Transcultural psychiatry

Chinese migrants' mental health and adjustment to life in New Zealand

Max W. Abbott, Sai Wong, Maynard Williams, Ming Au, Wilson Young

Objective: The purpose of this study was to identify and assess the relative importance of predictors of the self-rated adjustment and psychiatric morbidity of recent Chinese migrants.
Method: Chinese migrants (n = 271) living in Auckland and aged 15 years or older completed a postal questionnaire that included the Chinese Health Questionnaire (CHQ). The majority of respondents came from Hong Kong and Taiwan.
Results: Most respondents did not report major adjustment problems. The psychiatric morbidity rate was 19%. Major predictors of experiencing problems included rejection by locals, being aged 26–35 years or over 45 years and low English proficiency. Major predictors of poor adjustment included unemployment, low English proficiency, lack of university education, younger age, shorter residency, expectations not met and regrets about coming to New Zealand. Predictors of minor mental disorder included regretting coming, female gender and younger age. For migrants resident 2 years or less, unemployment and underemployment were additional risk factors. Mothers with absent husbands and young people with absent parents also had elevated rates of mental disorder.
Conclusions: Although the overall prevalence of mental disorder for this sample of recent migrants appears to be similar to that of the general population, significant risk factors were identified. The findings extend knowledge of the adjustment and the mental health of migrants and provide potential focal points for primary and secondary prevention interventions.
Key words: Chinese migrants, mental health, migration.

Australian and New Zealand Journal of Psychiatry 1999; 33:13–21

The mental health of migrants is an important area within psychiatry, providing opportunities to identify risk factors for mental disorder and cultural differences in the expression of psychopathology. While there is a body of relevant literature going back many years, according to Rogler [1] this field has been relatively neglected given its significance and potential to advance knowledge concerning human behaviour, adaptation and change. This neglect is of special significance for countries like New Zealand which are characterised by high migration. Almost one in five New Zealanders are foreign born.

A recent review of New Zealand health service utilisation and epidemiological studies concluded that while migrants and refugees do not necessarily have higher rates of mental disorder, some subgroups have very high rates of morbidity [2]. The findings of this review were generally consistent with those of larger bodies of research conducted in North America

Max W. Abbott, Professor and Dean (Correspondence); Maynard Williams, Senior Research Fellow

Faculty of Health Studies, Auckland Institute of Technology, Private Bag 92006, Auckland 1020, New Zealand

Sai Wong, Consultant Psychiatrist; Ming Au, Consultant Psychiatrist

South Auckland Health, Auckland, New Zealand

Wilson Young, Medical Officer of Health

Auckland Healthcare, Auckland, New Zealand

Received 11 February 1998; second revision 14 October 1998; accepted 21 October 1998.

[3] and Australia [4]. From the New Zealand and international literature, the following factors appear to be most frequently associated with high morbidity: pre-migratory trauma and stress, separation from family and/or community, isolation from people of similar ethnicity, inability to speak the language of the host country, unemployment or underemployment, negative public attitudes and rejection, being a child without parents, being adolescent or of advanced age at the time of migration and being a woman from a culture in which gender roles and values differ from the host country.

Chinese have always been the largest non-European/non-Polynesian ethnic group in New Zealand. At the time of the 1991 census, over half of the country's 44 793 Chinese resided in Auckland. From 1981 to 1991, Auckland's Chinese population increased by more than 250%, primarily reflecting a new or 'third' wave of Chinese migration that occurred following major changes to New Zealand immigration policy in 1987 [5]. This wave peaked in 1995 when approximately 25 000 permanent residencies were granted to applicants from Northern Asia, the majority from Taiwan, Hong Kong and China [6].

The only previous New Zealand study of Chinese adult mental health was conducted in Dunedin. This was an epidemiological survey of local- and foreign-born women [7]. The prevalence of General Health Questionnaire-defined mental disorder, administered in both Chinese and English, was similar for the two groups and did not differ from that of their Occidental counterparts. For the migrant sample, higher psychiatric morbidity was found among those who were born in China, migrated to 'follow the lead of their family' or 'family reunion', had lived in New Zealand for 10 years or more or spoke English infrequently.

The post 1987 Chinese migrants, in contrast to earlier waves, included many well-educated professionals and relatively wealthy business people. The great majority came as part of small nuclear families with school-aged children and did not have strong connections to already established communities. In many instances, the major income earner (usually the husband), remained in their country of origin to work or 'commuted', spending variable periods of time in both countries [5].

This survey was undertaken to assess the self-rated adjustment, health and mental health of Chinese migrants resident in Auckland. The present article focuses primarily on an examination of relationships between minor psychiatric disorder and risk factors such as those indicated above. This included consideration of the situation of parents who were living with their children and had an absent spouse. It also considered teenagers and young adults with an absent parent or parents.

Methodology

A number of Chinese community organisations and leaders were consulted about the study and invited to a public meeting where the proposed study was discussed. The meeting was preceded by news items on the local Chinese radio station and in Chinese language newspapers. Listeners and readers were also invited to attend. The meeting was attended by approximately 30 people from a variety of Chinese community, church and professional organisations. Meeting participants gave their support for the study, which had previously been approved by the Auckland Institute of Technology Ethics Committee and the Auckland Chinese Medical Association. Participants also either gave or undertook to obtain the support of their organisation to assist the study by distributing the questionnaire to members or others known to members who were migrants.

The majority of organisations represented at the public meeting subsequently distributed questionnaires. Seven hundred and forty-five, each in a separate envelope, were sent out for distribution in November 1995. Each envelope contained a covering letter describing the purpose of the study in general terms and inviting the recipient to complete the enclosed questionnaire and return it in the stamped, addressed envelope that was also provided. The letter and questionnaire were written in both Chinese and English.

The questionnaire comprised:

1. Sociodemographic and migration-related experiences data form

This form requested information about the respondent's gender, age, marital status, education achieved, religion, country of origin, refugee or migrant status, length of time resident, visits to country of origin since migration, occupation before and after migration, self-rated English proficiency, reading language(s), household composition and district of residence. Other questions sought information regarding each respondent's knowledge about New Zealand prior to migration, changes to expectations since migration, self-rated adjustment and opinion concerning who/what helped this adjustment, post-

migration regrets, perception of locals' attitude toward him/her and experience of major problems.

2. The Chinese Health Questionnaire

The 12-item version of the Chinese Health Questionnaire (CHQ-12) used in this study was developed and validated with Chinese populations in both community and clinical situations [8–10]. It was adapted from the widely used General Health Questionnaire (GHQ) [11] for use as a self-administered screening instrument to identify non-psychotic mental disorders in community settings. It has been well established that depression and minor psychiatric disorders common in Western countries are more likely, in Chinese communities, to present with and include somatic symptoms. In addition, a number of culture specific mental disorders with strong somatic features have been documented in Chinese populations [8]. The CHQ differs from the GHQ in that it includes additional somatic items and has been shown to be a more adequate screening measure for use with Chinese. The CHQ was scored in the usual way with a cut-off of 3/4 to yield cases of minor mental disorder as well as using the Likert method to provide a continuous severity measure.

Statistical analysis

Analyses were undertaken using the statistical software packages SYSTAT (5.1, SYSTAT Inc., Evansten, IL, USA) and SPSS for MS Windows (6.1, SPSS Inc., Chicago, IL, USA) with the level of significance set at the 95% confidence level.

As it was considered likely that many of the independent variables would be interrelated, multivariate linear and logistic regression procedures were employed to assess the relationships between predictor and outcome variables. Analysis of the CHQ scores (Likert method) revealed a significant departure from normality and, therefore, a logarithmic transformation of these data was undertaken prior to conducting parametric statistical tests.

Results

Response rate

Five hundred and ninety-five questionnaires were distributed by Chinese organisations. Two hundred and seventy-one were returned completed, but it is possible that not all of the questionnaires were distributed. Thus, the most conservative estimate of the response rate is 45%.

Because of the large increase in Chinese migration since the 1991 Census and the failure of the Census to record length of residence, it was not possible to use this data source to determine how representative the sample was of Chinese migrants resident in Auckland. Information from the New Zealand Immigration Service that issues residence visas and permits was also of limited value in this regard in that the ethnicity of migrants is not recorded. In addition, a significant number of migrants from Taiwan and Hong Kong, perhaps as many as half, do not permanently reside in New Zealand following the attainment of residency status.

Sociodemographic characteristics

Approximately two-thirds of the sample was female. The average age was 39 years with few older people and 94% aged between 15 and 55 years. Over three-quarters were married. There were no de facto relationships, four widowed and only one divorced respondent. More than half had a tertiary education.

The large majority (90%) came from Hong Kong and Taiwan. Much smaller numbers came from China, Malaysia, Singapore and Macau. Only 1% entered the country as refugees or asylum seekers. The majority were recent migrants with just under half having been resident in New Zealand for 2 years or less and two-thirds resident for 3 years or less.

Only about 20% of respondents had not returned to their country of origin since arriving in New Zealand and a similar percentage had returned more than five times. Approximately half had returned one to three times.

Almost all respondents were living with other people. Of the 120 married women living with children, 58 (48%) had absent spouses. Eight married men living with children had absent spouses. Nine of the 52 single respondents in the youngest age group (15–25 years) were not living with a parent. Of the remaining 43 living with one or both parents, the mother was present in all cases and the father absent for 12 (28%).

Prior to migration two-thirds were in paid employment, the remainder being mainly housewives and students. Following migration, only one-third were in paid employment. A significant change in the level of employment was also evident with 45% employed in business or professions prior to migration and 18% thus employed post migration.

Sixty percent reported that they could communicate in English. The remainder said they could only read, understand or write simple English. Two-thirds reported Chinese as their reading language. The remainder reported that they could read English, often in addition to Chinese.

Migration-related experiences and adjustment

Respondents were almost equally divided between those who considered that they were well informed about New Zealand prior to departure and those who were not. A large majority (83%) indicated that local people were accepting of them. Only 3% reported an unequivocal rejecting attitude although 14% noted a mixture of acceptance and rejection. Eight percent said that their expectations had changed for the worse since migrating and a similar percentage reported regretting coming to New Zealand.

Just under a quarter had experienced major problems. Of the minority that reported problems, language and communication difficulties were mentioned by nine. The same number of respondents mentioned car crashes and employment problems. Four people mentioned racism. Eighty-five percent considered that they were well adjusted. The most frequently cited sources of help in adjusting were self and friends. Relatives, church and community organisations were somewhat less frequently mentioned.

Mental health

Of 264 respondents completing the CHQ, 49 (18.6%) were identified as suffering from a minor mental disorder. The mean score (Likert method) was 8.7 (SD = 5.8).

Risk factors for adaptation, self-rated adjustment and mental health

Experiencing major problems, regretting coming and changes in expectations were all considered to be relevant measures of adaptation to life in New Zealand. It was expected that these measures, along with a number of the other variables outlined above, would be predictive of and risk factors for self-rated adjustment and mental health. Associations among these five outcomes are depicted in Table 1. Variables predictive of general health outcomes and more detailed analyses of the adaptation measures are reported elsewhere [12].

Stepwise multiple logistic regression procedures (p to enter = 0.20 and p to remove = 0.25) were employed to identify sociodemographic and migration-related risk factors for experiencing major problems. Risk factors for self-rated adjustment and CHQ were determined by stepwise hierarchical multiple regression procedures in which the adaptation measures were entered as second-order predictor variables following entry of sociodemographic and migration-related variables. To avoid numerically unstable estimates, categories for some variables were collapsed and, where appropriate, variables with an underlying ordinal scale (e.g. length of residence) were treated as continuous variables.

Major problems

Three predictor variables reached statistical significance in the multivariate analysis: being aged 26–35 years or over 45 years, experiencing rejection from locals and having low English proficiency (see Table 2).

Table 1. Correlations among adaptation, adjustment and mental health measures

	Major problems	Regret coming	Worsened expectations	Adjustment
Regret coming	0.075			
Worsened expectations	0.038	0.316**		
Poor adjustment	0.171**	0.331**	0.329**	
Log CHQ[1]	0.136*	0.243**	0.144*	0.283**

Values are Pearson product moment correlation coefficients (n = 258). [1]Logarithm transformed Chinese Health Questionnaire. *p < 0.05; **p < 0.01.

Table 2. Multivariate logistic regression analysis of major problems (n = 248)

Variable	Major problems	
	Odds ratio	95% Confidence interval
Final step[1]		
Gender		
Male	1.00	
Female	1.61	0.78, 3.30
English proficiency	0.68*	0.49, 0.95
Attitude of locals		
Accepting	1.00	
Rejecting	3.34**	1.51, 7.38
Returns to country of origin	0.84	0.66, 1.07
Age (years)		
15–25	1.00	
26–35	6.23**	1.87, 20.80
36–45	2.08	0.71, 6.12
> 45	3.61*	1.18, 11.00
Country of origin		
Taiwan	1.00	
Hong Kong	0.51	0.25, 1.02
Other	1.47	0.50, 4.36

[1]–2 Log likelihood = 233.61, model Chi-squared = 36.17, df = 9, $p < 0.001$. *$p < 0.05$; **$p < 0.01$.

Self-rated adjustment

From inspection of Table 3 it is evident that higher levels of English proficiency, Chinese only reading language, university education, older age and longer residency in New Zealand were related to good adjustment. Unemployment, expectations not being met and regrets about coming were associated with poor adjustment.

Mental health

Female gender, single or married with spouse absent, Chinese only reading language and younger age were significantly associated with increased CHQ scores in univariate analyses. Three of these predictors (gender, reading language and younger age) remained significant in a multivariate linear regression analysis.

When the three adaptation measures were submitted as a second block of predictor variables, regretting coming emerged as an additional significant predictor with reading language losing significance (Table 4).

Multivariate analyses, in this instance logistic regression, were also conducted with respect to CHQ caseness. Although a number of sociodemographic variables (education, country of origin and post migration occupation) were selected for an initial model, none demonstrated independent significance. Submission of the three adaptation measures as a second block of predictor variables resulted in two (regretting coming and major problems) being included in the final model, although neither reached significance as an independent predictor.

In addition to the whole sample analyses, a number of subsamples were considered with respect to specific hypotheses.

Married women living with children and having an absent spouse (n = 57) were significantly more likely than those with a resident spouse (n = 59) to be classified as suffering from mental disorder (25% *vs* 9%, $\chi^2 = 5.48$, $p = 0.02$).

For young people (15–25 years), there was a significant relationship between CHQ (both caseness and Likert scoring) and whether or not they lived with parents. Percentages of young persons exhibiting minor psychiatric disorder and living with neither parent present, mother only present or both parents present were 50%, 25% and 15%, respectively ($\chi^2 = 4.82$, $p = 0.028$). Corresponding mean CHQ scores for the three groups were 13.5 (SD = 1.8), 9.7 (SD = 1.4), and 7.0 (SD = 1.7) ($F = 5.74$, df = 2/52, $p = 0.006$).

For respondents resident for 2 years or less, several employment related variables were identified as risk factors for mental disorder that were not significant for the sample as a whole or for migrants resident for more than 2 years. Recent residents who were employed prior to migration but unemployed in New

Table 3. Multivariate logistic regression analysis of self-rated poor adjustment (n = 246)

Variable	Odds ratio	95% Confidence interval
Final step[1]		
English proficiency	0.46*	0.25, 0.84
Length of residence	0.56**	0.38, 0.83
Attitude of locals		
Accepting	1.00	
Rejecting	2.45	0.80, 7.52
Older age	0.50*	0.27, 0.93
Reading language		
English/English and other	1.00	
Chinese	0.20*	0.05, 0.73
Employment change		
Employed, same level	1.00	
Underemployed	1.50	0.05, 44.16
Unemployed	4.39*	1.06, 18.14
Remain unemployed	0.32	0.05, 1.84
Education		
School	1.00	
Technical	0.87	0.24, 3.12
University	0.17*	0.03, 0.83
Previous knowledge		
Yes	1.00	
No	1.40	0.47, 4.14
Country of origin		
Taiwan	1.00	
Hong Kong	0.38	0.13, 1.16
Other	1.07	0.14, 8.37
Expectations met		
Yes	1.00	
No	8.56**	1.92, 38.06
Regret coming		
No	1.00	
Yes	5.23*	1.34, 20.28

[1]–2 Log likelihood = 120.722; model Chi-squared = 73.22, df = 15, p < 0.001. *p < 0.05; **p < 0.01.

Table 4. Multivariate linear regression analysis of logarithm transformed Chinese Health Questionnaire

Variable	R^2	β	F	p
Final step*				
Gender	0.038	0.15	5.78	0.017
Age	0.060	–0.15	5.96	0.015
Reading language	0.077	0.11	3.49	0.063
Regret coming	0.108	0.17	7.90	0.005
Major problems	0.119	0.11	3.05	0.082

*F = 6.52, df = 5/241, p < 0.0001, adjusted R^2 = 0.101. Independent variable codings: gender (male: 0, female: 1); reading language (English/English and other: 0, Chinese: 1); regret coming (no: 0, yes: 1); major problems (no: 0, yes: 1).

Zealand had significantly higher ($p = 0.012$) CHQ (Likert) scores (mean = 9.2, SD = 6.0) than those who had secured some form of employment postmigration (mean = 5.8, SD = 4.1). However, of the latter group, those who were previously employed at a business or professional level, but were underemployed post migration, had significantly ($p < 0.001$) elevated CHQ scores (mean = 12.8, SD = 1.7) relative to their counterparts who had maintained occupational parity (mean = 4.6, SD = 2.7).

Discussion

A limitation of the present study arises from the sampling method used and the inability to determine how representative the sample is of Auckland's resident population of Chinese migrants. This is not a situation that can be easily remedied in future studies given the practical difficulties involved in defining the population in question, locating members and securing their cooperation. In addition, significant changes would be required to the information currently collected by the Department of Immigration and additional questions would need to be included in the census.

While recognising this limitation, the methods employed in the present study did yield a relatively large and diverse sample of Chinese migrants from Taiwan and Hong Kong, the major source countries. It also included sufficient numbers in groups of particular interest including 'astronaut' families where one marital partner, usually the husband, works in his or her country of origin while the remainder of the family lives in New Zealand. Given that the primary concern of the study was to identify correlates and predictors of adjustment and mental health rather than determine their prevalence in the population, the issue of representativeness is not so critical.

Although usually sharing a common written language and some broad cultural traditions, Chinese from Hong Kong, Taiwan, Malaysia, China and other parts of the world vary enormously with respect to degree of Westernisation, industrialisation, lifestyle, behaviour and the extent to which their migration is precipitated by push or pull factors. This heterogeneity and the non-random sampling method used in the study necessitate caution in generalising the findings of the present study to other situations. The CHQ, while displaying high reliability and validity in Taiwanese surveys, has yet to be validated in other Chinese populations [10].

Although many Chinese migrants in the present study had high levels of formal education and business or professional backgrounds, it was found that most were characterised by one or more factors considered likely to compromise adaptation and health. In addition to many living in households with an absent spouse/parent, usually the husband/father who continued to reside in Hong Kong or Taiwan, significant members experienced unemployment (35%) or under employment (5%), a variety of problems including difficulty with language and communication (24%), a lack of prior information about life in New Zealand (49%) and ambivalent reactions from locals in terms of acceptance and rejection (17%).

Consistent with previous research, many of the factors just outlined were found to have significant relationships with adjustment and/or mental health. However, when considered along with other variables in the multivariate analyses, a number of these associations diminished in strength and failed to reach statistical significance. It is assumed that the most fundamentally important relationships are those from these multivariate analyses.

In the case of experiencing major post-migration problems, being aged 26–35 years or over 45 years, perceiving rejection or a mixture of acceptance and rejection on the part of locals and low levels of English proficiency appeared to be most important. There was no difference between recent and earlier arrivals with respect to frequency of problems encountered, suggesting consistency over time in terms of migrant exposure to major problems.

The finding that adults aged 26–35 years experienced significantly more problems than other age groups appears to contradict previous research indicating that adolescents and older people are at greater risk [2–4]. Perhaps there are particular pressures on people in this age group arising from establishing new careers and having young families, often without the support of parents and extended family. Long separations of spouses during the resettlement phase may also be an important factor.

Low levels of English language proficiency emerges as a significant correlate of adjustment, experiencing major problems and mental disorder. This was also found in relation to mental health in the Dunedin study of Chinese women and is one of the most consistent findings in the literature [2–4,7].

Reading in Chinese only had a negative influence with regard to CHQ score but, surprisingly, a positive influence on self-rated adjustment. We are unable to explain the latter finding and suspect that the associ-

ation may be spurious, having arisen from the stepwise regression procedure's tendency to capitalise on chance associations between predictor and criterion variables.

Perceived rejection by locals is another variable that has a strong relationship with the experience of major problems. Again this is consistent with previous research on migrant adaptation [3–5]. This relationship was not, however, significant in the case of adaptation or mental health.

It was anticipated from the wider social support literature that parents with an absent partner would be at increased risk for adjustment and mental health problems [13]. This relationship was found for women with respect to mental disorder but not for self-rated adjustment. There were too few men in this situation to examine this hypothesis with respect to them.

Teenagers and young adults residing in a household without one or both parents also had higher rates of mental disorder than those living in other situations. Although a recent, well-controlled Australian study failed to find significant differences in mental health between migrant and other groups of adolescents [14], the present finding highlights the importance of looking at more specific risk factors within groups. Considering the large number of recent Chinese migrant adolescent and young adults with one or both parents absent, this finding calls for further investigation and consideration by Chinese community organizations.

Cheung and Spiers [7] found a higher prevalence of minor mental disorder among longer resident Chinese migrant women in Dunedin. They speculated that this occurred because many had older children who were more assimilated than them and that this gave rise to conflict and psychological disorder. However, in the present study, there appeared to be no significant change over time with respect to mental disorder. Factors that *predicted* mental disorder did change though, with unemployment and underemployment losing their significant association after 2 years.

For the total sample, rates of CHQ defined mental disorder (cases) did not vary significantly by gender or age. While female gender and younger age were statistically significant predictors of higher CHQ Likert scores, the total variance accounted for by them was only 6%, leaving the great majority of variance unexplained. This finding, considered in conjunction with the much stronger associations between other variables and mental disorder within particular subgroups of migrants, underlines the importance of considering migrant groups as heterogeneous populations. Focusing on a group as a whole can obscure subgroups that are at very high risk.

Because of the cross-sectional nature of this study, caution is required in interpreting the various associations between variables or in imputing causation. Nevertheless, many of the associations are consistent with the findings of research with other migrant samples and point to likely risk factors as well as suggest areas for future research and prevention programming. Longitudinal and quasi-experimental intervention designs would enable stronger causal inferences to be drawn and preventive interventions evaluated. Better preparation of prospective migrants; more culturally appropriate definitions of family reunification; community support networks for mothers with absent spouses (satellite husbands), young people with absent parents (parachute kids) and unemployed and underemployed recent migrants; school and community programs to counter prejudice and improved access to English language education are among the measures that would be consistent with the findings and hold some promise for enhancing adjustment and reducing mental health problems.

The focus of this paper has been on correlates and predictors of adjustment problems and mental disorder. However, despite substantial changes in the lives of respondents, including the frequent absence of family members, unemployment and underemployment, most did not report major adjustment problems or regret coming to New Zealand. The prevalence of CHQ-defined mental disorder was similar to that found in general population surveys [15,16] and the Dunedin survey of local born and migrant Chinese women [7].

Acknowledgements

The authors acknowledge financial support for this research from the Auckland Institute of Technology Contestable Research Committee, South Auckland Health and the Auckland Chinese Medical Society. They also thank Sue and Christine Wong, members of a number of Auckland Chinese community organisations and Nicki Pearce who supported the research in a variety of ways.

References

1. Rogler LH. International migrations: a framework for directing research. *American Psychologist* 1994; 49:701–708.

2. Abbott MW. Migrants and refugees. In: Ellis P, Collings CD, eds. *Bulletin on mental health in New Zealand from a public health perspective*. Wellington: Ministry of Health, 1997:255–269.
3. Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees. *Review of the literature on migrant mental health.* Ottawa: Ministry of Supply and Services, 1988.
4. Jayasuriya L, Sang D, Fielding A. *Ethnicity, immigration and mental illness. A critical review of Australian research.* Canberra: Bureau of Immigration Research, 1994.
5. Ho ES, Farmer R. The Hong Kong Chinese in Auckland. In: Skeldon R, ed. *Reluctant exiles: migration from Hong Kong and the new overseas Chinese*. New York: ME Sharpe, 1994.
6. Thompson A. Slamming the door. *Listener* 1997; 19 April:24–25.
7. Cheung P, Spiers G. Psychiatric morbidity among Dunedin Chinese women. *Australian and New Zealand Journal of Psychiatry* 1992; 26:183–190.
8. Cheng TA, Williams P. The design and development of a screening questionnaire (CHQ) for use in community studies of mental disorders in Taiwan. *Psychological Medicine* 1986; 16:415–422.
9. Cheng TA, Williams P. A pilot study of mental disorders in Taiwan. *Psychological Medicine* 1985; 15:195–203.
10. Chong MY, Wilkinson G. Validation of 30- and 12-item versions of the Chinese Health Questionnaire (CHQ) in patients admitted for general health screening. *Psychological Medicine* 1989; 19:495–505.
11. Goldberg DP, Williams P. *A user's guide to the General Health Questionnaire*. London: NFER-Nelson, 1988.
12. Abbott MW, Wong S, Williams M, Au M, Young W. Recent Chinese migrants'health, adjustment to life in New Zealand and primary health care utilisation. *Journal of Disability and Rehabilitation* (in press).
13. Cohen S, Syme LS, eds. *Social support and health*. New York: Academic Press, 1985.
14. Klimidis S, Stuart G, Minas IH, Ata AW. Immigrant status and gender effects on psychopathology and self-concept in adolescents: a test of the migration-morbidity hypothesis. *Comprehensive Psychiatry* 1994; 35:393–404.
15. Abbott MW. Mental health. In: Trlin A, Spicer J, Walton JA, eds. *Social science perspectives on health in New Zealand*. Palmerston North: Dunmore Press, 1994:119–140.
16. Mann JI, Nye ER, Wilson BD, Russell D, Wilson N, Herbison P. *Life in New Zealand Commission Report, Vol. 5: Health*. Dunedin: University of Otago, 1991.