Research Note/Note de recherché

Psychometric Properties of the Inventory of Attitudes Toward Seeking Mental Health Services (Chinese Version)

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RÉSUMÉ

La recherche sur les profils de sous-utilisation des services de santé mentale chez les immigrants chinois plus âgés est en partie limitée par l'absence d'outils de mesures traduits et possédant une bonne fiabilité psychométrique pour évaluer les attitudes liées à la recherche d'aide. Dans cette étude, 200 immigrants sino-canadiens ont été interviewés avec une version traduite du IASMHS. Les mesures collectées comprennent l'utilisation de soins de santé mentale au cours des 12 derniers mois et décrivent les intentions de recherche d'aide. Des analyses factorielles confirmatoires n'ont pas répliqué la structure originale à trois facteurs, donc l'analyse factorielle exploratoire a été utilisée pour créer une version chinoise à 20 items, le C-IASMHS. Cette version a présenté une consistance interne acceptable et était positivement corrélée avec les intentions de recherche d'aide. La sous-échelle sur la propension à la recherche d'aide a présenté les plus fortes propriétés psychométriques, tandis que la sous-échelle sur l'ouverture psychologique a affiché de faibles résultats dans l'analyse factorielle et une consistance interne insatisfaisante. De plus amples recherches sur l'équivalence conceptuelle du construit de l'ouverture psychologique chez les adultes chinois plus âgés sont nécessaires.

ABSTRACT

Research on underutilization patterns of mental health services among older Chinese immigrants is limited, partly due to the absence of translated, psychometrically sound measures for assessing attitudes towards seeking help. In this study we interviewed 200 older Chinese Canadian immigrants using a translated version of the Inventory of Attitudes Toward Seeking Mental Health Services scale (IASMHS), and assessed mental health care utilization over the past 12 months and intentions to seek help. Confirmatory factor analysis failed to replicate the original three-factor structure; thus, we used exploratory factor analysis to create a 20-item Chinese version, the C-IASMHS. It had acceptable internal consistency and was positively correlated with intentions to seek help. The Help-Seeking Propensity subscale had the strongest psychometric properties whereas the Psychological Openness subscale performed poorly based on factor analysis results and unacceptable internal consistency. Future research should focus on the conceptual equivalence of psychological openness among Chinese older adults.

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Older adults from minority backgrounds are at greater risk for mental health problems and are less likely to utilize mental health services (Guruge, Thomson, & Seifi, 2015; Sorkin, Pham, & Ngo-Metzer, 2009). Much of this research has focused on older Asian populations, reflecting the increased numbers of Asian immigrants in many countries. For example, by 2017, Asians and South Asians will comprise 10 per cent to 23 per cent of the Canadian population, depending on the growth scenario utilized (Statistics Canada, 2005). This, combined with an aging population, has led to a significant increase in the number of older Asians living in Canada. Older Chinese consistently underutilize mental health services, in spite of the fact that rates of depression in this group are higher than in the general older adult population (Lai, 2000).

Older Chinese are at risk of underutilizing mental health services for a variety of reasons. First, the majority of older Chinese immigrants reside with family members and decisions to seek help are made collectively (Lin & Lin, 1981). Thus, access to care is highly dependent on family members recognizing the need for care and seeking help on behalf of their elders. Second, the cultural influence of "face" increases the degree of stigma attached to mental illness, bringing shame not only to the afflicted individual but also to the family at large (Yang, Phelan, & Link, 2008). Third, English fluency poses a significant barrier to seeking help. Most communities lack culturally relevant mental health services, including mental health therapists that are fluent in Chinese dialects. Among their Chinese middle-aged sample, Li and Browne (2000) found that 70 per cent reported poor English language ability as the most common barrier to accessing services, whereas 60 per cent indicated that not knowing how to access mental health services was also a factor. Research shows that Chinese older adults have little awareness of appropriate formal mental health services available to them (Sadavoy, Meier, & Ong, 2004). Moreover, in tightly knit communities, the probability of accessing these resources with some degree of confidentiality is an additional barrier to seeking help. Finally, increased identification with Chinese cultural values places older Chinese at increased risk for symptoms of depression (Lai, 2004b), and level of acculturation has been found to affect help-seeking behaviour (Tieu & Konnert, 2014).

Although there are conceptual frameworks for understanding cultural influences on help-seeking (Hwang, Myers, Abe-Kim, & Ting, 2008), research in this area has been limited by the lack of outcome measures. The most commonly used measure is the Attitudes Toward Seeking Professional Psychological Help Scale (ATSPPHS; Fischer & Turner, 1970). More recently, Mackenzie, Knox, Gekoski, and Macauley (2004)

published an adaptation and extension of this measure, the Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS). The IASMHS has good psychometric properties and a factor structure that reflects three theoretically important dimensions for predicting mental health utilization: (1) *psychological openness*, (2) *indifference to stigma*, and (3) *help-seeking propensity*. Examining the contribution of each of these factors to utilization is particularly advantageous when studying groups that are typically underserved by the mental health system (e.g., older adults, minority groups). For example, in their sample of 206 community-dwelling adults, Mackenzie, Gekoski, and Knox (2006) were able to demonstrate gender differences on psychological openness, but not on indifference to stigma or help-seeking propensity. Greater specificity as to the reasons for underutilization raises the possibility of developing more targeted interventions for increasing the use of mental health services. Similarly, each of these factors may differentially account for the underutilization of mental health services among immigrant groups.

In a recent scoping review, Guruge et al. (2015) indicated the need for more quantitative studies that address mental health care utilization among older Canadian immigrants with culturally validated instruments. To date, the IASMHS has been translated into French and demonstrated good factorial validity, replicating the original three-factor structure in a French-speaking sample ($n = 702$; Lheureux, 2015). Similar support for the theoretical structure was reported in a sample of 331 active and retired members of the national police force in Ireland (Hyland et al., 2015). Both of these samples were relatively young, with mean ages of 36 (Lheureux, 2015) and 28 (Hyland et al., 2015). A German version of the IASMHS was used to assess correlates of help-seeking among 156 older adults; however, the scale was not factor analysed (Kessler, Agines, & Bowen, 2015). The purpose of the study discussed in this article was to further work in this area by providing a Chinese translation of the IASMHS (the C-IASMHS), and to present psychometric data that we obtained from older Chinese Canadians.

Method

Participants

Participants were Chinese-Canadian immigrants, 55 years of age and older, who were born outside of Canada and self-identified as being of Chinese descent. We recruited participants from the community (e.g., Chinese cultural organizations, Chinese seniors' apartment residences, churches) and a long-term care centre via recruitment notices and presentations delivered in Cantonese and Mandarin. Samples from two published

studies (Tieu, Konnert, & Wang, 2010, $n = 51$; Tieu & Konnert, 2014, $n = 149$) were combined to form the participant sample for the current study. The procedures for the recruitment of participants, translation of measures, and administration of the protocol (as described in this section) were similar across the two studies. However, only participants from the second sample ($n = 149$) were administered the questionnaires related to mental health utilization and intentions to seek help. We thus restricted analyses involving these questionnaires to this subset of participants.

Measures

The interview protocol included the IASMHS, a measure of mental health; questionnaires related to mental health utilization and intentions to seek help; and a demographic questionnaire to collect information about age, gender, marital status, country of origin, citizenship status, education level, English language ability, religion, Chinese language use, and cultural identity.

IASMHS

The IASMHS (Mackenzie et al., 2004) consists of 24 items and three subscales (psychological openness, help-seeking propensity, and indifference to stigma). Items are rated on a 5-point rating scale (0 = disagree; 4 = agree) with higher scores indicating more positive attitudes towards seeking mental health services. Total scores range from 0 to 96, and in previous research, Cronbach's alphas ranged from .76 to .87 (Mackenzie et al., 2004).

Mental Health

The Mental Component Scale of the Chinese version of the Medical Outcomes Study 36-item Short Form (SF-36) was the instrument we used to assess overall mental health (Ware et al., 2008). The Mental Component Scale is a summary scale that includes items assessing mental health, role limitations due to emotional problems, social functioning, and energy/vitality. Responses to items are standardized and summed, yielding scale scores from 0 to 100, with higher scores indicating better mental health. Normative data for the translated version are available for Chinese Canadians ($n = 2,272$), 55 years of age and older (Lai, 2004a).

Mental Health Utilization

We asked our study participants whether they had discussed an emotional or mental health problem with (a) a professional (e.g., primary care physician, psychiatrist, psychologist, nurse, social worker, counsellor); or (b) a non-professional (e.g., family member or friend, member of the clergy) in the past year.

Intentions to Seek Help

We assessed intentions to seek mental health services using a procedure adapted from prior research (Mackenzie et al., 2006). Participants were asked to rate their likelihood of seeking help from a list of people, including the likelihood of taking care of problems on their own, if they were to experience significant emotional or mental health problems in the future. Ratings were made on a 7-point rating scale, ranging from 1 (very unlikely) to 7 (very likely). The likelihood ratings for seeking help from a psychologist, psychiatrist, or counselor were averaged to provide a measure of intentions to use a mental health professional; ratings from a general practitioner or pharmacist were averaged to provide a measure of intentions to use a medical professional; and ratings from a close family member or friend were averaged to provide a measure of intentions to talk to family/friends.

Procedure

We conducted the translation and pilot testing of the protocol using the World Health Organization's guidelines (2007). Separate Cantonese and Mandarin protocols were created to reflect linguistic differences and ensure accurate phrasing in both languages. The questionnaires and research materials, including the IASMHS, were translated and back-translated by bilingual (Chinese and English-speaking) research assistants. Pilot participants' feedback and expert consultation were taken into account as we determined the final translated research protocol. The protocol was read aloud to participants in either Cantonese or Mandarin. The University of Calgary Conjoint Faculties Research Ethics Board approved this study.

Data Analysis

Descriptive statistics summarized the demographic data. We conducted a confirmatory factor analysis on the IASMHS using Mplus version 7 (Muthén & Muthén, 1998–2012) with maximum likelihood estimation. Model fit was evaluated using the comparative fit index (CFI) and the Tucker-Lewis index (TLI), with values greater than .90 indicating acceptable fit and values greater than .95 indicating close fit, and the root mean square error of approximation (RMSEA), with values less than .08 indicating acceptable fit and values less than .05 indicating close fit (Kline, 2011). The model chi-square is also reported, but was not used to evaluate fit given that it is highly influenced by sample size and tends to be significant in large samples regardless of model fit (Kline, 2011).

Next, we performed an exploratory factor analysis on the IASMHS to evaluate the factor structure and the

factor loadings of individual items. With the results of this factor analysis we created a revised, 20-item version of the IASMHS (C-IASMHS). We computed item statistics and item-total correlations, and used Cronbach's alpha to provide estimates of the internal consistency of the C-IASMHS total scale score and subscale scores. To evaluate criterion-related validity, we examined bivariate correlations between C-IASMHS total and subscale scores and participants' reported past year use of and intentions to seek help from a variety of sources.

Results

Participants

The sample consisted of 200 Chinese older adult participants. The socio-demographic characteristics of the sample are presented in Table 1. The sample primarily

Table 1: Socio-demographic characteristics of the study participants (n = 200)

Characteristic	n	%
Gender		
Female	137	68.5
Male	63	31.5
Marital status		
Single[a]	79	39.5
Married	121	60.5
Country of origin prior to Canada		
Hong Kong	106	53.0
Mainland China	64	32.0
Taiwan	7	3.5
Vietnam	7	3.5
Other	16	8.0
Citizenship status		
Landed immigrant	51	25.5
Naturalized citizen	149	74.5
Education		
No formal or elementary	58	29.0
Junior or senior high	79	39.5
Post-secondary	63	31.5
Able to comprehend English		
No	49	24.5
Yes, a little	83	41.5
Yes, well	68	34.0
Able to speak English		
No	49	24.5
Yes, a little	79	39.5
Yes, well	72	36.0
Religion		
Ancestor worship	6	3.0
Buddhist	28	14.0
Catholic	15	7.5
Protestant	74	37.0
Combination/Other	11	5.5
None reported	66	33.0

[a] **Single: individuals who were never married and individuals who were divorced/ separated/widowed.**

comprised married females who had immigrated from either Hong Kong or Mainland China. The majority of participants were naturalized citizens and reported a high school education or less. Most participants reported that they understood and spoke English at least a little. The majority of the sample reported either a Protestant religious background or no religious affiliation.

The average age of participants was 72.99 years ($SD = 10.12$; range = 55–95). Participants reported that they had lived in Canada for an average of 21.76 years ($SD = 10.81$). With regard to the frequency of Chinese language use in their homes, the majority of participants reported that they spoke Chinese "all of the time" (80.5%), followed by "most of the time" (16.5%), "half of the time" (2.5%), and "I do not speak Chinese at all" (0.5%). When asked about cultural identity, 72.0 per cent of participants identified as Chinese-Canadian, 20.5 per cent of participants identified as Chinese, and 6.5 per cent identified as Canadian. Most participants reported that their Chinese culture was "somewhat important" to them (43.5%), with smaller proportions reporting that their Chinese culture was "somewhat unimportant" (26.5%), "very important" (22.5%), "very unimportant" (6.5%), or "don't know" (0.5%).

The SF-36 Mental Component Summary had excellent internal consistency in this sample (Cronbach's alpha = .93). The mean was 47.91 ($SD = 9.51$), which was similar to the average mean value of 48.37 (across three age groups, 55 years and older) in a representative Chinese Canadian sample (Lai, 2004a).

In the following analyses, one participant was missing a single data point on one item of the IASMHS and one participant was missing data points for two items of the IASMHS. We replaced these missing data points with the sample mean for the items. Seven participants were identified as multivariate outliers based on Mahalanobis distance values that were significant at $p < .001$. These participants were excluded from the data analyses, resulting in a sample of 193 participants.

Factor Analyses and Item-Total Correlations

A confirmatory factor analysis (CFA) of the hypothesized model of three factors reported by Mackenzie et al. (2004) resulted in a poor fit for the IASMHS, as follows: $\chi^2(249) = 612.21$, $p < .001$, CFI = .66, TLI = .62, RMSEA = .09 (90% CI = .08 – .10).

Schmitt (2011) recommended following up a poor-fitting CFA model with an exploratory factor analysis. Principal component extraction was first used to evaluate the suitability of the data for structure detection and estimate the number of factors. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy value

was .72 which is above the recommended cut-off of .6 (Kaiser, 1974), and the Bartlett's Test of Sphericity was significant ($p < .001$), confirming the appropriateness of the data for factor analysis. The number of factors for extraction was determined using the scree test (Cattell, 1966) and Horn's (1965) parallel analysis. The scree plot displays the eigenvalues associated with each factor in descending value; the point at which a line drawn through the points changes slope indicates the number of factors to extract. Parallel analysis compares the eigenvalues to mean eigenvalues produced in 100 randomly generated data sets with the same number of cases and variables (O'Connor, 2000). Eigenvalues that are larger than those from the randomly generated data sets are retained. Inspection of the scree plot suggested that four factors should be extracted. Parallel analysis based on principal component eigenvalues also suggested four factors (Patil, Singh, Mishra, & Donavan, 2007). Given that the scree test and parallel analysis suggested a four-factor model, but the original factor analysis of the IASMHS produced a three-factor model, both four-factor and three-factor solutions were examined.

The criteria we used for inclusion of an item in interpretation of a factor were that items must have a primary factor loading larger than .32 (10% shared variance) and not have a loading on a second factor larger than .32. The four-factor solution accounted for 34.21 per cent of the variance in IASMHS scores (see Table 2 for items.) Three items (items 1, 7, and 14, shown in the table note) did not have factor loadings above .32 on any of the factors. Five additional items (items 6, 10, 15, 18, and 19) had cross-loadings greater than .32. When the factor analysis was rerun without these eight items, items 8 and 13 cross-loaded above the cut-off on factors 2 and 3. Removal of items 8 and 13 resulted in a solution in which factors 2 and 4 were defined by only two items each (items 22 and 23 and items 2 and 5 respectively).[1] Given that factors defined by fewer than three variables are unlikely to be reliable (Tabachnick & Fidell, 2007), we evaluated the three-factor model.

The three-factor solution accounted for 29.88 per cent of the variance in IASMHS scores. Items 1, 7, and 14 did not have factor loadings above .32 on any of the factors. In a subsequent run with these three items removed, item 12 did not load above the cut-off on any factor. The pattern of factor loadings remained stable when principal factor extraction was conducted on the remaining 20 items. All items loaded above .32 on a primary factor and none of the items had a cross-loading above .32. The reduced 20-item three-factor solution (i.e., the C-IASMHS) was thus retained as the superior structural model and interpreted (Table 2).

When principal axis factoring was run with oblique rotation, all correlations among factors were lower than .32 (< 10% shared variance). Thus, we chose orthogonal rotation (Tabachnick & Fidell, 2007). The pattern of factor loadings was similar across the solutions with oblique and orthogonal rotation.

The reduced three-factor solution accounted for 33.82 per cent of the variance in C-IASMHS scores. As indicated in Table 2, Factor 1 accounted for 18.44 per cent of the variance in C-IASMHS scores. Items 2, 5, 8, 10, 13, 15, 19, 22, and 23 loaded above the cut-off onto Factor 1, with item 10, "If I were to experience psychological problems, I could get professional help if I wanted to," showing the highest factor loading. Factor 2 accounted for 10.40 per cent of the variance. Items 6, 11, 16, 17, 20, and 24 loaded above the cut-off onto Factor 2, with item 24, "I would be embarrassed if my neighbour saw me going into the office of a professional who deals with psychological problems," having the highest factor loading. Factor 3 accounted for 4.98 per cent of the variance in C-IASMHS scores. Items 3, 4, 9, 18, and 21 loaded above the cut-off onto Factor 3, with item 18, "There is something admirable in the attitudes of people who are willing to cope with their conflicts and fears without resorting to professional help," showing the highest factor loading.

Factor 1 in the three-factor solution contained items from the IASMHS help-seeking propensity subscale defined by Mackenzie et al. (2004), with the exception of item 23, which was from the indifference to stigma subscale. Factor 2 contained items from the IASMHS indifference to stigma subscale. Factor 3 contained items from the IASMHS psychological openness subscale (without items 1, 7, 12, and 14) from Mackenzie et al. (2004), with the exception of item 3, which was from the indifference to stigma subscale. Thus, the three factors on the C-IASMHS appeared to reflect the same constructs identified by Mackenzie et al. (2004) for the IASMHS, although the boundaries between factors were less well-defined and some items from the psychological openness subscale were not good indicators of this construct.

As indicated by squared multiple correlations (SMC) in Table 2, the help-seeking propensity (Factor 1) and indifference to stigma (Factor 2) factors were internally consistent and well defined by the variables. The help-seeking propensity factor had an SMC of .83 and the indifference to stigma factor had an SMC of .78. Psychological openness (Factor 3) was somewhat less well defined by the variables, with an SMC of .65. Several of the communality values were low, indicating that the variables contain a large amount of variance not accounted for by the factor solution.

Table 2: Item-total correlations and exploratory factor analysis of the C-IASMHS ($n = 193$)

Item	Item-total Correlation	Factor 1[d]	Factor 2[d]	Factor 3[d]	h^2
2. I would have a very good idea of what to do and who to talk to if I decided to seek professional help for psychological problems.[a]	.349	**.43**	−.02	.11	.20
3. I would not want my significant other (spouse, partner, etc.) to know if I were suffering from psychological problems.[b]	.450	.11	.24	**.32**	.17
4. Keeping one's mind on a job is a good solution for avoiding personal worries and concerns.[c]	.221	−.11	.06	**.37**	.15
5. If good friends asked my advice about a psychological problem, I might recommend that they see a professional.[a]	.522	**.59**	.16	.17	.40
6. Having been mentally ill carries with it a burden of shame.[b]	.509	.27	**.34**	.26	.25
8. If I were experiencing a serious psychological problem at this point in my life, I would be confident that I could find relief in psychotherapy.[a]	.445	**.62**	.12	−.10	.41
9. People should work out their own problems; getting professional help should be a last resort.[c]	.199	−.19	.09	**.39**	.19
10. If I were to experience psychological problems, I could get professional help if I wanted to.[a]	.475	**.75**	.02	.02	.57
11. Important people in my life would think less of me if they were to find out that I was experiencing psychological problems.[b]	.441	.10	**.45**	.05	.22
13. It would be relatively easy for me to find the time to see a professional for psychological problems.[a]	.377	**.52**	.00	−.06	.27
15. I would want to get professional help if I were worried or upset for a long period of time.[a]	.462	**.64**	.17	−.25	.49
16. I would be uncomfortable seeking professional help for psychological problems because people in my social or business circles might find out about it.[b]	.508	−.02	**.59**	.26	.42
17. Having been diagnosed with a mental disorder is a blot on a person's life.[b]	.563	.17	**.62**	.03	.41
18. There is something admirable in the attitudes of people who are willing to cope with their conflicts and fears without resorting to professional help.[c]	.175	−.16	.00	**.59**	.38
19. If I believed I were having a mental breakdown, my first inclination would be to get professional attention.[a]	.499	**.64**	.20	−.18	.48
20. I would feel uneasy going to a professional because of what some people would think.[b]	.531	.13	**.69**	−.02	.49
21. People with strong characters can get over psychological problems by themselves and would have little need for professional help.[c]	.452	.19	.09	**.55**	.35
22. I would willingly confide intimate matters to an appropriate person if I thought it might help me or a member of my family.[a]	.339	**.40**	.19	−.17	.22
23. Had I received treatment for psychological problems, I would not feel that it ought to be "covered up."[b]	.409	**.34**	.22	−.06	.17
24. I would be embarrassed if my neighbor saw me going into the office of a professional who deals with psychological problems.[b]	.570	.04	**.72**	.15	.54
Initial eigenvalues	—	4.29	2.71	1.64	—
Extraction sums of squared loadings	—	3.69	2.08	1.00	—
Percentage of variance	—	18.44	10.40	4.98	—
Squared multiple correlations	—	.83	.78	.65	—

Note: **Items on each factor from the IASMHS = [a]Help-seeking Propensity, [b]Indifference to Stigma, [c]Psychological Openness (Mackenzie et al., 2004). Items omitted from the IASMHS: (1) There are certain problems which should not be discussed outside of one's immediate family[d]; (7) It is probably best not to know everything about oneself[c]; (12) Psychological problems, like many things, tend to work out by themselves[d]; and (14) There are experiences in my life I would not discuss with anyone[c]. d Factor 1 = Help-seeking Propensity, Factor 2 = Indifference to Stigma, Factor 3 = Psychological Openness. The translated version of the IASMHS is available from the first author.**
IASMHS = Inventory of Attitudes Toward Seeking Mental Health Services

Table 2 shows the item-total correlations. All items were significantly correlated with the total scale ($p < .01$). Most of the items had item-total correlations of .20 or higher, with the exception of item 18, "There is something admirable in the attitudes of people who are willing to cope with their conflicts and fears without resorting to professional help."

Descriptive Statistics of Scale Items and Internal Consistency of C-IASMHS Scores

Scale means, standard deviations, Cronbach's alpha coefficients, and scale intercorrelations for the Chinese older adult sample are presented in Table 3. Cronbach's alpha for the full-scale C-IASMHS was .75; for the

Table 3: Means, standard deviations, subscale intercorrelations, and Cronbach's alpha coefficients for C-IASMHS total and subscale scores (*n* = 193)

	Psychological Openness	Help-seeking Propensity	Indifference to Stigma	Total C-IASMHS Score
Psychological openness	—			
Help-seeking propensity	−.06	—		
Indifference to stigma	.23*	.26**	—	
Total C-IASMHS score	.50**	.69**	.77**	—
Cronbach's α	.59	.79	.77	.75
Mean (*SD*)	8.23 (4.38)	29.14 (6.08)	16.77 (5.53)	54.13 (10.61)

***p* < .01, ***p* < .001 .**

***SD* = standard deviation.**

C-IASMHS = Inventory of Attitudes Toward Seeking Mental Health Services (Chinese version)

psychological openness, help-seeking propensity, and indifference to stigma subscales, the alpha values were .59, .79, and .77 respectively. Deleting items 4 and 18 increased the alpha coefficient from .75 to .78 on the full-scale C-IASMHS. Deleting item 2 on the help-seeking propensity subscale increased the alpha coefficient from .79 to .80. The deletion of items did not influence the remaining two subscales. The indifference to stigma subscale was positively correlated with both the psychological openness and help-seeking propensity subscales; however, the psychological openness and help-seeking propensity subscales were not significantly correlated with one another.

Validity Analyses

To evaluate the criterion validity of the C-IASMHS, we examined correlations between C-IASMHS total and subscale scores, and participants reported past-year use of professional and non-professional help and intentions to use mental health services. As indicated, these data were available for only a subset of the sample (*n* = 149, 143 excluding outliers). Over the past 12 months, 11 participants (7.7%) sought help from a mental health professional and 16 (11.2%) sought non-professional help. As indicated in Table 4, full-scale

and subscale scores on the C-IASMHS were unrelated to past-year use of professional help and non-professional help. Intentions to use a mental health professional were associated with higher scores on the help-seeking propensity subscale and approached significance for the total C-IASMHS (*r* = .16. *p* < .06). Similarly, intentions to talk to family or friends and a clergy, minister, or priest, were related to higher scores – whereas the intention to take care of problems oneself was associated with lower scores – on the help-seeking propensity subscale. Intentions to seek help for mental or emotional health were unrelated to scores on the psychological openness and indifference to stigma subscales.

Discussion

To our knowledge, this is the first study to examine the psychometric properties of a measure for assessing attitudes towards mental health services in an older Chinese population. This is important because population-based studies have clearly indicated that Chinese immigrants are less likely to access mental health services compared to White, South Asian, and Southeast Asian immigrant groups (Tiwari & Wang, 2008). Research devoted to increasing our understanding of barriers to mental health care utilization

Table 4: Correlations between C-IASMHS total and subscale scores and participants' past use of and intentions to use mental health services (*n* = 143)

	Psychological Openness	Help-seeking Propensity	Indifference to Stigma	Total C-IASMHS Score
Past-year use of professional help	.08	−.07	−.10	−.06
Past-year use of non-professional help	.08	.15	.05	.15
Intentions to use mental health professional (i.e., psychologist, psychiatrist, counselor)	−.04	.28**	.03	.16
Intentions to use medical professional (i.e., general practitioner, pharmacist)	.01	.06	−.08	.01
Intentions to talk to family/friends	−.15	.20*	.06	.09
Intentions to talk to clergy/minister/priest	−.03	.20*	−.05	.08
Intentions to talk to Traditional Chinese Medicine practitioner	−.14	.08	.00	−.01
Intentions to take care of problems oneself	.01	−.17*	−.10	−.15

***p* < .05, ***p* < .01 .**

C-IASMHS = Inventory of Attitudes Toward Seeking Mental Health Services (Chinese version)

has been hampered by the absence of psychometric information on measures for assessing attitudes within specific cultural groups, particularly those who are older and less acculturated. In this sample, only one third of participants spoke English well, and lack of language proficiency is a demonstrated risk factor for the underutilization of mental health services (Li & Browne, 2000).

The results of this study showed modest support for using the C-IASMHS with older Chinese adults as it is positively but marginally correlated ($p < .06$) with intentions to use a mental health professional. The results provided stronger support for using the help-seeking propensity subscale. It had good internal consistency and was positively correlated with seeking non-professional help over the past year, intentions to seek professional help, intentions to talk to family and friends, and intentions to talk to a clergy/minister/priest; it was negatively correlated with relying on oneself. Further analyses found that the item-total correlations were highly significant ($p < .001$), ranging from .742 to .346. The lack of a significant correlation with actual service use over the past 12 months was likely related to the low percentage of participants (7.7%) who had sought this help. However, there is a need for further research examining the conceptual equivalence of the psychological openness construct based on the findings of poor internal consistency, a weak item-total correlation on item 18, and results from the factor analysis. Poor internal consistency (.45) on this subscale was also reported in a sample of older adults in New Zealand (James & Buttle, 2008; H. Buttle, personal communication, November 22, 2012).

Conceptually, these results suggest that the construct of psychological openness may be quite different in this sample when compared to the original standardization sample, which was almost entirely non-Asian (95.5%) (Mackenzie et al., 2004). It has been suggested that the psychological openness factor more closely represents a personality construct rather than an attitudinal factor, as originally proposed by Fischer and Turner (1970). In the five-factor model (McCrae, & John, 1992), openness to experience has repeatedly been shown to be psychometrically problematic in Asian cultures with low internal consistencies, and lexical studies have not identified openness as an indigenous personality factor in Chinese cultures (for a review, see the introduction in Cheung et al., 2008). In addition, openness as conceptualized in the five-factor model is generally discouraged in Chinese culture. Factor analyses of the Chinese Personality Assessment Inventory (CPAI-2), an instrument developed using a combined emic-etic approach and designed to assess Chinese personality from an indigenous perspective, did not obtain a distinct openness factor. Instead, openness

merged with other factors that were associated with sociability, the inclination to lead, and confidence in treading the unbeaten path. Moreover, this pattern was replicated across levels of traditionalism versus modernity, indicating that openness is not a personality trait that is present among those with high levels of modernity (Cheung et al., 2008).

In general, openness in Chinese culture is a more complex construct with boundaries that converge with other factors in the five-factor model of personality. More recent research comparing undergraduate students in the United States and undergraduates and mid-level managers/MBA students in China was undertaken by Woo et al. (2014), who found evidence for measurement invariance of an openness scale that included 6 facets: intellectual efficiency, ingenuity, curiosity, aesthetics, tolerance, and depth. Although Woo et al.'s research focused on openness as a personality domain, it has obvious implications for openness as an attitude as well and indicates that there may be significant cultural variability in attitudes towards mental health help-seeking as assessed by the IASMHS: in particular, the psychological openness subscale. This is consistent with Kleinman's (1978) notion that explanatory models of illness are embedded within a social context and that culture plays a significant role in attitudes towards mental health problems and help-seeking. Thus, the pattern of findings on the psychological openness subscale may reflect a different explanatory model of distress/help-seeking rather than a personality trait per se.

The four items on the original psychological openness subscale (Mackenzie et al., 2004) that were problematic in the factor analysis are as follows: (1) there are certain problems that should not be discussed outside of one's immediate family (item 1); (2) it is probably best not to know everything about oneself (item 7); (3) psychological problems, like many things, tend to work out by themselves (item 12); and (4) there are experiences in my life I would not discuss with anyone (item 14). From a cultural perspective, item 1 may tap into the Chinese cultural value of preserving face and cultural differences in self-disclosure. Face is viewed as the obligation to uphold the reputation of oneself and one's family. The preservation of face has been shown to prohibit disclosure of mental health problems in Chinese immigrant communities (Chen, Lai, & Yang, 2013), and face concern is negatively related to the self-disclosure of personal information (Zane & Ku, 2014). Moreover, guarded self-disclosure is negatively related to the willingness to seek psychological services among East Asian immigrants (Barry & Mizrahi, 2005).

Item 7 is distinctly focused on the self, which may be inconsistent with collectivistic values that focus on

the welfare of the group. "Knowing everything about oneself" is akin to the construct of insight, a highly self-focused process that is fundamental to Western therapeutic approaches but may be inconsistent with the Chinese cultural value of self-effacement and the inappropriateness of drawing attention to oneself (Kim, Atkinson, & Umemoto, 2001).

Item 12 may reflect beliefs in fate and destiny that are deeply embedded within Chinese culture. Fate control is a constellation of beliefs about future predetermination and an individual's ability to control external forces. Fatalism, or the idea that future events are beyond an individual's control, was found to be more prevalent in Chinese immigrants when compared to Korean immigrants and native-born Caucasians (Heiniger, Sherman, Shaw, & Costa, 2015). It has also been identified as an important socio-cultural factor that influences views of illness and engagement in health promoting behaviours (Heiniger et al., 2015). Western perspectives emphasize internal control and the importance of actively seeking help for psychological problems rather than waiting for problems to go away on their own. However, this Western value may be inconsistent with Chinese beliefs of fate control.

Item 14 is more difficult to interpret from a cross-cultural perspective; however, it may be that there are certain experiences in life that are simply not shared with others. For example, Chen et al. (2013) suggested that non-disclosure of mental illness in Chinese immigrant families may be related to the value of *Ren Qing*, the obligation to extend care, compassion, and reciprocity of kindness in social interactions. Disclosing highly personal experiences, particularly those that are perceived as very negative, may violate Ren Qing, causing burden and grief to loved ones. Also, as indicated, sharing negative personal experiences may lead to loss of face.

An unexpected result was that indifference to stigma was unrelated to help-seeking behaviours or intentions. This is inconsistent with the finding that mental health stigma predicts the reluctance to engage in a professional helping relationship among Chinese older adults and the widespread belief that there is considerable stigma associated with mental illness in Chinese culture (Witt, Poulin, Ingersoll, & Deng, 2011). Although speculative, this may be related to the fact that mean levels on the indifference to stigma subscale were considerably lower in this sample (16.77) when compared to other samples using the IASMHS with older adults (22.40; James & Buttle, 2008), older adults in urban environments (21.25; Stewart, Jameson, & Curtin, 2015), and across the age range of 18 to 89 years (23.32; Mackenzie et al., 2006). Moreover, stigma is a multidimensional construct comprising both internalized and public stigma. It is internalized stigma that partially

mediates the relationship between race/ethnicity and attitudes towards mental health treatment (Conner et al., 2010). Thus, low levels of stigma and the fact that the indifference to stigma subscale does not distinguish between internalized and public stigma may be related to the absence of a relationship.

It is interesting to note that other studies have reported the absence of a correlation between the indifference to stigma and help-seeking propensity subscales in non-immigrant, older adult samples (Stewart et al., 2015; Westerhof, Maessen, de Bruijn, & Smets, 2008). Westerhof et al. (2008) concluded that older adults "are rather indifferent to the stigma associated with seeking professional help" (p. 320), and Witt et al. (2011) stressed the importance of recognizing that not all Chinese individuals have the same level of discomfort with seeking professional help.

Researchers who wish to assess help-seeking attitudes with older Chinese samples have several options available to them based on the psychometric results of this study. First, using the C-IASMHS as a total score is appropriate given the acceptable internal consistency and positive correlation with intentions to seek help. Second, researchers could use the help-seeking propensity and indifference to stigma subscales. Taken together, the 15 items from these two subscales have an internal consistency coefficient (Cronbach's alpha) of .79, indicating acceptable internal consistency. Third, the help-seeking propensity subscale could be used on its own as it also demonstrated acceptable internal consistency and was positively correlated with intentions to use a mental health professional, family/friends, and clergy/minister/priest and negatively correlated with the intention to rely on oneself.

This study has the following limitations. First, the sample was recruited, in part, from Chinese cultural organizations and churches, two venues that are likely to attract socially integrated older adults. Perceived social support is related to positive attitudes towards mental health care utilization (Kessler et al., 2015), and this sample may underrepresent socially vulnerable older adults. Second, this study did not assess test-retest reliability or predictive validity. Future research should provide additional psychometric information, specifically a prospective analysis of whether the C-IASMHS predicts future help-seeking behaviour among older Chinese adults. In particular, future research should focus on Chinese older adults with depression and whether the C-IASMHS predicts help-seeking in this vulnerable group. In addition, future research should attempt to replicate these findings in a new sample of older Chinese adults because exploratory factor analysis is sensitive to sample characteristics (Tabachnick & Fidell, 2007). More specifically, future research should

assess the conceptual equivalence of the psychological openness subscale. Further replication will provide important information about the underlying factor structure and the extent to which the problems with the psychological openness subscale are unique to this sample. Finally, future research should focus on whether this translated version is appropriate for use with younger Chinese adults.

In summary, conceptual models that investigate cultural influences on mental health include attitudes towards help-seeking as a primary predictor of treatment (Hwang et al., 2008). Attitudes also figure prominently in models, such as the theory of planned behaviour, that seek to understand preventive psychological help-seeking in older adults (Westerhof et al., 2008). However, adequate measures are lacking, limiting research on these models. This study provides unique information on the C-IASMHS among a sample of older Chinese immigrants, a group that is challenging to access due to poor English-language fluency but clearly at risk for the underutilization of mental health services.

End Note

1 Items loading above the cut-off for the four-factor solution were items 11, 16, 17, 20, and 24 on Factor 1; items 22 and 23 on Factor 2; items 3, 4, 9, 12, and 21 on Factor 3; and items 2 and 5 on Factor 4.

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