ABSTRACT

Background: Low knowledge of and discrimination regarding mental disorders (MDs) may underpin lower access to mental health care by ethnic minority groups.

Aims: In Chinese-Australians, in relation to schizophrenia and depression, to assess (a) labels attached to MDs, (b) conceptual distinctiveness of MDs, (c) labelling accuracy against an Australian representative sample, (d) how syndrome variations may influence labelling, and (e) effects of exposure to MDs on labelling.

Method: 418 subjects were asked to indicate the labels they would apply to vignettes of depression and schizophrenia and whether they were exposed to these disorders personally or socially.

Results: The sample was broadly representative of the Australian-Chinese community: 51% and 47% 'correctly' labelled the vignettes. Depression and schizophrenia labels were consistently discriminated and clustered with different other labels. Labelling accuracy surpassed Australians'. Labelling did not vary substantially between syndromes. Exposure related to increased labelling accuracy for depression.

Conclusions: Accuracy in labelling major forms of MDs does not appear low in Chinese-Australians and seems higher than in the Australian community. MDs were discriminated although syndrome variations were not. Findings dispute that low mental health care access and uptake is due to low recognition and discrimination of MDs in Chinese-Australians.

Key words: Chinese, depression, ethnic minority groups, explanatory models, illness labels, mental health literacy, schizophrenia, service utilization

INTRODUCTION

As in other Western nations (e.g. Klimidis et al., 2000; Takeuchi et al., 1988; Ying, 1990), there is evidence in Australia for an enduring problem of under-representation of non-English-speaking background (NESB) immigrants within mental health services (Bruxner et al., 1997; Klimidis et al., 1999; McDonald & Steel, 1997; Minas, 1990; Trauer, 1995). Australia’s NESB immigrants...
are less represented in inpatient and even less in community services (Klimidis et al., 1999; McDonald & Steel, 1997) and they have higher involuntary than voluntary admissions than the Australian-born (Minas, 1990; Trauer, 1995). Under-representation does not appear due to greater use of primary care alternatives (Stuart et al., 1996), to different termination from mental health services (Klimidis et al., 2000), or to lower prevalence of mental disorders (Klimidis et al., 1994; Klimidis & Minas, 1999; McLennan, 1998; Stuart et al., 1998).

Together these considerations suggest that community factors may be important. Lack of community knowledge and negative attitudes regarding mental disorders (MDs) and poor knowledge of the health service system are implicated in ineffective or inefficient pathways to care and in diminished uptake of services (Al-Krenawi, 1999; Chan & Quine, 1997; Ju-k’ang, 1985; Kleinman, 1980; Kleinman et al., 1978; Lin et al., 1982; Luk & Bond, 1992; Rogler, 1993; Sheikh & Furnham, 2000; Wig, 1990; Ying, 1990). In this research we focus more specifically on knowledge of MDs; the ability to recognize and differentiate between MDs, in Chinese-Australians. This group was selected because it constitutes one of the largest immigrant groups in Australia (260,000) and is among the lowest represented in mental health services (Klimidis et al., 1999; McDonald & Steel, 1997). In Victoria, Chinese immigrants have 78% lower representation per head of population in psychiatric services than those born in Australia (Klimidis et al., 1999), which is strikingly consistent with New South Wales findings (McDonald & Steel, 1997). International literature on Chinese groups (including immigrants) indicates: diminished level and delay in accessing mental health services; different understandings of MDs; use of alternative methods for dealing with them; and barriers to care attributed to stigma (Atkinson & Gim, 1989; Chan et al., 1988; Cheung, 1986; Cheung & Lau, 1982; Cheung et al., 1983, 1984; Lam & Kavanagh, 1996; Lam et al., 1996; Lin et al., 1978, 1982; Lin & Lin, 1978; Sue & Sue, 1974; Tabora & Flaskerud, 1997; Ying, 1990). Significant delay in access to psychiatric care among Chinese has also been reported in Australia (Lam & Kavanagh, 1996).

Presently we explore, particularly, Chinese-Australians’ labelling of depression and schizophrenia. The literature on Chinese people’s labelling of MDs is small and shows inconsistencies. A study of Chinese-USA primary care patients with depression reported that 55% did not know the label for their condition, 17% attributed it to medical illness and 17% did not believe it constituted an illness; significantly, less than 4% of these patients sought mental health care (Yeung et al., 2004). However, in a sample of Chinese women in the USA, Ying (1990) reported that 58% interpreted a vignette depicting major depression as reflecting psychological disorder and only 13% did not know the label of the condition. Also in Hong Kong (Lam et al., 1996), 50% of a community sample asserted that a vignette depicting schizophrenia represented a normal reaction to stress and only 32% ascribed it to mental illness. While 56% thought that rest alone could alleviate it, in contradiction 52% felt that psychiatric support would be required.

In the present study, we explore variations in labelling vignettes depicting depression and schizophrenia, providing insight into their cultural interpretation. Second, we explore differentiation of the two disorders by examining differences in labelling and how labels are associated with and differentiated from each other. Third, we compare our results with a representative Australian sample (Jorm et al., 1997) to assess whether lower recognition may be implicated in mental healthcare inequities. Fourth, disorders are presented with different features to explore whether different syndromes are discriminated. Of particular interest is the use of the category of neurasthenia, especially for somatized depression, in view of the reported common use of this category in Chinese...
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societies (Lee & Wong, 1995; Parker et al., 2001). Lastly, we explore the extent to which personal and social exposure to the conditions contributes to the nature and accuracy of labelling.

METHOD

Sampling and procedure
Two surveys provided the sample for analysis. In the first, 1450 households were identified by use of 19 common and 49 less common Chinese surnames and the Melbourne telephone directory. Surveys were mailed requiring one participant from the household. Completed surveys numbered 297; 160 were returned uncompleted. Analysis of returns indicated that the surname method identified Chinese householders with at least 67% accuracy. On this basis, the response rate (from Chinese persons) was 30.5% (i.e. 100 × 297/974). A second sample was sought to improve the overall sample size for analysis. Five Chinese community associations distributed 508 questionnaires, which instructed prospective participants not to participate if they did so in the first survey. In this case, 121 completed questionnaires were returned, yielding a crude response rate of 23.8%. For both surveys, questionnaires were self-completed and returned in pre-paid envelopes.

Measures
The questionnaire contained socio-demographic/background information, a vignette depicting depression/schizophrenia, questions related to that condition, a second vignette depicting schizophrenia/depression, and questions related to the second condition. There were four vignettes (somatized and less somatized depression, schizophrenia with persecutory features, and schizophrenia with mixed positive and negative symptoms – see Appendix). Vignettes included similar ages and only female cases (for design simplicity). To counterbalance disorders and syndromes four versions of the questionnaire were prepared. Completed questionnaires were relatively equal across versions (N of 100, 115, 105 and 98), allowing collapse of types of depression and schizophrenia for analysis with insubstantial bias due to version.

Questionnaires were presented in both English and Chinese script. Responses about the vignette were sought to the question ‘What would you say, if anything, is wrong with Ms Chen?’ Responses could be multiply affirmed and included, ‘nothing is wrong’, ‘do not know’, ‘physical problem, e.g. cancer’, ‘mental or emotional problem’, ‘behaviour problem, odd behaviour or eccentric behaviour’, ‘nervous breakdown’, ‘stress’, ‘depression’, ‘schizophrenia’, ‘neurasthenia’, ‘mental illness’, ‘other (specify)’. To assess exposure, two questions asked about whether or not a member of the family/friend and the respondent had ever suffered from the problems in the vignettes.

Demographic characteristics included sex, age (years), country of birth, year of arrival to Australia, level of education completed (seven-choice scale from ‘no schooling’ through to ‘completed tertiary’), main occupation type (eight-choice scale from ‘never in paid work’ through to ‘professional work requiring a high level of university or specialized training’) and preference for speaking Chinese or English at home (measured on a five-point scale ranging from ‘only Chinese’ through to ‘only English’). A similar scale ascertained the extent that friendships were with ‘only Chinese’ or ‘only non-Chinese’. Four questions measured Chinese and Australian ethnic identification: ‘To what extent have you adopted Australian ways of doing things/maintained the traditions of Chinese culture?’, ‘How “Australian”/“Chinese” do you feel yourself to be?’. These
conform to a two-factor structure reflecting identification with each culture. Alpha coefficients were 0.69 and 0.72 for Australian and Chinese identification.

Questionnaires were translated by F-H.H. and translations were reviewed by an experienced Chinese psychiatrist (E-S.T., see Acknowledgements). From discrepancies, which were minor, negotiated translations were included in the final versions. Chinese versions were administered to a small group ($N = 5$) of bilingual tertiary students from Hong Kong, Taiwan and China, asking them to specify any difficulties with understanding; none was reported.

**Analysis**

Preliminary socio-demographic analysis revealed no differences between the samples, so they were combined ($N = 418$) for analysis. For sample representativeness, comparisons were made with 2001 population Census information for four Chinese-Australian communities, born in China, Taiwan, Hong Kong and Malaysia (these accounting for 94% of our sample). Sample-weighted values were calculated across the population data to provide a reference for sample comparison.

Unless otherwise stated, chi-square tests were used for comparisons of response frequencies where independent groups were concerned. Sign tests (Seigel, 1956) were used to assess differences in labelling frequency between disorders, with dummy coding for each label (yes = 1, no = 0). Each participant applied any label to either, both or neither of the two vignettes (repeated measures). A sign test, in this context, indicates the probability that the total number of positive or negative differences in applying a label across vignettes is attributable to or beyond chance. To explore use of multiple labels for each disorder an exhaustive list of combinations was formed and their frequency in the sample described. To explore how multiple labels were used together and formed distinct groups we applied multiple correspondence analysis (MCA) by use of HOMALS in SPSS. MCA identifies underlying orthogonal dimensions that explain distributions in multivariate contingency tables (Greenacre, 2002). Inertia and Greenacre-adjusted inertia (GAI) were calculated manually. To compare the sample with the Australian community, data from Jorm et al. (1997) were extrapolated from their Figure 1. Frequencies for ‘mental problem’ and ‘emotional problem’ in the Australian sample were summed to match our single category for these.

Separate analyses compared the effects of exposure on labelling for depression and schizophrenia. For each, the two screening questions on personal and social exposure were combined. For depression, any affirmative response designated the ‘depression-positive’ group (DPG) and the remainder (definite negations or expressed uncertainty) formed the ‘depression-negative’ group (DNG). Similar groups were constructed for schizophrenia (SPG and SNG).

In reporting results we refer to Bonferroni-adjusted outcomes to highlight the most robust outcomes. However, we also present results at uncorrected significance levels because the study is largely exploratory and in view of the problem of Type II error in Bonferroni adjustments.

**RESULTS**

**Sample (and representativeness)**

The majority were born in mainland China (72.3%), 10.2% in Hong Kong, 5.0% in Malaysia, 6.6% in Taiwan and the remaining 6% in eight other countries. Our sample was more weighted towards mainland Chinese than the general community (50% of the community). In the sample there were slightly more men than women (45.9%), compared with the small bias towards women in the
general community (53% women). The mean age of the sample was 44.7 years (SD = 13.6), only slightly older (median = 42 years) than the Chinese community (median = 38 years). The mean year of arrival in Australia was in 1989 (SD = 6.69), ranging from 1948 through to 2000. Of the sample, 7.6% arrived prior to 1980, 43.5% between 1980 and 1989 and 48.9% between 1990 and 2000, consistent with the population trends in the immigration of this community.

The majority of the sample was well educated, 59% stating completion of a tertiary degree, 29.6% completing high school or part tertiary, 11.2% completing the lower grades of high school and only 4.6% having only primary or incomplete primary school education. While we could not compare strictly with the Census data, 50% the Chinese community in Australia hold some form of qualifications, 37% postgraduate qualifications, and 37% were continuing their education at the time of the Census. Of the sample, 38.6% were employed in unskilled, trades, clerical work or conducted a small business (e.g. shop-keeping) and 42.6% were employed in work requiring university training. Our employment variable was not directly comparable with those of the Census. Most (91%) of the sample used a Chinese language at home either ‘mostly’ (56.0%) or ‘only’ (34.4%), in keeping with Census estimations of 79.2% of the Chinese community.

Outside Census information, 81% reported their friends to be ‘only’ or ‘mostly’ Chinese, and 89.1% and 92.0%, respectively, maintained and identified with Chinese culture either ‘much’ or ‘very much’. Nevertheless, 51.8% reported to have ‘adopted Australian ways’ and 27.2% identified as Australian ‘much’ or ‘very much’.

**Labels for depression and schizophrenia**

From Table 1 most responses were accommodated by the multiple choices available to subjects; less than 3% of the sample, across the vignettes, endorsed ‘other problem’. The most common labels for depression, in decreasing order of endorsement, included ‘emotional or mental problem’, ‘depression’, ‘stress’ and ‘neurasthenia’. All other labels were endorsed by less than 20% of the sample. For schizophrenia the most common labels were ‘emotional or mental problem’, ‘schizophrenia’ and ‘mental illness’. The labels ‘depression’, ‘stress’, ‘behaviour problem’ and ‘nervous breakdown’ were endorsed by between 20% and 30% of the sample. Qualitatively, although some categories overlap, depression and schizophrenia vignettes were seen as relatively different conditions.

Formal analysis by use of sign tests (Table 1) revealed that the two disorders differed significantly in the frequency of all labels applied to them except for ‘don’t know’ and ‘no problem’. Specifically, depression was differentiated from schizophrenia by significantly higher frequency for ‘physical condition’, ‘emotional or mental problem’, ‘depression’, ‘neurasthenia’ and ‘other’. Schizophrenia, relative to depression, was labelled more frequently as ‘behaviour problem’, ‘nervous breakdown’, ‘stress’, ‘schizophrenia’ and ‘mental illness’. Bonferroni adjustment (alpha = 0.004) suggests the removal of only one significant result (‘nervous breakdown’). Notably, ‘correct diagnosis’ for depression occurred in 51% of the sample while 47% correctly labelled schizophrenia. These ‘diagnoses’ were rarely applied uniquely.

**Use of multiple labels and discrimination of disorders**

Use of combinations of labels across vignettes typified over 60% of the sample. Analysis revealed that 11 combinations were applied to depression and nine to schizophrenia. For depression 7.9% of the sample endorsed ‘depression’ alone while for schizophrenia 14.1% used the ‘schizophrenia’ label alone. There were more multiple labels and lists of labels were longer when applied to the
Table 1
Labels for depression and schizophrenia, frequency (sample %) \((N = 416)\) and comparisons with an Australian sample

<table>
<thead>
<tr>
<th>Label</th>
<th>Dep</th>
<th>Sch</th>
<th>Chi-square</th>
<th>Present sample</th>
<th>Depression</th>
<th>Schizophrenia</th>
<th>Chi-square</th>
<th>Difference in %</th>
<th>Chi-square</th>
<th>Depression</th>
<th>Schizophrenia</th>
<th>Chi-square</th>
<th>Difference in %</th>
<th>Chi-square</th>
<th>Depression</th>
<th>Schizophrenia</th>
<th>Chi-square</th>
<th>Difference in %</th>
<th>Chi-square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical problem</td>
<td>59</td>
<td>9</td>
<td>6.25***</td>
<td>14.2</td>
<td>1.9</td>
<td>2.1</td>
<td>3.19</td>
<td>2.78***</td>
<td>0.20</td>
<td>&lt;1</td>
<td>0.20</td>
<td>&lt;1</td>
<td>0.20</td>
<td>&lt;1</td>
<td>0.20</td>
<td>0.20</td>
<td>&lt;1</td>
<td>0.20</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Emotional/mental</td>
<td>306</td>
<td>207</td>
<td>7.27***</td>
<td>73.6</td>
<td>49.8</td>
<td>49.8</td>
<td>58.56</td>
<td>463.16***</td>
<td>25.76</td>
<td>90.99***</td>
<td>25.76</td>
<td>90.99***</td>
<td>25.76</td>
<td>90.99***</td>
<td>25.76</td>
<td>90.99***</td>
<td>25.76</td>
<td>90.99***</td>
<td>25.76</td>
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<tr>
<td>Behaviour problem</td>
<td>8</td>
<td>94</td>
<td>8.59***</td>
<td>1.9</td>
<td>22.6</td>
<td>22.6</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>–</td>
</tr>
<tr>
<td>Nervous breakdown</td>
<td>49</td>
<td>85</td>
<td>3.57**</td>
<td>11.7</td>
<td>20.4</td>
<td>20.4</td>
<td>–</td>
<td>–</td>
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<tr>
<td>Stress</td>
<td>204</td>
<td>93</td>
<td>8.04***</td>
<td>49.0</td>
<td>22.4</td>
<td>22.4</td>
<td>27.06</td>
<td>102.97***</td>
<td>16.36</td>
<td>82.89***</td>
<td>16.36</td>
<td>82.89***</td>
<td>16.36</td>
<td>82.89***</td>
<td>16.36</td>
<td>82.89***</td>
<td>16.36</td>
<td>82.89***</td>
<td>16.36</td>
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<tr>
<td>Depression</td>
<td>213</td>
<td>111</td>
<td>7.21***</td>
<td>51.0</td>
<td>26.7</td>
<td>26.7</td>
<td>16.52</td>
<td>32.66***</td>
<td>0.63</td>
<td>&lt;1</td>
<td>0.63</td>
<td>&lt;1</td>
<td>0.63</td>
<td>&lt;1</td>
<td>0.63</td>
<td>0.63</td>
<td>&lt;1</td>
<td>0.63</td>
<td>&lt;1</td>
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<tr>
<td>Schizophrenia</td>
<td>20</td>
<td>197</td>
<td>12.70***</td>
<td>4.8</td>
<td>47.4</td>
<td>47.4</td>
<td>4.81</td>
<td>45.83***</td>
<td>20.33</td>
<td>55.29***</td>
<td>20.33</td>
<td>55.29***</td>
<td>20.33</td>
<td>55.29***</td>
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<td>55.29***</td>
<td>20.33</td>
<td>55.29***</td>
<td>20.33</td>
</tr>
<tr>
<td>Neurasthenia</td>
<td>94</td>
<td>50</td>
<td>4.34***</td>
<td>22.6</td>
<td>12.0</td>
<td>12.0</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>–</td>
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<tr>
<td>Mental illness</td>
<td>11</td>
<td>154</td>
<td>11.48***</td>
<td>2.6</td>
<td>37.0</td>
<td>37.0</td>
<td>–</td>
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<tr>
<td>Other problem</td>
<td>11</td>
<td>5</td>
<td>11.33***</td>
<td>2.6</td>
<td>1.2</td>
<td>1.2</td>
<td>–</td>
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<td>–</td>
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<td>–</td>
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<tr>
<td>Don’t know</td>
<td>16</td>
<td>18</td>
<td>1.00***</td>
<td>3.8</td>
<td>4.3</td>
<td>4.3</td>
<td>–10.85</td>
<td>5.21*</td>
<td>0.31</td>
<td>&lt;1</td>
<td>0.31</td>
<td>&lt;1</td>
<td>0.31</td>
<td>&lt;1</td>
<td>0.31</td>
<td>0.31</td>
<td>&lt;1</td>
<td>0.31</td>
<td>&lt;1</td>
</tr>
<tr>
<td>No problem</td>
<td>4</td>
<td>1</td>
<td>0.55*</td>
<td>1.7</td>
<td>1.0</td>
<td>1.0</td>
<td>–</td>
<td>–</td>
<td>–</td>
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</tbody>
</table>

†Comparison with Australian sample in Jorm et al (25); difference in % = sample % applying the label minus Australian % applying the label; for emotional/mental problem the relevant categories were added together for the Australian sample to be compared with the combined category used in our study.

ns not significant; *p < 0.05; **p < 0.01; ***p < 0.001.
depression than schizophrenia. In contrast to schizophrenia, where the longest list of labels was two, for depression there was one combination of five labels, two combinations of four labels and one of three labels, suggesting a more diffuse construct for depression than schizophrenia.

Most common among label combinations for depression were between ‘emotional or mental problem’ and ‘depression’, occurring in 25.9% of the sample, and mostly these two categories were combined with the label ‘stress’ in 19.0% of the sample. ‘Emotional or mental problem’ was also combined with ‘stress’ in 8.8% of the sample, with ‘depression’ in 6.9%, and with ‘neurasthenia’, though less commonly, in 2.6%. Responses to the schizophrenia vignettes revealed greater application of one or two labels. In 5.2% of the sample ‘schizophrenia’ was combined with ‘mental illness’, and in 2.6% with ‘emotional or mental problem’. A small percentage (2.8%) endorsed the labels ‘emotional or mental problem’ together with ‘depression’, and with ‘behaviour problem’ (2.4%). The only other combination observed was ‘emotional or mental problem’ and ‘mental illness’, occurring in 2.4% of the sample.

A multivariate description of labelling was sought by MCA. Scree plots suggested retention of two dimensions, explaining, in the case of depression 34.7% (GAI = 44.7%) of the inertia, and 39% (GAI = 52.2%) in the case of schizophrenia. The 2-dimensional plots appear in Figure 1, above for depression and below for schizophrenia. For depression it is clear that three labels, ‘behaviour problem’, ‘schizophrenia’ and ‘mental illness’, formed one grouping, separated from the labels of ‘stress’, ‘depression’ and ‘emotional or mental problem’. Notably, ‘neurasthenia’ and ‘nervous breakdown’ tended towards this group. ‘Physical problem’ is proximal to the lack of endorsement of ‘emotional or mental problem’. Most other ‘no’ responses are grouped together suggesting low confusion between schizophrenia-type and depression-type interpretations.

Consistently, for schizophrenia (lower panel, Figure 1) the same cluster of ‘schizophrenia’, ‘mental illness’ and ‘behaviour problem’ is evident but with some proximity to ‘nervous breakdown’. This grouping is separated from that of ‘stress’ and ‘depression’, which, to some extent, co-varied with ‘emotional or mental problem’. Both solutions show separation of ‘physical problem’ from other labels but for schizophrenia this is most closely associated with ‘neurasthenia’. Non-endorsement of a label also shows dispersion within schizophrenia. Here lack of endorsement of ‘schizophrenia’, ‘behaviour problem’ and ‘mental illness’ is associated with applying the labels ‘depression’, ‘emotional or mental problem’ and ‘stress’, along Dimension 2. Also, lack of endorsement of these three is associated with applying the labels ‘schizophrenia’, ‘mental illness’ and ‘behaviour problem’. That is, there is a clear distinction between the two clusters of labels – labels in one are associated with non-endorsement of labels in the other. Across the two solutions the placement of ‘neurasthenia’ and ‘nervous breakdown’ is inconsistent. Overall, both analyses suggest clear distinctions between depression-type and schizophrenia-type interpretations of the vignettes.

Comparison with an Australian sample

Labelling frequency comparisons with Jorm et al. (1997) are summarized on the right side of Table 1. For depression there was a higher frequency among Chinese in applying the labels ‘emotional or mental problem’, ‘depression’ and ‘schizophrenia’. No differences were found in applying the labels ‘physical problem’, ‘mental illness’ and ‘don’t know’ (after Bonferroni-adjusted alpha was set at 0.007). For the schizophrenia, while showing a higher relative frequency in the Chinese in applying the labels ‘schizophrenia’ and ‘mental illness’, they also applied the labels ‘emotional or mental problem’ and ‘stress’ more commonly than Australians. No differences were
Figure 1. Two-dimensional solutions from multiple correspondence analysis for the depression and schizophrenia vignettes (legend: • yes responses, ○ no responses; 1 schizophrenia, 2 behaviour problem, 3 mental illness, 4 physical problem.)
observed in applying ‘physical problem’, ‘depression’ and ‘don’t know’ (before any Bonferroni adjustment).

**Comparison of disorder syndromes**
As Table 2 summarizes, there were no differences across the two schizophrenia vignettes in the application of labels (without any Bonferroni adjustment). Only a few differences were evident in labelling subtypes of depression; ‘schizophrenia’, ‘nervous breakdown’ and ‘depression’ were marginally more common in less-somatized depression. Bonferroni adjustment (setting alpha to 0.005) would suggest removal of these effects as possible Type I errors.

**Effects of exposure**
In considering depression, 21.8% responded that a family member/friend had ‘ever’ suffered from it, 12.3% were uncertain and the remaining 65.9% reported no such problem. Moreover, 14.0% considered that they themselves had suffered such a problem, 4.1% were uncertain and 81.9% reported never having this. For schizophrenia, 12.3% responded that a family member/friend had this problem, 7.9% were uncertain and 79.9% reported no such problem. With respect to themselves, 2.0% considered that they had this problem, 2.7% were uncertain and 95.3% reported that they never had it.

To examine the effects of exposure we compared the DPG with the DNG, and the SPG with the SNG (as defined in Analysis). The DPG (26.9% of the sample) relative to the DNG (73.1% of the sample) was less likely to endorse the label ‘physical problem’ (χ²(1) = 4.76, p <.05) and more likely to endorse ‘neurasthenia’ (χ²(1) = 5.28, p <.05), ‘mental illness’ (χ²(1) = 5.94, p <.05) and ‘depression’ (χ²(1) = 11.98, p <.001). Only the last result would be regarded as significant after Bonferroni adjustment. In relation to schizophrenia, no differences were found (before any Bonferroni adjustment) between the SPG (12.7% of the sample) and the SNG (81.3% of the sample).

**Table 2**
Frequencies (and %) of labels applied to the vignettes depicting depression and schizophrenia subtypes

<table>
<thead>
<tr>
<th>Labels</th>
<th>Depression Without somatic</th>
<th>Depression With somatic</th>
<th>Schizophrenia Disorganized</th>
<th>Schizophrenia Paranoid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>No problem</td>
<td>3 (0.7)</td>
<td>1 (0.2)</td>
<td>1.09**</td>
<td>4 (1.0)</td>
</tr>
<tr>
<td>Physical problem</td>
<td>30 (7.2)</td>
<td>28 (6.7)</td>
<td>0.20*</td>
<td>5 (1.2)</td>
</tr>
<tr>
<td>Emotional/mental problem</td>
<td>158 (38.0)</td>
<td>150 (36.1)</td>
<td>2.42**</td>
<td>111 (26.7)</td>
</tr>
<tr>
<td>Behaviour problem</td>
<td>5 (1.2)</td>
<td>2 (0.5)</td>
<td>1.43**</td>
<td>51 (12.3)</td>
</tr>
<tr>
<td>Nervous breakdown</td>
<td>35 (8.4)</td>
<td>14 (3.4)</td>
<td>11.14**</td>
<td>43 (10.3)</td>
</tr>
<tr>
<td>Stress</td>
<td>101 (24.3)</td>
<td>104 (25.0)</td>
<td>0.01**</td>
<td>44 (10.6)</td>
</tr>
<tr>
<td>Depression</td>
<td>116 (27.9)</td>
<td>97 (23.3)</td>
<td>5.13*</td>
<td>57 (13.7)</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>14 (3.4)</td>
<td>4 (1.0)</td>
<td>6.22*</td>
<td>101 (24.3)</td>
</tr>
<tr>
<td>Neurasthenia</td>
<td>51 (12.3)</td>
<td>43 (10.3)</td>
<td>1.32*</td>
<td>25 (6.0)</td>
</tr>
<tr>
<td>Mental illness</td>
<td>8 (1.9)</td>
<td>3 (0.7)</td>
<td>2.54*</td>
<td>80 (19.2)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>5 (1.2)</td>
<td>12 (2.9)</td>
<td>2.73**</td>
<td>11 (2.6)</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01; *not significant.
DISCUSSION

The sample
The sample represents adult Chinese immigrants arriving in Australia from a variety of countries over the last two decades with a bias for mainland Chinese. Comparisons with information from the 2001 Australian population Census revealed insubstantial sample deviation in relation to gender, age, period of arrival, education and language spoken at home. Additional information suggested strong retention of Chinese traditions and identity and that friendship networks were predominantly with compatriots, suggesting cultural comparability of any findings with samples in countries of origin.

Validity of the response range
The labels provided to participants as response choices accommodated most of the sample’s responses. The category of ‘other’ was used rarely and the tendency was to nominate a label rather than to respond with ‘don’t know’. These observations imply that the provided response options captured the majority of the range of possible labelling responses to the vignettes.

Psychological interpretation of the disorder
Within the labelling options, the interpretation of the MDs reflected overwhelmingly the view of an emotional or mental condition rather than a physical disorder. ‘Physical problem’ was nominated by less than 15% of the sample regarding depression and less than 3% regarding schizophrenia. There has been debate, stemming from observations of somatic presentation of MDs (Parker et al., 2001), regarding whether Chinese interpret emotional and mental conditions in somatic terms and whether there is a relative absence ‘psychological mindedness’ and a psychological language for such experience (Lin, 1985; Lin & Cheung, 1999). Our results do not support such assertions.

Common labels, differentiation of disorders and disorder syndromes
The study found a high prevalence of the labels ‘emotional or mental problem’ (74%), ‘stress’ (49%) and ‘depression’ (51%) ascribed to depression. The ‘neurasthenia’ label was applied more sparingly (23% of the sample). The two most common labels given to schizophrenia were ‘emotional or mental problem’ (50%) and ‘schizophrenia’ (47%). ‘Mental illness’ was ascribed by 37%. Notably, ‘neurasthenia’ was not as commonly given as a label to schizophrenia (12%) compared with depression. Nevertheless, the accuracy of applying the labels of depression and schizophrenia uniquely was lower, with only 8% and 14% giving the labels ‘depression’ and ‘schizophrenia’ respectively. Results for depression conflict with Yeung et al.’s (2004) findings with primary care patients but conform closer to Ying’s (1990) observations. Perhaps self-labelling in the context of physical co-morbidity presents a different problem in recognizing depression than is the case where community samples interpret vignettes depicting others in the absence of complicating co-morbidity. In self-labelling, even for severe mental disorders, prolonged periods of ambiguity have been reported (Yarrow et al., 1955), with oscillation between interpretations as mental disorder and rationalizing the experience as transient or insignificant deviations. In regards to schizophrenia, Lam et al.’s (1996) Hong Kong sample provided a contradictory picture, as noted. The proportion of our sample ascribing ‘stress’ to schizophrenia was less than half that of Lam et al. (1996) but the high proportion of our sample labelling it as ‘schizophrenia’ is consistent with the prevailing view of Lam et al.’s sample that psychiatric care would be required.
Other results favour the conclusion that schizophrenia and depression represent distinct disorders in our sample. Labelling depression differed from schizophrenia by significantly higher frequencies for ‘physical problem’, ‘emotional or mental problem’, ‘depression’, ‘neurasthenia’ and ‘other’. Schizophrenia relative to depression was labelled more frequency as ‘behaviour problem’, ‘nervous breakdown’, ‘stress’, ‘schizophrenia’ and ‘mental illness’. The MCA revealed that the ‘depression’ was more likely to be combined with ‘emotional or mental problem’ and ‘stress’ while the ‘schizophrenia’ was more likely to be combined with ‘mental illness’ and ‘behaviour problem’.

There was little to suggest that syndromes of the disorders were discriminated. There was little difference in labelling for depression syndromes and no difference at all for schizophrenia. Of most interest was that the presence of additional somatic features in one of the depression vignettes, such as pressure in the chest, general weakness, loss of energy, and readiness to fatigue, did not lead to any substantially higher frequency of ascribing the label ‘neurasthenia’. Nevertheless, the label was ascribed by as much as 22.6% of the sample to depression, confirming its popularity in the Chinese-Australian public.

**Labelling accuracy compared with Australians**

Comparisons with Australians (Jorm et al., 1997) revealed, importantly, that proportionally more of the sample ascribed the labels ‘depression’ and ‘schizophrenia’ to their respective disorders than Australians. Moreover, for schizophrenia a higher proportion of the sample considered it as a ‘mental illness’. Results raise doubts that healthcare utilization disparities between these groups, at least in Australia, are underpinned by lower knowledge of MDs in Chinese-Australians.

**Exposure**

The ascription of labels to the disorders did not seem to differ appreciably between those with or without personal or social exposure to them. The most robust finding was that ‘depression’ was more commonly applied to depression by those with exposure. Given the low proportions of exposure (but varying in accord with epidemiological rates), at the very least the findings refer to the general public’s perceptions rather than the influence of exposure.

**Implications**

Together, our findings suggest that differences in representation in mental health services between Chinese and other Australians, as found robustly in Victoria and New South Wales (Klimidis et al., 1999; McDonald & Steel, 1997), are unlikely to be based on: a lack of recognition among Chinese-Australians that mental disorders such as schizophrenia (especially) and depression constitute problems in emotional and mental life; the view that the disorders are more poorly understood in Chinese-Australians relative to other Australians; and, the view that severe disorders such as schizophrenia are less likely to be considered an illness by Chinese-Australians. There does not seem to be a relative lack of literacy regarding MDs in this group or indeed insufficient discrimination between major types of MDs. Reasons other than illness recognition and discrimination should be sought for the under-utilization of psychiatric care in this group, including literacy regarding relevant treatments (Lin & Lin, 1978; Tabora & Flaskerud, 1997), practical knowledge regarding services (Tabora & Flaskerud, 1997), attitudes towards MDs (e.g. Lin et al., 1982; Lin & Lin, 1978, 1981), excessive tolerance based on the value of stoicism (Ju-k’ang, 1985;
Loo et al., 1989; Luk & Bond, 1992), and preferences for family management (e.g. Cheung & Lau, 1982; Cheung et al., 1984; Lam & Kavanagh, 1996; Lin et al., 1982; Lin & Lin, 1978).

As well, even if mental disorders are considered ‘psychological’ in nature, they may be linked to less willingness to seek professional help. Cheung (Cheung, 1986), in Hong Kong, indicated that psychiatric patients with ‘psychological’ conceptualizations had longer delays in their first access to professional care, and Ying’s (1990) study of immigrant Chinese women in the USA showed that those conceptualizing their problem as ‘psychological’ were less likely to recommend professional help while endorsing self and social network reliance. Additionally, considering the disorders as ‘psychological’ may be socially damaging in Chinese culture (Parker et al., 2001) and therefore affect the propensity to seek help.

A general assumption underpinning the mental health literacy work is that knowledge of MDs contributes to appropriate help seeking. As suggested by the present findings and in view of the health service access inequities, knowledge-based recognition of a mental disorder may be a necessary but not a sufficient condition for access and uptake of care. Mental disorders such as depression may not be seen by the community to warrant medical and psychiatric attention. Particularly in the case of depression, but also for schizophrenia, the high prevalence of the label of ‘stress’ or ‘mental or emotional problem’ may lead to considerations that these represent normal reactions to problems encountered in everyday life. Naturally following is that their solutions do not necessarily reside in professional care.

Limitations
In this work we focused only on labelling, one part of the explanatory model, applied to vignette descriptions of schizophrenia and depression, although we have collected other data (e.g. perceptions of chronicity, stigma, help resources). Further analysis will explore how these factors contribute to the discrimination of depression and schizophrenia and the relationship of this and perceptions of help resources. In being a cross-sectional survey, our study cannot elucidate how any such factors influence actual help-seeking behaviour. Also, results may not generalize to other immigrants that experience similar low representation in mental health services, particularly in view of their wide variation on cultural and socio-demographic features that may influence their help-seeking.

Summary
We presented vignettes depicting MDs to a broadly representative sample of Chinese-Australians, seeking to explore their labelling of the conditions. Findings suggest relatively high accuracy in ascribing labels and good discrimination between major MDs. Results indicate better performance than a representative sample of Australians. In contrast there is robust evidence of substantially low representation of Chinese-Australians in mental health services. We suggest that low literacy regarding the nature of MDs does not underpin this outcome. While cultural factors may influence recognition of and discrimination among MDs, a variety of other factors may also contribute to access and uptake of mental health care. There is a need to continue to explore how explanatory models and other factors contribute to this, in view of the substantial ‘unmet need’ indicated in Australia (Andrews et al., 2001) and in other Western nations (Kessler et al., 1994) despite comprehensive mental health services.
ACKNOWLEDGEMENTS

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REFERENCES


**APPENDIX – VIGNETTE DESCRIPTIONS USED IN THIS STUDY**

**Shizophrenia – mixed features**
Ms. Chen is 24 years old and lives at home with her parents. She has had a few temporary jobs since finishing school but is now unemployed. Her face and voice are expressionless. She does not respond emotionally in conversation and she seems indifferent when people are talking about distressing matters. Even though her parents know she is alone in her bedroom, they have heard her shouting and arguing as if someone else is there. They cannot understand what she talks about because her speech is incoherent and illogical. They realise she is not taking drugs because she never sees anyone or goes anywhere.

**Shizophrenia – paranoid features**
Ms. Wong is 24 years old and lives at home with her parents. She has had a few temporary jobs since finishing school but is now unemployed. Over the last six months she has stopped seeing her friends and has begun locking herself in her bedroom and refusing to eat with the family. Even though her parents know she is alone, they have heard her shouting and arguing as if someone else is there. When they try to encourage her to do more things, she whispers that she won’t leave home because she is being ‘spied on’ by her neighbour. They realize that she is not taking drugs because she never sees anyone or goes anywhere.

**Depression – with somatic emphasis**
Ms. Lin is 30 years old. During the last two months she has lost interest in many things she usually enjoys such as talking to her friends and watching Chinese television programmes. She is been feeling ‘men’ (depressed) like a feeling of pressure in the chest that causes her general weakness. She loses her appetite and has trouble sleeping nearly every night although she feels easily fatigued and has a loss of energy. She has difficulty in concentrating on her job. She is worried about her problems and thinks she needs to get someone to help with her problems.

**Depression – with less somatic emphasis**
Ms. Wang is 30 years old. She has been feeling unusually sad and miserable for the last few weeks. She has been thinking that she would be better off if she were dead. Even though she is tired all the time, she has trouble sleeping every night. She does not feel like eating and has lost weight. She cannot keep her mind on her work and puts off making decisions. Even day-to-day tasks seem too much for her. This has come to the attention of her boss who is concerned about her lowered productivity.
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