Asthma in Pacificans in New Zealand and in the South Pacific

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Abstract

Asthma morbidity is a major public health problem in New Zealand. While considerable research has been done on asthma prevalence and access to asthma care among European and Maori, currently available information on the prevalence and severity of asthma in Pacific people in New Zealand is sparse. Furthermore, there have been only a few surveys on asthma prevalence in Pacific countries and these have used a variety of methodologies.

We have therefore reviewed research on asthma prevalence and access to asthma health care in New Zealand and the Pacific nations, which had included information on Pacific people.

The available evidence indicates several key features of asthma in Pacific people. In New Zealand, asthma prevalence in Pacific children is similar to, or lower than, that in non-Polynesian children, whereas in adults the prevalence is higher in both Pacific and Maori people. Asthma is more severe in Pacific people and Maori with a higher frequency of hospitalisations.

The available evidence also indicates that the greater severity, and the greater adult prevalence, in Pacific people may be partly or wholly due to problems of access to culturally appropriate asthma health care and asthma education. However, this is an area that needs further research.

There is some evidence that prevalence of asthma may be higher in Pacific children in New Zealand than in the Pacific, however little else is known about the prevalence patterns of asthma throughout the Pacific. Systematic standardised prevalence studies, including participation in Phase III of the ISAAC study, would clearly be of value in assessing the patterns and extent of asthma morbidity throughout the Pacific.

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Introduction

Asthma prevalence has been increasing in New Zealand and other countries in recent decades[1,2]. Comparing asthma prevalence in different population groups is difficult as the results vary depending on the methods used. It is only recently that standardized methods for prevalence surveys both for children (ISAAC) and adults (ECRHS) have been designed to overcome these problems[3,4]. Nevertheless, previous studies that have used the same methodology in the same population at different times have reported that this increasing trend is consistent amongst populations in countries of widely differing lifestyles and ethnic groups[1,2,5].

There have been a number of reviews of geographical and ethnic differences in asthma prevalence and severity in New Zealand and worldwide. In particular, the Maori Asthma Review assessed the evidence on asthma in Maori in New Zealand[6]. It concluded that there was no difference in asthma prevalence between Maori and non-Maori children in New Zealand, but there were differences in severity with Maori experiencing more hospital admissions and more severe exacerbations. Subsequent research has shown that, despite the absence of differences in prevalence in childhood, asthma is more common in Maori than in non-Maori adults[7]. The most likely explanation for these patterns is that problems of access to health care and asthma education are resulting in more exacerbations, greater severity, and prolongation of asthma morbidity in Maori[6]. The Review identified a number of socioeconomic and cultural factors which contributed to these problems of access to asthma health care, including costs, location of and lack of culturally appropriate health care services and attitudes of health care workers and their communication skills[6].

Table 1. Ethnic differences in asthma prevalence in New Zealand children

Reference studies in children	Age group (years)	Ethnic groups		
		European %	Maori %	Pacific people %
Mitchell[8]				
Asthma	11-13	14.1	12.2	14.3
Pattemore et al[9]	7-10			
Current wheeze		16.1	22.2	16.3
BHR		20.2	13.2	8.7
Mitchell[10]	7-10			
Any wheeze in the last 12 months		16.1	22.2	16.3
Asthma diagnosed ever		14.2	17.3	11.3
BHR & any wheeze in the last 12 months		9.3	7.7	3.9
BHR & asthma diagnosed ever		8.8	8.1	3.7
BHR + current wheeze		9.3	7.7	3.9
Barry et al[12]	12			
asthma ever		16.2	18.3	
current wheeze		17.2	19.3	
Robson et al[13]	12-15			
current wheeze (written)		36.0	38.0	31.0
current wheeze (video)		30.0	29.0	20.0

Current = occurring in the preceding 12 months
BHR = Bronchial hyperresponsiveness

Some of the New Zealand studies also include information on asthma in Pacific people, and there have also been several asthma prevalence studies in various countries of the Pacific. However, there has been no systematic review of asthma in Pacific people. We have therefore reviewed the available information on asthma prevalence and severity, and access to asthma health care and education, in Pacific people in New Zealand and the Pacific.

Asthma prevalence by ethnicity in New Zealand

Tables 1 and 2 summarise the seven population-based studies of asthma prevalence that have been conducted in New Zealand which have included information on Pacific people.

The earliest was that of Mitchell[8] who found similar prevalences of asthma in Pacific, Maori and European children. Pattemore[9] and Mitchell[10] also found that the prevalence of diagnosed asthma was similar among Pacific, Maori and European children. When current wheeze was used as the measure of asthma symptom prevalence, Maori consistently had the highest prevalence (22.2%) whereas the prevalence was similar in Pacific (16.3%) and European children (16.1%). Pacific children had a lower prevalence of bronchial hyperresponsiveness (BHR) although this is not a very reliable measure of asthma prevalence[11]. The differences were not accounted for by the differences in socioeconomic status, rates of smoking in the home, age, gender or height[9].

Barry[12] also found no difference in asthma prevalence (defined by 'asthma ever' and 'current wheeze') between 12 year old European and non-Europeans school children.

Among 12-15 year old students in the Wellington region, Robson[13] using the International Study of Asthma and Allergies in Childhood (ISAAC) written and video questionnaires, found no difference between Maori and European in the prevalence of asthma symptoms or in the frequency of attacks. There was a consistently lower reported prevalence of asthma symptoms among Pacific students compared to the other ethnic groups.

In summary, there is no evidence that asthma prevalence is higher in Pacific children in New Zealand, with the prevalences generally being similar to, or lower than, those in Maori and European children.

There have been two random population surveys of asthma prevalence in adults in New Zealand[14-16]. Among 20-44 year olds. Lewis[14] found a relatively high prevalence of "asthma" (defined as woken by shortness of breath, or taking current asthma medication, or an asthma attack in the past year) in both Pacific and Maori compared with European adults. Information on other asthma symptoms was provided by a preliminary report on the study covering four centres (Auckland, Hawkes Bay, Wellington, Christchurch)[15], which showed that Maori experienced more severe and more prolonged asthma attacks than non-Polynesians but were no more likely to report an attack of asthma and were less likely to be on asthma

Table 2. Ethnic differences in asthma prevalence in New Zealand adults

Reference studies in adults	Age group (years)	Ethnic group		
		European %	Maori %	Pacific people %
Lewis et al[14]	20-44			
Asthma		14.3	22.1	20.6
1996/1997 NZHS[16]	15-44			
Woken by attack of SOB		9.0	11.9	7.7
Asthma attack last 12 months		10.3	9.2	8.3
Asthma medications last 12 months		10.8	10.0	7.5

treatment. Asthma symptoms tended to decline with age in non-Maori, but increased with age in Maori. Thus, the pattern in this survey of adults is quite different from that in children, with a higher prevalence of asthma in both Pacific and Maori compared with non-Polynesians.

The 1996/1997 Health Survey[16] used the same standardized international questionnaire that was used by Lewis et al[14] 'Probable asthma' was defined as 'been woken by an attack of shortness of breath' or 'an asthma attack in the last year' or 'taking current asthma medication'. Among 15-44 year olds, there were differences in the rates of probable asthma between ethnic groups. Pacific women (12.6%) had the lowest rates and Maori (20%) and European (18.7%) women had the highest rates. These results for Pacific people differ from other studies where Pacific people and Maori had more severe asthma and higher hospitalisation rates[6,10,22]. There were no differences across the ethnic groups for being woken at night with shortness of breath, or having had an attack of asthma, but Pacific people were less likely to be on current asthma medication[16].

Asthma prevalence in the South Pacific

Although the ISAAC Phase I study involved 155 centres in 56 countries worldwide, and the ECRHS study involved 48 centres in 22 countries, the only Pacific countries to participate in these studies were New Zealand and Australia. It is intended that ISAAC Phase III, which is a repeat of the Phase I survey to examine time trends but also to include additional countries, will include a large number of Pacific countries. However, this will not occur until 2001-2002. Thus, currently available information on the prevalence of asthma in Pacific countries is sparse, with only a few surveys having been done with a variety of methodologies.

Liard et al[17], using the same question ('had you ever had attacks of asthma?') that they had used in a previous study in 1979, found that the prevalence of asthma had increased in Tahiti but that there was no difference in asthma prevalence among European, Chinese and Polynesian adolescents in Tahiti.

Flynn[18] conducted a study of respiratory symptoms, bronchial responsiveness and atopy in Fijian and Indian children aged 5-14 years and found that the prevalence of wheeze in the previous 12 months was almost identical in the two ethnic groups, but the combination of current wheeze and BHR was three times higher among Indian children. Indians had more severe asthma and more hospital admissions than Fijian children. They suggested that the differences in severity may be due to genetic or environmental factors acting independently of atopy.

Waite et al[19] found in a comparison of migrant children in New Zealand with children living in Tokelau, a significant increase in the prevalence of asthma in migrants compared to their non-migrant peers.

Severity of asthma

Asthma mortality rates have declined in New Zealand since the asthma epidemic of the late 70's and early 80's[20]. However, until recently, asthma mortality has been higher for Pacific people and Maori[21].

Asthma is more severe for both Polynesian children and adults in New Zealand. They have higher hospital admissions rates for asthma than Europeans. The differential exists especially amongst the children and older age group[16,21-26]. The explanations for the ethnic differences in asthma severity between Polynesians and Europeans have generally focussed on the management of asthma. In particular, it has been suggested that asthma may be more severe and life-threatening among Polynesians because of the differential management of asthma and inadequate access to appropriate health care and asthma education[6,9,10,25,26].

Access to care and utilisation of service

There are significant barriers for Pacific peoples accessing asthma health care and asthma education in New Zealand. These barriers include cost, lack of culturally

appropriate services, location of service and the attitudes of health care workers[23,27].

The provision of health care services for Pacific people in New Zealand, is a classic illustration of the Inverse Care Law. Despite their poor health status and high health needs, Pacific people have less state resources per capita spent on them[28].

Pacific people have lower per capita consultation rates for primary care despite higher health needs. Availability of primary care practitioners is lower in areas with a high Pacific population[30]. A study of state expenditure on primary care and referred services showed lower per capita costs in areas where Pacific people live[28,30]. They are more likely to postpone visits to the doctor and are more likely to be dissatisfied with the care they receive from their doctors[28]. General practitioners rated their rapport with Pacific people as the lowest[31]. The overall cost of primary care is a major barrier for Pacific families[27,29]. In a household survey in Auckland, two-thirds of Pacific families postponed their GP visit because they could not afford the cost, compared with 1/3 of European families[27,28]. At least fifty percent of eligible individuals do not have a Community Services Card.

It is not sufficient for health care to be available; it should be culturally appropriate and effective.

It is not sufficient for health care to be available; it should be culturally appropriate and effective. Organisational and cultural barriers also adversely affect Pacific peoples' ability to adequately access health care services. Language is a barrier especially for older Pacific-born individuals for whom English is a second language. Certain aspects of Pacific cultures prevent people from discussing their personal and health problems with a health provider from a different ethnic group, especially if the health workers show little understanding of, or empathy for Pacific cultural values and worldviews.

Some Pacific families are not able to access health services because they are unaware of the available health services. Oral dissemination of health information is more effective in a significant proportion of the Pacific communities.

There is a suggestion that there has been an overall decline in asthma hospitalisation rates in the last decade, however asthma management and access to healthcare and asthma education continues to be a concern for Pacific people[16].

There are ethnic differences in the general practitioners' management of asthma[24,25]. Polynesian children were less likely to have been referred to hospital by a general practitioner. Pacific people with asthma were more likely to attend the hospital accidents and emergency departments. They were less likely to attend a general practice service, less likely to have a peak flow meter and were less likely than Europeans to have been prescribed prophylactic medicine. Pacific people had a lower level of knowledge about their asthma. A third of Polynesian children did not receiving any asthma drugs in the 24 hours prior to hospital admission compared to 14% of Europeans[24,25].

Pattermore et al found that the differences in asthma prevalence did not provide a satisfactory basis to account for the ethnic differences in asthma mortality and hospital admission rates between Polynesians and Europeans, although the higher symptom prevalence in Maori could be relevant to the higher mortality rate[9]. The different cultural practices pertaining to health care, variation in the utilisation of health care and the differential management of asthma by general practitioners accounted for the higher hospital admission rates and higher asthma mortality among Pacific people[9,24,25].

Recently, a number of 'by Pacific for Pacific' primary care services have been established in areas where there is a high concentration of Pacific people. The full impact of these initiatives are yet to be determined but early indicators suggest that utilisation by Pacific people are significantly better than the traditional primary care models[29]. Currently, 'by Pacific for Pacific' primary care services provide the best prospects for improving health outcomes for Pacific people but adequate resources is needed to ensure that these Pacific providers remain effective and sustainable.

Conclusions

In conclusion, the available evidence indicates several key features of asthma in Pacific people, and several key areas for further research.

In New Zealand, asthma prevalence in Pacific children is similar to, or lower than non-Polynesian children. However, in adults the prevalence is higher in Pacific people. Asthma is more severe in Pacific people with a higher frequency of hospitalisations.

More research is clearly needed, but the available evidence indicates that the greater severity, and the greater adult prevalence, in Pacific people may be partly or wholly due to problems of access to culturally appropriate asthma health care and asthma education.

Finally, although it is known that the prevalence of asthma is higher in Pacific children in New Zealand than in the Pacific[21], little else is known about the prevalence patterns of asthma throughout the Pacific. Systematic

standardised prevalence studies, including participation in Phase III of the ISAAC study, would clearly be of value in assessing the patterns and extent of asthma morbidity throughout the Pacific.

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