	**2**	**3**	**4**	**5**
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

Appendix D

QUESTIONNAIRE 4

Using the scale below, please indicate the level of your agreement with the following items by choosing the number that best corresponds with your beliefs.

0 = completely disagree
1 = mostly disagree
2 = slightly disagree
3 = slightly agree
4 = mostly agree
5 = completely agree.

⓪①②③④⑤ 1. If I thought I had a psychological disorder, I would rely on my own resources for help.

⓪①②③④⑤ 2. If I thought I had a psychological disorder, I would seek acupuncture and other types of folk medicine provided by folk medicine practitioners.

⓪①②③④⑤ 3. If I thought I had a psychological disorder, I would consult with a psychologist to explore my stressful life events, patterns of emotional reactions, fears, internal conflicts and other factors.

⓪①②③④⑤ 4. If I thought I had a psychological disorder, I would seek medical treatment such as pharmacological (i.e., drug) treatments.

⓪①②③④⑤ 5. If I thought I had a psychological disorder, I would seek to learn behavioral coping strategies such as muscle relaxation and breathing techniques.

⓪①②③④⑤ 6. If I thought I had a psychological disorder, I would seek care within my family.

⓪①②③④⑤ 7. If I thought I had a psychological disorder, I would take natural herbal medicines prescribed by specialists.

⓪①②③④⑤ 8. If I thought I had a psychological disorder, I would visit a holy place (e.g., church, temple etc.), have a holy person perform rituals, or do other holy activities.

⓪①②③④⑤ 9. If I thought I had a psychological disorder, I would seek help from my family.

⓪①②③④⑤ 10. If I thought I had a psychological disorder, I would seek treatment at a mental health facility.

⓪①②③④⑤ 11. If I thought I had a psychological disorder, I would simply wait for it to get better.

⓪①②③④⑤ 12. If I thought I had a psychological disorder, I would seek opportunities to do meditation, Taich, Qigong, or similar activities.

⓪①②③④⑤ 13. If I thought I had a psychological disorder, I would seek medical treatment such as electrical convulsive shock therapy.

⓪①②③④⑤ 14. If I thought I had a psychological disorder, I would seek opportunities to receive psychotherapy.

⓪①②③④⑤ 15. If I thought I had a psychological disorder, I would be tolerant without treatment.

⓪①②③④⑤ 16. If I thought I had a psychological disorder, I would take medicine prescribed by a medical specialist.

Appendix E

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants of Investigative Projects

Title of Project: A cross-cultural comparison of factors related to help-seeking attitudes for psychological disorder

Investigator: Michiyo Hirai, B.S.
Advisor: George A. Clum, Ph.D.

I. Purpose of This Research

Asian students' concept of mental illness, causal attribution of psychological disorder and levels of mental health locus of control will be compared with those of American students. In addition, the possible reasons explaining the low rate of Asian people's psychological treatment utilization will be explored.

II. Procedures

If you are the Asian participants, you are required to complete five questionnaires and are allowed to used dictionaries. If you are the American participants, you are required to complete four questionnaires. All of you are required to complete the questionnaires in the same order honestly. You can request a copy of the results of this study after this study is done.

III. Risks

There are minimal risks in this study. Although it is unlikely, completing the questionnaires may cause some distress. It is also possible that that the results which you can receive if you request to send them to you will be distressing to you.

IV. Benefits

The benefits of this study are that you may obtain 1) recognition of your own beliefs and attitudes towards psychological disorder and treatment strategies 2) expanded knowledge about cultural differences and similarities of ideas of psychological disorder and treatment strategies, 3) opportunities to recognize possible psychological disorder. These benefits, however, are not guaranteed in any way.

V. Extent of Confidentiality and Anonymity

All personal information given in this study will be kept confidential and separate from the actual questionnaires completed. You will be assigned a subject number to help us ensure your

confidentiality and all information relating your subject number and personal information will be kept in a locked file that only the researcher and the advisor will be able to access. No information will be shared orally or in writing with anyone but the researcher and the advisor. All information connecting you to this study will be destroyed after three years.

VI. Compensation

You could win a prize if you complete all questionnaires of this study. The prize includes $100 for 2 participants, $50 for 4 participants, and $10 for 10 participants. You will be notified your compensation after all data are collected.

VII. Freedom to Withdraw

You are free to withdraw the study at any time for any reason without penalty. Also, you may choose not to answer or participate in any part of the project without penalty.

VIII. Approval of Research

This research project has been approved, as required by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University and the Department of Psychology.

IX. Subject Responsibilities

I voluntarily agree to participate in this project. I have the following responsibilities: to answer the questionnaires given to me.

X. Subjects Permission

I have read and understand the Informed Consent and the conditions of this project, I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

signed _____ date _____

Should you any questions regarding this research or its conduct, you may contact:

Investigator:	Michiyo Hirai, B.S.	Phone: 951-3435
Advisor:	George A. Clum, Ph.D.	Phone: 231-5701
Chair, Human Subjects Committee:	Robert J. Harvey, Ph.D.	Phone: 231-7030
Chair, IRB research Division:	H. Thomas Hurd, Ph.D.	Phone: 231-5281
Psychology Department Main Office:		Phone: 231-6581

Appendix F

Identifying Information

For research purposes only. All information will be kept strictly confidential.

1. **Name:**_____

2. **SS or ID Number:** _____ - _____ - _____

3. **Address in the USA:** _____

4. **Date form completed:** _____ / _____ / _____

5. **Age:** _____

6. **Daytime Phone:** ( ) _____ - _____

7. **Evening Phone:** ( ) _____ - _____

8. **Email:**_____

9. **Sex (Circle One) :** 1. Male 2. Female

10. **Marital Status (Circle One) :** 1. Single 2. Married

11. **Race (Circle One) :** 1. Caucasian 2. African American 3. Hispanic
4. Asian 5. Pacific Islander 6. Other

12. **Nationality:**_____

13. **Primary Language:**_____

14. **Classification in college (Circle One) :** 1. Freshman 2. Sophomore
3. Junior 4. Senior
5. Graduate (Year:)

15. **Your major field of study:**_____

16. **Years of residence in the USA:**_____

CURRICULUM VITAE

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PERSONAL

Born	April 3, 1964 Tokyo, Japan

EDUCATION

Fall 1996-present	Candidate, Master of Science, May 1999 Clinical Psychology Virginia Polytechnic Institute & State University
April 1995-March 1996	Psychology, none degree University of the Air, Tokyo, Japan
April 1985-March 1989	Bachelor of Science Physics Keio University, Tokyo, Japan

HONOR AND AWARDS

April 1998	Grant from Graduate Diversity Research Mentioning Program

CLINICAL EXPERIENCE

Fall 1998-present	Practicum at the Psychological Services Center at Virginia Tech
Summer 1998	Summer practicum at the PSC
Fall 1997-Spring 1998	Member of the child assessment team at the PSC
Fall 1997-Spring 1998	Practicum at the PSC
Fall 1996-Spring 1997	Practicum at the PSC

RESEARCH EXPERIENCE

THESIS

Spring 1997- present	A cross-cultural comparison of factors related to help-seeking attitudes for psychological disorder

RESEARCH ACTIVITIES

Fall 1998-present	Psychosocial factors for suicidal behavior Data analyses
Fall 1998-present	On-line Assessment for Panic Attack Proposing ideas for contents and system integration Helping to find system developers
Fall 1997-Fall 1998	Reliability and validity studies for the Comprehensive Panic Profile Data analyses for all inventories in the CPP Presentation of the reliability and validity study for the panic coping inventory at the departmental conference in 1998
Fall 1996-present	Meta-analysis of Bibliotherapy for Panic Attack Searching relevant articles

CONFERENCE

November 1999	Annual meeting of the Association for the Advancement of Behavior Therapy, Toronto, Canada Poster presentation (submitted) Michiyo Hirai & George A. Clum. A cross-cultural comparison of factors related to help-seeking attitudes for psychological disorder
March 1999	Annual meeting of the South Eastern Psychological Association, Savannah, GA. Poster presentation Michiyo Hirai & George A. Clum. A cross-cultural comparison of factors related to help-seeking attitudes for psychological disorder Symposium presentation Michiyo Hirai & George A. Clum. On-line Assessment for Panic Attack
April 1998	Virginia Tech Psychology Conference

Poster Presentation
Bill Nelson, Michiyo Hirai, & George A. Clum
Reliability and validity studies for the Comprehensive Panic Profile

PAPER SUBMITTED

Fall 1998 — Reliability and validity studies for the Comprehensive Panic Profile (co-author)

TEACHING EXPERIENCE

Fall 1998-Spring 1999 — Teaching assistant for Introductory Psychology Recitation at Virginia Tech

1995- 1996. — Assistant teacher for emotionally disturbed children
Kanagawa Kyouiku Center (Kanagawa Education Center)
Kanagawa, Japan

OTHER EXPERIENCE

Spring 1999 — Journal Reviews
Guest reviewer, Journal of Gender, Culture, and Health

Spring 1998 — Engaged in creating contents of the WEB page for the PSC & the CSC

OTHER SKILLS

Language — Fluent in Japanese
Computer — UNIX OS, Programming language (C, Pascal, FORTRAN)
Microsoft Word, Excel, Access, SPSS, SAS, Lotus 123, and others
Hardware, Telecommunication network, Internet

OTHER WORKING EXPERIENCE

1995-1996. — Computer & Internet engineer, technical support
Sony Communication Network Systems, Tokyo, Japan

1989-1994. — Telecommunication research engineer
Nippon Telegraph and Telephone, Tokyo, Japan

VOLUNTEER EXPERIENCE

1994 — Helping elderly survivors at nursing homes and temporary houses in Kobe in Japan after the earthquake disaster

1992-1996 — Supporting elderly people with dementia at the nursing home in Tokyo

PROFESSIONSL ORGANIZATIONS

South Eastern Psychological Association, Student Member
American Psychological Association, Student Member