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The Mental Health of Filipino-born women 5 and 14 years after they have given birth in Australia: A longitudinal study

It has been suggested that 'Filipino brides may be 'at risk' of social isolation and mental health impairment after migrating to Australia to marry Australian men. This paper examines the mental health of a cohort of Filipino and Australian-born women who became mothers in Australia, and investigates the relationship between place of birth, social network size and symptoms of poor mental health. The data was taken from the Mater-University of Queensland Study of Pregnancy (MUSP), a longitudinal study of mothers and children instigated in 1981. Symptoms of anxiety and depression and social network size were assessed at their first clinic visit (FCV), and followed up at 5 and 14 years. Filipino-born mothers had smaller social networks at the birth of their child, and reported more symptoms of anxiety and depression at FCV and 5 years follow-up (F/U), but did not differ from their Australian counterparts 14 years later. We conclude that Filipino-born migrants experience greater distress and poorer social networks than Australian-born mothers in the early years after they have given birth to a child in Australia. Further, that over a period of time, the decrease in mental health symptoms indicates the adaptation of Filipino-born women to their new environment.

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Introduction

Although interest in the mental health needs of migrants is not a new phenomenon in Australia, there has been renewed attention paid to the mental well-being of some migrant groups (Department of Health and Aged Care 1999; Fuller 1998; Minas et al. 1996; Minas and Sawyer 2002; Raphael 1993; Raphael 2000). There are at least two reasons for this. First, attention to marginal populations is part of a long-term agenda in Australian national mental health policy which now emphasises the value of promoting mental well-being among 'at risk' groups (Department of Health and Aged Care 2000a; Department of Health and Aged Care 2000b; Department of Health and Family Services 1998). Secondly, the answers to some research questions in the area of migrant health remain elusive. These include whether the act of migration may itself constitute a factor underpinning the onset of psychiatric disorders (Minas and Sawyer 2002; Roler 1994).

While it has been suggested that mental illness is a serious public health problem amongst migrants, the Australian evidence shows a lack of consensus regarding whether migrants have higher, the same or lower rates of mental health problems than the Australian population (Jayasuriya et al. 1992; Krupinski and Burrows 1986; Minas and Sawyer 2002). Some vulnerable groups, such as Indochinese and Vietnamese refugee children, appear to have lower rates of mental health problems, with findings consistent across several studies (Krupinski and Burrows 1986; McKelvey et al. 2002). Other groups, such as Iranian migrants in Sydney, Latin American migrants in New South Wales, and Filipino migrants in Queensland, have been found to be at greater risk of mental health distress (Thompson et al. 2002a; Thompson et al. 2002b).

Amongst these groups, the case of women who migrate from the Philippines stands out. Research suggests that the majority of women who migrated between the 1960s and late 1980s arrived as spouses of non-Filipino-born men (Kelaheer et al. 2001b). These women, often in their 30s, generally married men who were significantly older than themselves (Kelaheer et al. 2001b; WoelzStirling et al. 2000). Other evidence suggests that such inter-cultural arrangements contribute to a stereotype that Filipino brides are money hungry or helpless victims of Australian men. These men are perceived to have difficulties finding wives using more conventional strategies, are often considered less desirable than other Australians, and, as a consequence, may fail to find an Australian partner (Kelaheer et al. 2001a; Kelaheer et al. 2001b).

'Filipino brides' have been found to be considerably younger than their partners, to have a higher level of education than other migrants, and originate from a communalistic culture and society (Thompson et al. 2002b). Each of these factors individually has been suggested as a possible cause of distress amongst migrants (Minas et al. 1996; Minas and Sawyer 2002). Therefore, it is no surprise that these factors may impact on the mental wellbeing of these women after they migrate and marry an Australian (Kelaheer et al. 2001a; Kelaheer et al. 2001b; Thompson et al. 2002a; Thompson et al. 2002b; Woelz-Stirling et al. 2000).

In contrast to those emigrating to other countries, Filipino migrants to Australia share a unique set of factors that influence their migration patterns. In the United States and Hawaii, a long history of migration from the Philippines has attracted labourers and their families for almost a century (Braun and Browne 1998). In Hong Kong and Japan, Filipino women have traditionally migrated as domestic workers (Hoiroyd et al. 2001; Ohara Hirano 2000). In these countries, research on the mental health of this community group is varied (Bagley et al. 1997; Braun and Browne 1998; Cimmarusti 1996; Holroyd et al. 2001; Ohara Hirano 2000). Some of the common findings of these studies suggest that mental health problems amongst Filipino migrant women are more prevalent when social and family networks are poor, and that a negative perception of mental health problems in the Philippines inhibits timely access to mental health services (Bagley et al. 1997; Braun and Browne 1998; Holroyd et al. 2001). On the other hand, social support networks have been found to be positively associated with the development of good coping skills amongst Filipino migrants (Bagley et al. 1997; Holroyd et al. 2001; Kelaheer et al. 2001a; Ohara Hirano 2000). In the USA and some other countries, Filipino communities have formed and brought about the benefits of stronger group networks. These networks have offered formal and informal support to community members experiencing symptoms of mental health problems (Holroyd et al. 2001).

In Australia, research has focused on some of the consequences of being a Filipino bride: such as the impact of financial arrangements in determining distress amongst married couples, and the extent of male domestic violence within these inter-cultural marriages (Bagley et al. 1997; Cimmarusti 1996; Edman et al. 1998; Hoiroyd et al. 2001). Only a few studies have investigated the strength of social networks within the Filipino community in Australia. These studies suggest that in Australia, networks within the Filipino migrant community are weak compared with those in overseas countries, and have proved to be much less effective than networks accessed through a non-Filipino husband. It is the latter which have been found to be positively associated with greater social adaptation to Australian society (Brown et al. 1997; Kelaher et al. 2001b). As with the overseas experience, Filipino-born women in Australia find it difficult to approach mental health services. Further however, it seems that in Australia the stigma attached to mental illness in the Philippines is coupled with that of being a Filipino bride. The combination of both forms of stigma appears to be a major barrier for women in need of advice on relationship difficulties, and is negatively associated with timely access to mental health services in rural areas (Kelaher et al. 2001a).

Finally, recent Australian research has examined the relationship between employment, marital status and mental health amongst Filipino-born women in Queensland and New South Wales (Brown et al. 1997; Kelaher et al. 2000; Kelaher et al. 2001b; Thompson et al. 2002a; Thompson et al. 2002b; Woelz-Stirling et al. 2000). Employment, or rather underemployment in a much lower prestige position than that previously held in the Philippines, appeared to be a cause of distress (Brown et al. 1997; Thompson et al. 2002a; Woelz-Stirling et al. 2000). However findings on the relationship between marital status and mental health are not consistent. Some research indicates that Filipino-born women married to non-Filipino men were better adjusted to Australian life than Filipino-born women married to Filipino men (Kelaher et al. 2001b). While it has been suggested that married Filipino-born women experienced poorer mental health, elsewhere it is suggested that being single, unhappy with life in Australia, and having had major financial and personal difficulties were still the greatest risk factors for the development of mental health problems (Thompson et al. 2002a; Thompson et al. 2002b).

The majority of Filipino migrants to Australia have been female, married older non-Filipino men, distanced from family networks, surrounded by negative public attitudes, and lack of recognition for their qualifications (Kelaher et al. 2000; Kelaher et al. 2001b; Thompson et al. 2002a; Thompson et al. 2002b; Woelz-Stirling et al. 2000). A combination of these factors, together with the lack of an effective social network, changes in marital and financial status, as well as underemployment, appear to contribute to greater mental health distress (Thompson et al. 2002a). There have been no studies in Australia of changes in the mental health status of Filipino-born women over an extended period. Evidence shows however, that time may be a crucial factor for migrants adjustment in the host society (Berry 1997; Berry 2001). This paper aims to address this deficit, by examining the mental health status of Filipino-born mothers in Brisbane, Queensland, over a time span of 14 years. Symptoms of anxiety and depression will be analysed in the light of these women's socioeconomic status and social support networks.

Methods

The data for this research was taken from the Mater-University Study of Pregnancy (MUSP): a prospective, longitudinal study of mothers and children carried out in Brisbane, Australia since 1981. There were five principal phases to the study. Of the 8,556 consecutive patients invited to participate in the study at the Mater Misericordiae public hospital, 8,458 agreed and were interviewed at their first clinic visit (FCV)(Phase one). Of these, 7,661 gave birth to live singleton babies at the hospital. The mothers were interviewed again at three to five days (Phase two) and six months (Phase three) after the birth. Response rates for the three occasions were respectively 99%, 95% and 89% of the overall sample. Mothers and their children were followed up at five years (Phase four) and 14 years after the birth of the child (Phase five). Almost 70% of mothers and children agreed to be re-interviewed at those follow-ups (F/U).

Data analysed for this paper was taken from four of the principal phases of the study, and included the questionnaires at first clinic visit, birth, five and 14 years F/U. Age of mothers and partners, marital status, education and levels of occupation were examined at FCV. The adequacy of social networks was assessed at birth, whereas the mental health of the mother was assessed at FCV, five and 14 years F/U.

In examining changes in mental health over time, we needed to ascertain that loss of participants at follow-ups would not produce biased results. It is possible, for example, that those lost at follow up may represent a cohort of Filipino- born mothers with limited social networks, lower socio-economic status and poorer mental health. If this were the case for the Filipino-born mothers from this study who were lost to F/U then our findings would tend to under-represent the social and mental health problems of this particular group. The initial data presented in this paper consists of an attrition analysis to determine that the Filipino-born mothers lost at follow-ups and those retained, had similar characteristics when compared with the sample of the Australian mothers. The results are then discussed in the context of the impact of attrition.

Measurements

The 8,458 women interviewed at their first clinic visit (FCV) at the Mater Misericordiae Hospital comprised women born in 82 different countries and in Australia. The question 'In which country were you born?' was asked at FCV. Women from the 'Philippines' were identified in the analysis and compared with mothers born in 'Australia'. At FCV, there were 87 Filipino-born mothers who agreed to be interviewed. Of these, nine were married to Filipino men and were excluded from the analysis.

Socio-economic data chosen for this analysis was collected at FCV and included the age of mothers and their partners, marital status, mothers education and occupation. Information on the size of the mother's social network was obtained at the second interview, three to five days after the birth of the baby.

The literature suggests age may be associated with mental health distress amongst Filipino migrant women in Australia (Woelz-Stirling et al. 2000), The questions 'What is your age' and 'What is your husband or partners age' aimed to ascertain mothers

and partners ages and were used as continuous measures. A continuous measure of age difference' was also obtained by subtracting the mother's age from that of the partner.

The question 'What is your present marital status?' comprised the following original categories: 'single', 'living together', 'married', 'separated/divorced' and 'widowed'. For the purpose of this analysis, the 'living together' and 'married' categories were collapsed into 'currently married' and the 'single' 'separated/divorced' and 'widowed' were collapsed into the 'not currently married' category. Eight items developed from the Interview Schedule for Social Interaction (ISSI) (Henderson et al. 1981) were used to ascertain the size of the social network at birth. The eight items, presented in Appendix One, include the number of close friends, relatives and persons who could help in case of health problems, financial concerns and important decisions. In constructing the scale, all items were reversed, so that a high score represented a large social network. The scale achieved a Cronbach's Alpha value of .92. The mothers' responses on the eight items were summed and averaged. For this analysis, the mean scores were recoded into two new categories: 'poor' (low through to 27.4) and 'normal' (27.41 through to high).

The level of the mother's education was ascertained through the question asked at FCV: 'At what level did you complete your education?' Answers could be selected amongst seven options ranging from 'Opportunity, deaf school' to 'University'. For the purpose of the attrition analysis, the mother's education at FCV was divided into two categories: 'complete high school +' and 'incomplete high school'. The level of occupational prestige was obtained from the question: 'What work do you usually do for a living?' Occupational prestige was assessed by using the ranking of occupational status and prestige developed by Congalton (1969). Congalton ranked 135 occupational categories into four major status groups. In this study the occupational categories were coded simply as 'high' or 'low' in status.

Changes in mental health status over time were measured through the use of anxiety and depression items from the Delusions-Symptoms- States-Inventory: State of Anxiety and Depression (DSSI/SAD) (Bedford and Foulds 1978). The DSSI/SAD is a self-report measure for the detection of major symptoms of depression including explicit and non-explicit suicidal thoughts (Bedford and Foulds 1978). Validity of the DSSI/ SAD has been tested in a study of 25 clinicians (Bedford and Foulds 1977), and in another of 200 persons (Bedford and Foulds 1978; Rubino et al. 1997). More recent studies also suggest the DSSI/ SAD is valid for detecting major depressive episodes (Rubino et al. 1997). The instrument correlates well and shares items with other measures of depression and anxiety, such as the Edinburgh Postnatal Depression Scale (EPDS) and the Hospital Anxiety/Depression Scale (HADS) (Najman et al. 2000). The DSSI/SAD shares with other self-report measures the disadvantage of not detecting less severe episodes. It does not constitute a clinical diagnosis of depression. The instrument was used at FCV, five and 14 years F/U and included the two seven item Depression and Anxiety subscales presented in Appendix Two. Cronbachs Alpha values of .78, .86 and .88 were obtained respectively at FCV, five and 14 year F/U for the Depression subscale. Alpha values of .76, .83 and .84 were obtained respectively at FCV, five and 14 year F/U for the Anxiety subscale (Najman et al. 1991). For the attrition analysis, a 10% cut-off was used to ascertain differences in mental health status between mothers lost and retained at the 14 year F/U. For the longitudinal

observation of mothers' mental health status, the Anxiety and Depression subscales administered at each of the three phases of the study were used as continuous measures. Symptoms of anxiety and/or depression were counted if the mothers said they had experienced each symptom 'all the time, most of the time or some of the time. Up to seven symptoms were recorded for each subscale.

Data analysis

Chi square analysis was performed to determine whether participants lost at the 14 year F/U could be differentiated according to their country of origin. This group was assessed according to their marital status, social network size at the birth of their child, education and occupational prestige. Levels of mothers anxiety and depression at FCV were also obtained to determine whether there were differences in mental health status between those lost at F/U and those retained in the study. Difference in mean age between Filipino and Australian-born mothers and their partners was also obtained in order to gauge an understanding of the age differences between the two groups and the respective partners. Analysis of variance (ANOVA) and covariance was used to assess differences in means between the two comparison groups. Adjusted means were obtained with a Multiple Classification Analysis (MCA) using the ANOVA procedure of SPSS (SPSS and Inc 1990)'. Means were adjusted for maternal age at entry of the study and maternal education. For this analysis, the seven options for maternal education, which ranged from Opportunity, deaf school to University, were used as a continuous variable.

Results

Attrition at 14 years follow-up

Table 1 examines the characteristics of Filipino- born mothers lost at F/U, and compares these with the characteristics of the most numerous group represented by mothers from Australia.

Table 1: Level of attrition at 14 yrs F/U by country of origin

<u>Attrition at 14 yrs</u>	<u>Philippines</u>	<u>Australia</u>
	<u>% (n=78)</u>	<u>% (n=6176)</u>
Lost at F/U	38.5	35.6
Still in the study at 14 yrs	61.5	64.4
$\chi^2 = .277$ df 1 p = ns		

Table 2: Mean age and attrition at 14 years by country of origin

<u>Age</u>	<u>Philippines</u>			<u>Australia</u>		
	<u>Lost at F/U</u>	<u>Stayed at F/U</u>	<u>Sig**</u>	<u>Lost at F/U</u>	<u>Stayed at F/U</u>	<u>Sig**</u>
	<u>(n=30)*</u>	<u>(n=48)*</u>	<u>p<</u>	<u>(n=2198)*</u>	<u>(n=3978)*</u>	<u>p<</u>
Mean age of mother at FCV	28.7	28.4	NS	23.4	24.5	.001
Mean age of partner at FCV	40.0	42.3	NS	26.8	27.6	.001
Mean age difference between partners	11.2	13.7	NS	3.2	2.9	.010

*Numbers vary due to missing values

**ANOVA test of significance was used to assess p-values

Clii square test of significance was used to assess attrition p-values

Table 3: Level of attrition at 14 years F/U by country of origin

	Philippines		Australia	
	Lost at F/U (n=30)*	Stayed at F/U (n=48)*	Lost at F/U (n=2184)*	Stayed at F/U (n=6176)*
Attrition at 14 yrs				
Marital status at FCV*	%	%	%	%
Currently married	93.3	97.9	77.3	88.2
Not currently married	6.7	2.1	22.7	11.8
p-value** =	NS		p<.001	
Social network size at birth	%	%	%	%
Normal	81.0	89.4	88.9	93.1
Small	19.0	10.6	11.1	6.9
p-value** =	NS		p<.001	
Education at FCV	%	%	%	%
Complete high +	86.7	87.5	76.9	83.0
Incomplete high	13.3	12.5	23.1	17.0
p-value** =	NS		p<.001	
Occupation at FCV	%	%	%	%
Higher	24.0	34.3	18.4	20.7
Lower	76.0	65.7	81.6	79.3
p-value** =	NS		p<.04	
Anxiety at FCV	%	%	%	%
Non anxious	89.3	85.4	81.6	88.6
Anxious	10.7	14.6	18.4	11.4
p-value** =	NS		p<.001	
Depression at FCV	%	%	%	%
Non depressed	100.0	95.8	90.6	95.2
Depressed	0.0	4.2	9.4	4.8
p-value** =	NS		p<.001	

*Numbers vary due to missing values

** Chi square test of significance was used to assess attrition p-values

The percentage of mothers lost at the 14 year F/U were 35.6% for mothers from Australia and 38.5 for mothers from the Philippines.

Table 2 indicates that attrition at 14 years F/ U was not associated with either the age of mothers from the Philippines, the age of their partners or the age difference between partners. Although the loss to follow-up of the Australian mothers appeared to disproportionately involve younger mothers, younger partners of mothers, and women with a greater age difference between themselves and their partners: these differences are of modest magnitude. It is also relevant to note that while Filipino-born mothers were about four years older than Australian-born mothers, the partners of Filipino-born mothers were about 14 years older than partners of Australian-born mothers.

Similar inferences can be made in relation to the whether socio-economic status, social network size, and anxiety and depression were associated with attrition (Table 3). Analysis showed that there was no statistically significant association between marital status, the size of the social network, education, level of occupation, anxiety, depression and loss at F/U of Filipinoborn women. Although all of the above appeared to predict loss at F/U of Australian mothers, the differences in percentages

amongst the Australian-born women do not appear to be large. Of course the small size of the Filipino-born sample makes it difficult to detect such a difference, and an inspection of the trend over the variables in Table 3 suggests that if the Filipino-born sample were larger, there may have been differences in some variables. The overwhelming majority of Filipino-born mothers were not emotionally impaired either at entry to the study, or at the 14 years F/U. This finding stands in contrast to the Australian-born mothers, for in this group those lost at F/U had poorer mental health than those remaining in the study.

Mental health status over time: anxiety and depression

In comparing mothers born in the Philippines and Australia, Table 3 also shows that a greater percentage of the Filipino-born women were married, had completed high school, and had smaller social networks.

Table 4: Mother’s mean number of reported symptoms of anxiety at FCV, 5 and 14 years F/U by country of origin

Philippines and Australia			
Anxiety at FCV	N	Mean	Mean adjusted for covariates*
Philippines	46	2.06	2.42
Australia	3429	1.48	1.47
p-value =		<.01	<.001
Anxiety at 5 yrs	N	Mean	Mean adjusted for covariates*
Philippines	46	2.43	2.67
Australia	3429	1.64	1.64
p-value =		.004	<.001
Anxiety at 14 yrs	N	Mean	Mean adjusted for covariates*
Philippines	46	1.93	2.12
Australia	3429	1.81	1.80
p-value =		ns	ns

*Means were adjusted for the following Covariates: maternal age and education at entry to study

One-way ANOVA tests were carried out to compare the mean number of reported symptoms of anxiety between mothers born in the Philippines and Australia (Table 4). Up to seven symptoms of anxiety were recorded for the women. Non-adjusted and adjusted means showed that Filipino-born mothers had a higher number of symptoms of anxiety at both FCV and five years F/U. These differences in anxiety symptoms remained, even after controlling for socio-economic variables such as maternal age and education at FCV. Filipino-born mothers reported a mean number of anxiety symptoms of between 2.42 (FCV) and 2.67 (five yrs F/U), compared with the Australian born mothers, whose mean number of reported symptoms ranged between 1.47 (at FCV) and 1.64 (five yrs F/U). Adjusted and non-adjusted mean number of symptoms of anxiety converged towards the Australian level at the 14 years F/U.

Table 5: Mother's mean number of reported symptoms of depression at FCV and 14 years F/U by country of origin

Philippines and other countries			
Depression at FCV	N	Mean	Mean adjusted for covariates***
Philippines	46	1.17	1.35
Australia	3435	0.82	0.81
p-value =		.055	.007
Depression at 5 yrs	N	Mean	Mean adjusted for covariates***
Philippines	46	1.21	1.35
Australia	3435	0.78	0.77
p-value =		<.04	.003
Depression at 14 yrs	N	Mean	Mean adjusted for covariates*
Philippines	46	0.80	1.01
Australia	3435	0.88	0.87
p-value =		ns	ns

*Means were adjusted for the following covariates: maternal age at entry to study and maternal education

One-way ANOVA tests were performed to compare means between the depression of the mothers at FCV, five and 14 years F/U for both the Filipino and Australian-born mothers (Table 5). Filipino-born mothers reported a greater number of symptoms of depression. Significant, although borderline, differences at FCV and at five years disappeared at 14 years F/U. These patterns remained after multivariate analysis of variance was performed to adjust for sociodemographics. Differences in the mean number of symptoms of depression were smaller than those detected for anxiety: 1.35 for Filipino-born mothers compared with 0.78/0.77 for Australian-born mothers. There were no differences in number of reported symptoms of depression at the 14 years F/U.

Discussion

The MUSP data supports previous findings about the small size of social networks, age difference between partners and greater levels of education of Filipino compared with Australian-born mothers (Kelaheer et al. 2001b; Thompson et al. 2002b; Woelz-Stirling et al. 2000). Unlike other Filipino migrants in Queensland, (Thompson et al. 2002a; Thompson et al. 2002b) Filipino-born mothers from the MUSP study did not appear to be underemployed. When Filipino-born mothers undertook paid work, they were employed in higher status occupations than Australian-born mothers, At both FCV and five years F/U, Filipino-born mothers reported a greater number of symptoms of anxiety and, to a lesser degree, depression. There were no differences in the levels of anxiety and depression reported by Filipino and Australian- born women in the 14 years F/U.

This data does not lend itself to simple interpretation. Our findings support existing literature about a 'type' of Filipino migrant woman in Australia: educated, but with limited social networks, and greater levels of distress compared with the Australian population (Thompson et al. 2002a; Thompson et al. 2002b). Amongst the Australian mothers in this study there did not appear to be changes in symptoms of mental health problems over the 14-year follow-up. Distress reported by Filipino- born mothers, on the other hand, remained for up to five years after they gave birth to a child in

Australia, and declined over time towards the same level of the Australian-born mothers.

It might be suggested that the good mental health of Filipino-born mothers at 14-year F/U is a consequence of an improvement in their social connectedness (social networks) over the time they were resident in Australia. Such an interpretation is not consistent with other data (presented elsewhere), which pointed to few significant differences in network contacts for Filipino-born mothers both shortly after the birth and at the 14-year F/U.

Although the magnitude of the difference is modest, our study indicates that the mental health status of Filipino-born mothers was initially worse. The degree of distress experienced by these women is difficult to ascertain from our findings. It is believed, for example, that Filipino-born women under-report symptoms of mental health problems, because of the embarrassment attached to their status as 'Filipino brides' (Kelaher et al. 2001a; Thompson et al. 2002b). Also, the instrument used to detect symptoms of depression and anxiety in this study may be less sensitive than others, which raises the possibility that our results are conservative, and that the mental health of Filipino-born women in Queensland is poor.

Our findings should be interpreted with caution, as there are some limitations to the study. The first Limitation concerns whether there might be a cultural component to the response of Filipino-born mothers to our questions about their mental health. Although in general Filipino migrants have good English language competence, the measure used to assess mental health may be language dependent. It is therefore possible that the Filipino-born women in the study may interpret symptoms of anxiety and depression differently. Self-reporting a mental health symptom may depend on how culturally acceptable it is to experience episodes of emotional and mental health impairment. Previous research has outlined that Filipino-born women in Queensland admit they face 'emotional' problems in Australia (Kelaher et al. 2001a; Thompson et al. 2002a; Thompson et al. 2002b). By the same token, they conceal mental' problems, because of the stigma attached to 'madness' in Filipino society (Kelaher et al. 2001a; Thompson et al. 2002a; Thompson et al. 2002b). It is therefore possible that mothers may be reticent to admit symptoms of mental' health impairment, whereas they may have no reservations about reporting 'emotional' problems.

Another limitation of the study may be the possible bias resulting from loss at F/U. However, comparison of Filipino-born mothers lost at follow-up with those remaining in the study, indicated no significant differences. Even if we allow for the small sample size, it remains the case that any apparent differences between these groups were generally of modest magnitude. Indeed, in contrast with Australian-born mothers lost at F/U, who appeared to experience poorer mental health than those still in the study 14 years later, there is no indication that Filipino-born mothers lost at F/U had poorer mental health compared with those who remained in the study.

Despite the above limitations, a strength of this study is in the observation of the mental health status of this migrant group over a 14 year period. The study's longitudinal design has allowed a long-term observation of the relationship between immigration and the mental health of this specific migrant group.

Conclusions

Filipino-born mothers in this study have relatively high education and occupation status, considerable age differences between themselves and their partners, and smaller social networks. Some of these factors are believed to trigger mental health problems amongst this group. Anxiety and depression are initially higher than for Australian-born mothers. Over time, the reporting of symptoms of anxiety and depression in Filipino-born mothers appears to decline and harmonise with the rate experienced by Australian-born mothers.

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Endnotes

Regression analysis (eg. logistic/linear regression) was not undertaken, because the number of cases in some of the cells was too few to permit such an analysis

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Appendix 1	
Table 6: Original questions used in the scale 'Mother's social network size at birth' (Mothers' Sample)	
B43*	How many close friends do you have? (Responses: More than 15=1, 11-15 = 2, 6-10 =3, 3-5=4, 1-2=5, None=6)
B45	How many friends do you have whom you could visit at any time without waiting for an invitation? (Responses: More than 15=1, 11-15 = 2, 6-10 =3, 3-5=4, 1-2=5, None=6)
B47	How many of your relatives do you see regularly (Not counting your partner and children)? (Responses: More than 15=1, 11-15 = 2, 6-10 =3, 3-5=4, 1-2=5, None=6)
B49	To how many relatives do you feel really close (Not counting your partner and children)? (Responses: More than 15=1, 11-15 = 2, 6-10 =3, 3-5=4, 1-2=5, None=6)
B50	In general, do you feel you have a close relationship with your relatives (Not counting your partner and children)? (Responses: Very close=1, Close = 2, Not close=3, No relationship at all=4)
B51	How many people are there whom you could turn to for help if you were having personal problems (Not counting your partner and children)? (Responses: Five or more=1, Four=2, Three=3, Two=4, One=5, None=6)
B53	When you have to make an important decision (about such things as finances, work or moving house), how many people are there who could help you make such a decision? (Not counting your partner and children)? (Responses: Five or more=1, Four=2, Three=3, Two=4, One=5, None=6)
B54	If you had a serious health problem and needed to get some help around the house, how many people do you know who would help you? (Not counting your partner and children)? (Responses: Five or more=1, Four=2, Three=3, Two=4, One=5, None=6)
Cronbach's ALPHA = .92	
*The letters and the numbers refer to the questions as they appear in the original Questionnaire	

Appendix 2	
Table 7: Depression and anxiety items	
Depression scale	
Now we are interested in how you have been feeling recently	
Responses: All the time/Most of the time/Some of the time/Rarely/Never	
A22*	Have been so miserable had difficulty sleeping
A25	Have been depressed without knowing why
A26	Have gone to bed not caring if ever woke up
A28	Have been so low in spirit that have sat up for ages doing absolutely nothing
A30	Future seems hopeless
A32	Have lost interest in just about everything
A34	Have been so depressed that have thought of doing away with self
Cronbach's ALPHA = .78 (at FCV) .86 (at 5 yrs F/U) and .88 (at 14 yrs F/U)	
Anxiety scale	
Now we are interested in how you have been feeling recently	
Responses: All the time/Most of the time/Some of the time/Rarely/Never	
A21	Have worried about every little thing
A23	Have been breathless or had a pounding of my heart
A24	Have been so worked up that couldn't sit still
A27	For no good reason have had feelings of panic
A29	Have had a pain or tense feeling in neck or head
A31	Worrying has kept me awake at night
A33	Been so anxious that couldn't make up mind about the simplest thing
Cronbach's ALPHA = .76 (at FCV) .83 (at 5 yrs F/U) and .84 (at 14 yrs F/U)	
*The letters and the numbers refer to the questions as they appear in the original Questionnaire	