eterogeneity thus far observed for other putative and tablished risk factors suggests that it is likely that the udy will also have the potential to test other hypotheses ncerning the associations of apolipoproteins, lipid eroxides, antioxidants, red blood cell membrane fatty ids, haemostatic factors and polymorphisms of candidate enes with coronary heart disease risk.

The Fletcher Challenge-University of Auckland Heart Health Study population clearly includes a broad oss-section of the New Zealand population, but the cus of recruitment on a working population and a opulation of voters registered on the general electoral ll means that the study population will not be epresentative of all groups in the New Zealand opulation. However, this should not greatly alter the otential for the study to provide useful and eneralisable information about the causes of coronary eart disease. Much of what is known today about the auses of this disease has been derived from studies of ighly selected populations defined by specific geographic ocation or occupation and often with markedly high or narkedly low disease rates. Despite such selection actors and the consequent differences between study opulations, the results of previous studies have been argely concordant in their estimation of the associations f risk factors such as smoking, cholesterol and blood ressure with coronary heart disease risk. This is onsistent with the general expectation that factors ssociated with disease risk in one population are likely o be associated with disease risk in others – in general, ualitative heterogeneity in epidemiological relationships ie, where a factor is associated with disease risk in one opulation but not in others) is infrequent, but modest uantitative heterogeneity (ie, where the size of the association differs between populations) is common, although often difficult to detect. Thus, it can be expected that results from the Fletcher Challenge-University of Auckland Heart & Health Study about the causes of coronary heart disease will be broadly relevant to the New Zealand population at large, although the distributions of risk factors, the incidence of coronary heart disease and the magnitude of the associations between risk factors and coronary heart disease may differ somewhat between this study population and the broader population of New Zealand.

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IN PRACTICE

The prevalence of fetal alcohol syndrome in New Zealand

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Abstract

Aims. To obtain an estimate of the prevalence of fetal alcohol syndrome in New Zealand and to report information on paediatrician surveillance for alcohol related birth defects.

Methods. New Zealand paediatricians were asked to complete a postal survey. Questions recorded the number of children with alcohol related birth defects under their care, and examined the respondents' surveillance for alcohol related birth defects.

Results. There were 63 children under 10 years of age with fetal alcohol syndrome under paediatric care in 1993. The majority of paediatricians considered the diagnosis only when risk features were identified: the most frequent being children of high risk mothers and children with dysmorphic features.

Conclusions. Fetal alcohol syndrome exists in New Zealand. The prevalence of fetal alcohol syndrome as estimated in this study is lower than would be expected from international prevalence reports and is likely to be an underestimate. Current surveillance for alcohol related birth defects depends on an individual paediatrician considering the diagnosis only when faced with a perceived at risk infant or child, and there is likely under recognition. An increased awareness of the risks of alcohol consumption in pregnancy and the full spectrum of alcohol related birth defects is required.

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The adverse effect of alcohol on the fetus has been known since antiquity. It was Aristotle who first recognised "foolish, drunken, or harebrained women for the most part

bring forth children like unto themselves, morose and languid".[1] However, it was not until 1973 that the specific constellation of findings in fetal alcohol syndrome was described[2] and the adverse effects of alcohol were recognised by the medical community. It is now clear that the effects of alcohol exposure to the developing fetus exist on a continuum from very subtle to very extreme abnormalities.[3] At the severe end of this spectrum is fetal alcohol syndrome, a specific birth defect comprising mental retardation, prenatal and postnatal growth retardation, and classical facial features (Figure 1) (Table 1).[3-6] Fetal alcohol syndrome is recognised as one of the leading causes of mental retardation in the western world.[7,8] At the mild end of the spectrum are children with a developmental and behavioural disorder, who lack the growth retardation and classical facial features of fetal alcohol syndrome, but who have a history of prenatal alcohol exposure. These children have previously been referred to as having fetal alcohol effects, however the term alcohol related birth defects encompassing the whole spectrum is now preferred.

Table 1. – Diagnostic criteria for fetal alcohol syndrome.

1. Prenatal and/or postnatal growth retardation
   weight and/or height <l0th centile

2. CNS involvement
   neurological abnormality
   developmental delay
   behavioural dysfunction or deficit
   intellectual impairment
   structural abnormalities, eg, microcephaly
   or brain malformations found on imaging studies or autopsy

3. Characteristic facial features
   short palpebral fissures
   elongated midface
   long and flattened philtrum
   thin upper lip
   flattened maxilla

Abnormalities in all three categories are required to secure the diagnosis of fetal alcohol syndrome.
A relationship to prenatal alcohol exposure should be sought but is not necessary for the diagnosis.

Figure 1. – Child with fetal alcohol syndrome (Age 2 years 11 months). Note the elongated midface, long and flattened philtrum, thin upper lip, and flattened maxilla. (The guardians of this boy have given written permission for these photographs to appear without alteration).

Studies from North America and Europe have reported the incidence of fetal alcohol syndrome as 0.33-5.9 per 1000 live births.[7,8] Based on these overseas statistics one could predict between 20 and 354 children with fetal alcohol syndrome are born each year in New Zealand. However, to date there have been no reported cases and there are no available statistics on the prevalence of fetal alcohol syndrome in New Zealand.

Children with fetal alcohol syndrome have multiple problems with growth, development, behaviour and learning, and thus the majority of affected children will be assessed by a paediatrician. A survey of all paediatricians in New Zealand was performed with the specific aim of obtaining an estimate of the prevalence of children with recognised fetal alcohol syndrome. A second aim was to evaluate paediatric practice with regard to surveillance for alcohol related birth defects.

Methods

The study sample comprised all paediatricians in the New Zealand Register of Specialists. A two page questionnaire was designed by the authors and sent to the paediatricians for self completion. A repeat questionnaire was sent if there was no response by four weeks.

The respondents were asked to state the number of children less than 10 years of age with fetal alcohol syndrome under their care at the time of the survey. Initials and dates of birth of the cases of fetal alcohol syndrome were requested to cross reference, and thus ensure no cases were included twice. Numbers of children with fetal alcohol syndrome who had been assessed by the respondent but who were no longer under paediatric follow up were also recorded. Numbers of children with abnormalities at the milder end of the spectrum of alcohol related birth defects but without the specific constellation of findings of fetal alcohol syndrome were recorded. The combination of these children and those with definite fetal alcohol syndrome determined the total number of children with alcohol related birth defects under paediatric care.

The paediatricians were asked to report their diagnostic experience with fetal alcohol syndrome and the surveillance methods they employed for alcohol related birth defects. If the respondents did not routinely screen for alcohol related birth defects, they were asked to note which of the following clinical features prompted consideration of the diagnosis: children of high risk mothers, children with dysmorphic features, learning difficulties, behavioural problems, intrauterine growth retardation, failure to thrive.

Ethical committee approval was obtained from the North Health ethics committee.

Statistical analysis. Results were analysed using chi square analysis. Fischer exact tests were used for contingency tables containing small numbers.

Results

Response rate. One hundred and twenty-four of the 137 questionnaires were returned, ie, a response rate of 91%. Twelve were returned blank (5 paediatricians on sabbatical and 7 retired) thus leaving 112 questionnaires for analysis.

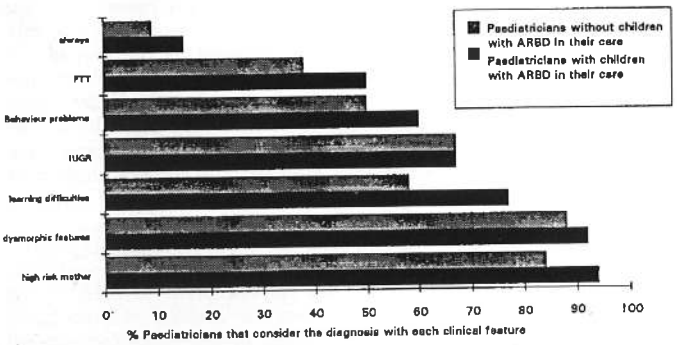
Prevalence of fetal alcohol syndrome. Sixty-three cases of definite fetal alcohol syndrome less than 10 years of age were under paediatric care in New Zealand in 1993. This reported prevalence of fetal alcohol syndrome is at best 30% of the predicted rate using overseas estimates. The children with fetal alcohol syndrome were cared for by 36 paediatricians with the majority reporting having only one affected child under their care. Ten paediatricians had two cases whilst only two had three cases. Less than one third of the respondents were able to provide date of birth or initials of the index cases.

An additional 78 children with fetal alcohol syndrome had been assessed but were no longer under paediatric care. These children have not been included in the prevalence data as we were unable to cross reference former cases. Including the children with the more subtle defects, there was a total of 130 children with recognised alcohol related birth defects under paediatric care in 1993. These children were under the follow up of 48 paediatricians.

Surveillance for alcohol related birth defects. Eighty-one percent of paediatricians had seen a child with alcohol related birth defects at some stage during their training or clinical practice, however less than one third had actually made the diagnosis.

Surveillance for alcohol related birth defects varied; only 13 paediatricians (11.6%) actively looked for the diagnosis at each consultation, and four paediatricians reported they never considered the diagnosis. Paediatricians caring for children with fetal alcohol syndrome were more likely to look

routinely for the diagnosis than those not (17% vs 8%), as were paediatricians caring for children with alcohol related birth defects (14.6% vs 9.4%). The majority of paediatricians considered the diagnosis of alcohol related birth defects only when certain clinical features were identified, the most frequent being children of high risk mothers and children with dysmorphic features (Figure 2). Paediatricians caring for affected children (either fetal alcohol syndrome or alcohol related birth defects) were more likely to consider the diagnosis when assessing children with all clinical features, with the exception of intrauterine growth retardation than paediatricians with no affected children under their care. Paediatricians caring for children with the more subtle forms of alcohol related birth defects were more likely to consider the diagnosis when assessing a child with learning difficulties, behavioural problems, and failure to thrive, than those caring for children with the classical signs of fetal alcohol syndrome.



Number of paediatricians = 112; 64 without, and 48 with, children with alcohol related birth defects in their care.

Figure 2. – Clinical features that prompt paediatricians to look for alcohol related birth defects.

Discussion

In 1993, 63 children less than 10 years of age with recognised fetal alcohol syndrome were under paediatric care in New Zealand. Based on overseas estimates and an annual birth rate of 60 000, one would predict the number to be much higher: 200-3540.[7,8] The reasons for this apparent discrepancy are unclear, however, several factors may be involved.

Eighty percent of New Zealand women drink alcohol, and 12% do so daily.[9] Although women usually decrease their alcohol consumption during pregnancy, 41.6% of women continue to drink alcohol while pregnant, and 18.7% report drinking more than once a week.[10] These figures are consistent with overseas rates of alcohol consumption,[11] thus it is unlikely the lower reported prevalence is due to different levels of maternal drinking. There is also no reason to suspect that New Zealand women and their fetuses are genetically less susceptible to the adverse effects of alcohol than their Australian, British or American counterparts. These points suggest the apparently lower prevalence rate is due to other reasons.

Prevalence figures obtained using this sampling method will be an underestimate as not all children with fetal alcohol syndrome will be under paediatric care. However, as affected children have multiple problems with growth, development, learning and behaviour, one would expect the majority to be under paediatric care or have been assessed by a paediatrician at some stage. Even when considering the children with recognised fetal alcohol syndrome who had seen a paediatrician in the past, but were no longer under paediatric follow up, the reported rate is still much lower than the predicted rate. The prevalence of children with alcohol related birth defects has not been calculated as it is likely to be a gross underestimate. Children with the more subtle forms of alcohol related birth defects have learning or behavioural problems, and it is likely that many are never assessed by a paediatrician and so would not be included in this sampling method.

The accuracy of the information obtained will depend on the accuracy of the paediatricians' reporting. Although most paediatricians were able to provide the number of affected children under their care at the time of the survey, less than one third were clear as to the exact number and details. Very few paediatricians were able to report how many children had been under their care in the past but were no longer receiving paediatric follow up. Many commented on a lack of an adequate data retrieval system as a reason for being unable to provide accurate data. This study clearly has limitations with regard to its accuracy of numbers due to the above factors. However, at present there is no better way of trying to provide an estimate of the prevalence of fetal alcohol syndrome in New Zealand. Fetal alcohol syndrome and alcohol related birth defects are not notifiable conditions, and there is no national database. Monitoring for alcohol related birth defects via a national database of birth defects is recommended to provide accurate data on the incidence, to identify the extent of the problem, and to guide future resource planning.

Current surveillance for alcohol related birth defects depends on an individual paediatrician considering the diagnosis when faced with a perceived at risk infant or child. The most common clinical feature that prompted New Zealand paediatricians to consider the diagnosis of alcohol related birth defects was having a high risk mother. For this study a high risk mother was not specifically defined and the paediatricians responded according to their own opinion about what constitutes high risk. It is well established that children of alcohol dependent women are at high risk of alcohol related birth defects, however, the risks associated with lower levels of alcohol consumption and binge drinking are uncertain.[3] Therefore, accurate maternal drinking histories should be recorded for every child who is being assessed for neurodevelopmental problems, growth retardation or dysmorphic features.

The presence of dysmorphic features is one of the most frequent clinical features that prompted paediatricians to consider the diagnosis of alcohol related birth defects. However, the characteristic craniofacial malformations of fetal alcohol syndrome diminish with time and it is often more difficult to diagnose fetal alcohol syndrome, in older children and adolescents.[12] In addition, children with more subtle forms of alcohol related birth defects have few or no characteristic dysmorphic features.[3,12] If one relies on dysmorphic features as a key clinical feature, one is less likely to diagnose children at this end of the spectrum. This concept is confirmed in the current study where the group of paediatricians who placed the most emphasis on dysmorphic features were the group least likely to have children with the more subtle forms of alcohol related birth defects under their care. In contrast, paediatricians who placed relatively less emphasis on dysmorphic features and relatively greater emphasis on learning, behavioural and growth disturbances, were more likely to have children with subtle abnormalities under their care. Paediatricians' experience and exposure to alcohol related birth defects clearly affects the threshold for consideration of the diagnosis. It is surprising 19% of paediatricians reported they had never seen a child with alcohol related birth defects when the condition is likely to occur at least as often as Down's syndrome or cystic fibrosis (National Testing Centre, personal communication). This suggests under recognition and under diagnosis of the condition.

Although the diagnostic criteria for fetal alcohol syndrome are clear (Table 1),[6] the diagnosis is elusive to many clinicians as the signs are not specific to alcohol exposure and there are no confirming laboratory tests. The neonatal period is one of the most difficult times to recognise alcohol related birth defects as the markers of the central nervous system dysfunction are sparse, and facial features may be obscured by facial oedema.[13] Failure to recognise fetal alcohol syndrome and alcohol related birth defects is well documented in overseas studies.[13] Australian researchers have commented on the clinical

underdiagnosis, referring to alcohol related birth defects as the "great paediatric imitator" implying true alcohol related birth defects may often be diagnosed as another condition for which the symptoms are similar.[14] In addition, there may be a reluctance to formally label an affected child. In a recent survey in the United States, 56% of paediatricians reported having suspected fetal alcohol syndrome at one time but not formally diagnosing it.[15] An additional 9% were convinced of the diagnosis but did not record it. These attitudes in part reflect societies view on alcohol consumption and in particular the stigma attached to a diagnosis of alcohol related health problems.

In conclusion fetal alcohol syndrome exists in New Zealand. The reported prevalence is likely to be an underestimate. More accurate data is needed to identify the extent of the problem in New Zealand. Current surveillance depends on an individual paediatrician considering the diagnosis when faced with a perceived at risk infant or child and there is likely under recognition. Doctors need to consider the diagnosis of alcohol related birth defects whenever they are faced with a child with neurodevelopmental problems, growth retardation or dysmorphic features, and need to enquire routinely about maternal alcohol consumption during pregnancy. An increased awareness of the adverse effects of alcohol consumption on the developing fetus is required in order to detect the full spectrum of alcohol related birth defects.

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A community's attitudes towards the mentally ill

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Abstract

Aim. To assess the general community's knowledge of mental illness and personal experience of people with mental illness.

Method. Three hundred randomly selected Dunedin residents were surveyed by a postal questionnaire. The instruments used to measure attitudes were a shortened form of the Californian attitudes towards mental illness scale (CAMI scale)[1] and a social distance scale. In addition, questions were asked about the respondent's age, gender, marital status, level of education, their main source of opinion, their experience with the mentally ill, and their beliefs about the causes and types of mental illness.

Results. Having known a person with mental illness facilitates more intimate relationships with people with a mental illness. Sociodemographic variables did not predict attitudes on the CAMI scale. Most respondents who had been in contact with the mentally ill held informed and enlightened views.

Conclusion. The community needs and welcomes information on the subject of mental illness and has a positive outlook for the future planning of the rehabilitation of people with mental illness.

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The management of the mentally ill has changed radically over the last 50 years. The development of modern psychopharmacology and the growing awareness of the detrimental effects of institutionalisation has resulted in policies designed to encourage people with mental illness to live independently in the community. Often the plans for the relocation of psychiatric services are met with public opposition. People with mental illnesses, the primary users of these services, are regarded as a threat to the neighbourhood.

Such deinstitutionalisation has prompted a number of investigations both overseas and in New Zealand to identify factors associated with discriminatory attitudes and behaviour towards the mentally ill. At what point is the odd behaviour of a person accepted as normal, or seen as reflecting mental illness and requiring professional help? Forty years ago, after a 6 year long study into the public attitudes towards mental illness, Nunnally and his associates[2] observed that the mentally ill were 'regarded with fear, distrust, and dislike' as well as having the undesirable traits of 'dangerousness, being dirty, unpredictable and worthless'; a statement that is often quoted today.

When Green and her colleagues[3] reviewed several New Zealand studies in 1987 with a similar methodology, they concluded that attitudes towards people with mental illnesses had not significantly changed over a period of 22 years.

These studies illustrate research that portrays a disheartening picture of the community's acceptance of the mentally ill. However, two physicians Lemkau and Crocetti[4] disagreed. These authors in 1962 described the public as being 'fairly well informed' and expressing 'understanding and tolerance'. An optimistic outlook as this one, stimulated a series of studies from the disciplines of sociology, psychology, psychiatry and nursing. Sociologists and social psychologists view mental illness as one form of deviance defined by society. By contrast, the professions of psychiatry and nursing are concerned with the impact of community attitudes on the prognosis of mental illness.

Also disheartening are studies showing a lack of significant improvement in public attitudes over time. From a reevaluation of 22 studies from 1954-77, Brockman and his colleagues[5] noted how the positive optimism of mental health researchers contrasted with more negative conclusions reached by social scientists. Many of the inconsistencies in reported findings can be explained by methodological differences, particularly by the use of different instruments to measure attitudes and by the different conceptual frameworks used in each discipline.