'From Kava to Lager' - alcohol consumption and drinking patterns for older adults of Pacific ethnic groups, and Europeans in the Diabetes Heart and Health Study (DHAHS) 2002-2003, Auckland New Zealand

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A *This paper describes and compares alcohol consumption and drinking patterns for Pacific ethnic groups (Samoan, Tongan, Niue, Cook Islands) and European New Zealanders by gender participating in the 2002-03 Diabetes Heart and Health Study (DHAHS).*

M *The DHAHS was a cross-sectional population based study of people age 35-74 years carried out in Auckland between 2002-03. A total of 1011 Pacific people comprising of 484 Samoan, 252 Tongan, 109 Niuean, 116 Cook Islanders and 47 'Other Pacific' (mainly Fijian) and 1745 European participants took part in the survey. Participants answered a self-administered questionnaire to assess whether they consumed alcohol, their drinking patterns and consumption levels and reasons for stopping drinking.*

R *Approximately half (51.3%) of all Pacific people did not currently drink compared to 6.2% of the European population. Of 'non-drinkers' - 'never Drinking' was significantly more common in Pacific (40%) compared to Europeans (13%) p<0.0001. Ex-drinkers comprised 6.3% of the 'ever-drank' population for European compared to 27.6% for Pacific. The majority of Pacific men and women drinkers (>60%) consumed alcohol 'weekly' or 'less than weekly'. In contrast the majority of European men and women drinkers (>60%) consumed alcohol '2-3 days per week' or 'daily'. European men were significantly more likely to drink wine and spirits, and European women were significantly more likely to drink wine than their Pacific counterparts. Pacific drinkers consumed an average of 6.9 drinks on a typical occasion and 82 mls of pure alcohol per week, compared to 3.6 drinks and 126 mls per week for Europeans.*

C *Middle-aged and older Pacific adults are less likely to consume alcohol than Europeans however those who drink consume more on a typical occasion but drink less regularly resulting in lower weekly consumption of pure alcohol. Drinking patterns in these Pacific adults tend to show substantial diversity by age (older are less likely to drink), sex (women less likely to drink), and financial deprivation (middle groups consume more than least and most financially deprived). For Europeans a more homogenous drinking style prevailed by age, sex, and deprivation. Pacific drinkers were also approximately five times more likely to stop drinking compared to Europeans, citing family and social reasons as their main motivation for stopping drinking.*

Introduction

Pacific people in New Zealand are less likely to consume alcohol than the general New Zealand population.[1] However those Pacific people who consume alcohol are more likely to drink more on any typical occasion and experience negative consequences of such a drinking style.[2, 3] In the 1992-1993 Household survey[4] found 53% of Pacific people were estimated to be *'non-drinkers'*. Similarly, in a phone survey carried out in 2002/03, 43% of Pacific people surveyed were *'non-drinkers'* compared to 15% of the general New Zealand (NZ) population.[3] Pacific drinkers would drink an average of eight drinks on a typical drinking occasion compared to four for the national population, and had consumption patterns referred to as *'too much or nothing at all'*.[3] In this same study Pacific people were not found to drink more frequently than their non-Pacific counterparts but were more likely to have experienced negative consequences from drinking compared to national levels, this finding is supported elsewhere.[5]

Research has suggested that the concept of a *'social drinker'* was not well recognised in Pacific communities and that for most, drinking meant drinking enough to get drunk or until one could not drink anymore.[6] This view of drinking would indeed support a *'too much or nothing at all'* culture and was thought to have been influenced in part by traditional kava drinking practices. When drinking kava an entire cup is consumed in one go, and the kava drunk until finished rather than when one feels that they have had enough.[6] For other Pacific nations that have a longer migration histories in New Zealand (Cook Islands and Niue) and where kava drinking is less common,[7, 8] an adoption of a typical New Zealand drinking culture is most likely. From 1918 – 1967 New Zealand pubs had to be closed by 6pm. This gave rise to what is known as the 'six o'clock swill'. Six o'clock closing has been seen by many commentators as teaching two generations of Kiwi men to drink as fast as possible, contributing to a binge-drinking culture.[9] The most recent New Zealand Health Survey found that for *'drinkers'* - the proportion engaged in 'hazardous drinking' in Pacific adults (39.2%) was almost double that of European/ Other New Zealanders (20.1%).[5]

Pacific drinkers would drink an average of eight drinks on a typical drinking occasion compared to four for the national population, and had consumption patterns referred to as 'too much or nothing at all'.

The aim of this study is to describe the characteristics of *'drinkers'* & *'non-drinkers'* of the pan-Pacific `and main Pacific groups (Samoan, Cook Islands, Tongan, Niuean) who participated in the Diabetes Heart and Health Study (DHAHS).

Method

The aim of the DHAHS was to investigate the prevalence of cardiovascular and diabetes risk factors in a representative sample of Aucklanders aged 35-74 years, between January 2002 and December 2003.

Participants were recruited using two sampling frames: one was a cluster sample where random starting point Auckland area addresses were obtained from Statistics New Zealand and the probability of selection was proportional to the number of people living in that mesh block (response rate 61.3%); and the other was a random sample taken from the November 2000 Auckland electoral rolls stratified into 5 year age bands and included all people living in the Auckland area, with the exception of the Franklin and Rodney electorates (response rate 65%). Participants were interviewed in places close to where they lived. All completed a self-administered questionnaire and a series of health measurements were made.

Classification of ethnicity gave priority to Pacific over European ethnicity. This is similar to the method used by Statistics New Zealand.[10] Participants who indicated belonging to more than one Pacific ethnic group were assigned to one ethnic group only. Those who were of Pacific and non-Pacific or non-Maori were assigned into their respective Pacific ethnic group. Those who belonged to more than one Pacific ethnic group were assigned to the smaller Pacific group as done by census 2001.[10] This gave priority firstly to Niuean, followed by Cook Island, Tongan, and lastly Samoan ethnicity. Small numbers of Fijian (n=27) and 'Other Pacific' (n=27) participants meant that analysis of their results could not generate reliable findings. Analyses were performed for the entire Pacific cohort (n=1011) which included 'Fijian' and 'Other Pacific' participants, as well as ethnic specific analyses for the main Pacific ethnic groups (Samoan, Cook Island, Tongan and Niuean). Ethical approval was obtained from the Health and Disability Ethics Committees.

Four components of alcohol consumption and drinking patterns will be described in this paper. These include the proportion of 'drinkers' & 'non-drinkers' in these populations, the frequency of drinking (i.e. days per week/month), the number of drinks consumed on a typical drinking occasion, and the type of alcohol consumed. From these measures an overall estimate of total pure alcohol consumed weekly was determined. Characteristics of 'non-drinkers' will also be described highlighting reasons why ex-drinkers stopped drinking. Both 'drinkers' and 'non-drinkers'

were analysed separately. The 'non-drinkers' group consisted of i) 'never-drinkers', ii) 'ex-drinkers', and iii) 'occasional drinkers, not monthly'.

All participants received information in the mail with instructions of where and when to attend the survey centres. Participants completed questionnaires covering socioeconomic status (SES), demographic information and alcohol consumption. In addition a number of CVD and diabetes risk factors were measured (but not discussed in this paper).

An NZDep2001 score was determined for each participant based on their area of domicile and was classified in quintiles. Quintile 1 represents areas with the least deprivation and quintile 5 areas with the most deprivation.[5] The New Zealand Index of social deprivation (NZDep20001) was created from Census 2001 data; it describes the deprivation by small geographic areas and is used as a proxy for individual deprivation.

Statistical analysis was undertaken using SAS version 9.1. Participant data were weighted according to the sampling frame that they were obtained from and means, standard errors and prevalence's calculated using dual frame sampling methodology.[11-13] SAS survey procedures (SURVEYMEANS, SURVEYREG, SURVEYFREQ AND SURVEYLOGISTIC) were used to calculate weighted means, adjusted means, percentages and odds ratios, respectively.[14] The Rao-Scott modified Pearson Chi squared test was used where appropriate. Analyses have compared all Pacific ethnic groups to their European counterparts.

Results

Non-drinkers

Non-drinking was significantly more common in Pacific peoples (p<0.0001) compared to European. Approximately half (51.3%) of all Pacific people reported that they did not drink compared 6.2% of the European population. All Pacific ethnic groups followed this pattern (Samoan 50.6%, Cook Islands 49.2%, Tongan 58.9%) with the exception of Niueans among whom one third (32.9%) did not drink. Non-drinking was more common amongst women for all groups. Samoan women (92%) were most likely to report that they did not drink, followed by Tongan (78%), Cook Islands (75%), Niue (65%) and Europeans (27%). For men, non-drinking was most common in Tongans (70%), followed by Cook Islands (54%), Samoans (41%) Niueans (26%) and Europeans (14%).

Table 1 Proportion of non-drinkers by age group, adjusted for sex

	European (%)	Pacific (%)
<45	7.4	46.8‡
45-54	2.7	43.5‡
55-64	9.2	62.4‡
65+	4.8	70.3‡

‡ = p<0.001

Table 1 shows the proportion of *'non-drinkers'* by age group. Non-drinking was more common in older Pacific age groups, whereas for Europeans *'non-drinkers'* generally became less common in the older age groups.
For both Pacific and European people, ex-drinkers comprised approximately half of the non-drinking group (Pacific 53%, European 51%). 'Never Drinking' was significantly more common in Pacific compared to Europeans (Pacific 40%, European 13%; p<0.0001). Pacific were also significantly less likely to be occasional drinkers (Pacific 7%, European 36%; p<0.0001).

Ex-drinkers comprised 6.3% of the 'ever-drank' population (excluding 'Never Drinking') for European compared to 27.6% for Pacific. This shows that not only are Pacific people less likely to drink alcohol; those that start are approximately 5 times more likely to stop compared to Europeans.

Reasons for stopping drinking

'Social/Family' reasons were the main reasons reported for stopping drinking among both the pan-Pacific population (52%) and Europeans (37%). The leading reason for stopping drinking for Samoans and Niueans was 'Other health reasons'. Significantly more Pacific people (29%) named 'Other health reasons' as their leading reason for stopping drinking compared to Europeans (14%), (p<0.05). Concerns regarding heart disease was not a significant reason for stopping drinking for both Pacific (6%) and Europeans (3%).

Table 2 Types of Alcohol consumed by gender, age adjusted

	Men (%)		Women (%)	
	European (n = 738)	Pacific (n= 215)	European (n = 632)	Pacific (n = 84)
Beer	60.0	82.1*	7.3	27.9*
Spirits/Liqueurs	11.0	5.7*	21.4	34.3
Table wine or similar	28.0	10.5*	68.6	27.2*
Fortified wine	1.1	1.1	1.6	1.4

** p<0.05, reference = European*

Type of alcohol consumed

The types of alcohol consumed by ethnicity and gender are presented in Table 2. Beer was the leading drink consumed by more than 80% of Pacific male drinkers and Spirits/Liqueurs were the leading type of alcohol consumed by Pacific women.

Frequency of drinking

Table 3 presents drinking frequencies of Pacific and European men and women. The majority of Pacific men and women drinkers (>60%) consumed alcohol *'weekly'* or *'less than weekly'*. In contrast the majority of European men and women drinkers (>60%) consumed alcohol *'2-3 days per week'* or *'daily'*. Pacific men were most likely to drink *'weekly'* and Pacific women *'less than weekly'*.

Table 3 Frequency of Drinking in Pacific and European by gender

	Men (%)		Women (%)	
	European (n = 738)	Pacific (n= 215)	European (n = 632)	Pacific (n = 84)
Daily	36.2	11.6‡	22.3	16.7
2-3 days a week	41.0	20.3‡	38.3	9.9‡
Weekly	12.3	35.1‡	18.6	18.5
< Weekly	10.6	33.0‡	20.8	55.0‡

‡ = p<0.001

Table 4 presents age adjusted ethnic specific drinking frequencies. For all Pacific groups more than 55% of drinkers consumed alcohol *'weekly'* or less compared to 22.8% of European men and 38.6% of European women. 'Weekly' consumption was the leading drinking frequency for Samoans, Cook Islands and Niuean men, whilst '< weekly' was the leading dinking frequency for Samoan, Tongan and Niuean women.

Consumption levels

Table 5 presents ethnic specific information on consumption with regard to i) the average number of drinks consumed per 'sitting' and also ii) the average amount (in mls) of pure alcohol consumed weekly. Caution is advised when interpreting sex-specific statistics due to small sample sizes (as indicated by the large standard error). Samoan, Cook Islands, and Niuean men consumed significantly more drinks in an average sitting compared to their European counterparts. Samoan and Cook Island men consumed significantly lower amounts of pure alcohol per week compared to their European counterparts. In all groups fewer drinks were consumed in the older age category. This pattern was also reflected in total weekly alcohol consumption with exception of European women, who consumed more total alcohol than their younger counterparts.

Table 4 Frequency of Drinking in Pacific groups and European

MEN	European (%) (n=738)	Samoan (%) (n=118)	Cook Island (%) (n=22)	Tongan (%) (n=34)	Niuean (%) (n=32)
Daily	36.1	7.6‡	6.9‡	28.1	12.9‡
2-3 days a week 41.0		23.5*	16.0*	16.3†	19.5*
Weekly	12.2	36.8†	42.0*	20.2	37.3†
< Weekly	10.6	32.1†	35.2*	35.4	30.2*
WOMEN	**European (%) (n=632)**	**Samoan (%) (n=27)**	**Cook Island (%) (n=16)**	**Tongan (%) (n=17)**	**Niuean (%) (n=14)**
Daily	22.3	14.4	7.0‡	5.2‡	9.1‡
2-3 days a week 38.3		8.9†	7.9†	6.8‡	16.3
Weekly	18.6	23.9	65.8*	6.0	7.2
< Weekly	20.9	52.8†	22.4	82.1‡	67.5†

*adjusted for age, * = p<0.05, † = p<0.01, ‡ = p<0.001 compared to European*

Table 5 Consumption characteristics of European and Pacific ethnic groups

MEN	European (se) n=738	Pacific (se) n=215	Samoan (se) n=118	Cook Island (se) n= 22	Tongan (se) n= 34	Niue (se) n= 32
Drinks on an average sitting	4.3 (0.13)	7.8 (0.54)‡	7.8 (0.63)*	8.0 (1.38)*	7.1 (7.07)	8.7 (1.71)*
Average consumption per week (mls)	158 (10.07)	107 (13.36) †	87 (11.39)*	74 (16.82)*	169 (54.73)	150 (53.22)
WOMEN	**n=632**	**n= 84**	**n= 27**	**n= 16**	**n= 17**	**n= 14**
Drinks on an average sitting	2.9 (0.09)	5.4 (1.69)	4.0 (0.82)	12.9 (4.80)*	4.2 (1.63)	2.7 (0.62)
Average consumption per week (mls)	95 (8.48)	63 (18.99)	126 (74.40)	89 (17.37)	30 (15.55)*	41 (13.68)*

MEN Drinks on an average sitting	European (se)	Pacific (se)	Samoan (se)	Cooks (se)	Tongan (se)	Niue (se)
35-54	4.9 (0.19)	8.7‡ (0.66)	8.7‡ (0.75)	8.9* (1.70)	8.4 (2.53)	9.3* (2.16)
55-74	3.2 (0.11)	6.2‡ (0.74)	6.5† (0.85)	8.3‡ (1.23)	3.8 (0.75)	9.0† (1.83)
Average consumption per week (mls)						
35-54	161 (14.54)	110† (12.97)	93† (11.24)	82† (18.17)	201 (62.10)	114 (45.92)
55-74	153 (11.12)	96 (35.82)	61‡ (19.72)	45‡ (12.02)	82 (79.00)	284 (175.37)

WOMEN Drinks on an average sitting	European (se)	Pacific (se)
35-54	3.1 (0.13)	5.8 (0.13) (n=72)
55-74	2.5 (0.08)	2.9 (1.01) (n=12)
Average consumption per week (mls)		
35-54	86 (11.90)	57 (18.94)
55-74	109 (10.60)	51 (30.57)

Low numbers of women drinkers rendered age categorised analysis by Pacific ethnic group very prone to random error.

*adjusted for age, sex, where appropriate, * = p<0.05, † = p<0.01, ‡ = p<0.001 compared to European*

Figure 1 Number of drinks had on average occasion of European and Pacific by NZ Deprivation 2001 (age and sex adjusted)

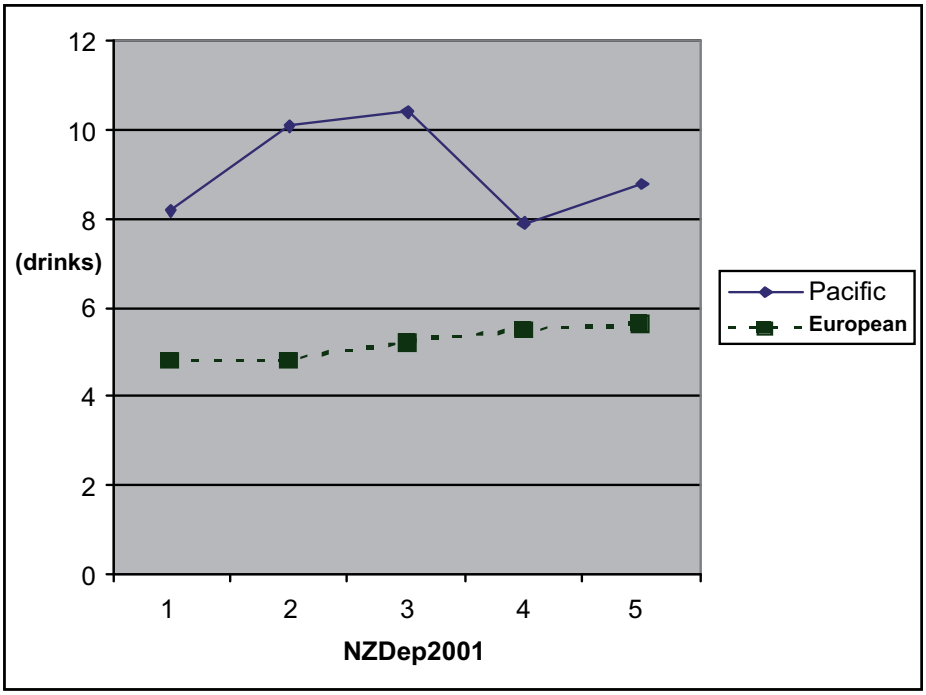

Figure 1 shows that Pacific drinkers consume 2-5 more drinks than Europeans who experience similar levels of economic deprivation. For Europeans there is little difference in the number of drinks consumed on an average drinking occasion between the different NZDep2001 groups. However, this was not found for Pacific people. Pacific drinkers in the middle classes appeared to have a more hazardous drinking style (consuming more drinks) compared to those Pacific groups experiencing the most and least amount of financially deprivation as measured by the NZDep2001 tool.

Discussion

Uniqueness & important findings

There is a dearth of research on alcohol consumption and drinking patterns of Pacific people.[15] The Pacific Drugs and Alcohol Consumption Survey (PDACS) 2003,[3] was the first major study developed to address this need. In the PDACS, 1103 Pacific participants aged 13-65 years provided a wealth of information on Pacific alcohol consumption and drinking patterns. In this study only 472 (42%) were older adults (35+). Our study in contrast only surveyed older Pacific adults and although not primarily focussed on alcohol consumption, has provided an extensive amount of information on the use of alcohol of 1011 older Pacific adults. Arguably these findings could be regarded as the most reliable/extensive source of information on alcohol use of older Pacific adults in New Zealand.

Total alcohol consumption

In contrast to findings from the PDACS, a key finding of our study is that total alcohol consumption of Pacific adults is considerably lower than Europeans. The 2003 PDACS found that Pacific drinkers drank on average 21 litres of pure alcohol per year (men 28 litres, women 14 litres) compared to 11 litres per year (men 16 litres, women 7 litres) in European/Others.[3] In contrast the DHAHS found that the Pacific drinkers drank on average 4.3 litres per year (men 5.6 litres, women 3.3 litres) compared to 6.6 litres per year for Europeans (men 8.2 litres, women 4.9 litres).

This point of difference may be explained in part by the differing age range of the two studies. The DHAHS surveyed people from ages 35-74 years; whilst the PDACS surveyed from 13-65 years, suggesting higher consumption in Pacific youth than their non-Pacific counterparts. Some support for this suggestion is shown in Tables 1 & 5 where younger age groups were more likely to be drinkers, consumed more drinks on an average sitting resulting in greater quantities of pure alcohol consumed.

Number of drinks

In our study Pacific drinkers reported drinking 6.9 drinks on an average occasion. This was similar to the average of 8 drinks per occasion reported by the PDACS. The comparative average for European/ Others was 4 drinks reported by PDACS and 5 drinks in the DHAHS for Europeans. Binge or risky alcohol use has been defined as consuming seven or more

drinks on any one occasion.[16] This underscores the fact that most Pacific drinkers tend to be high-risk drinkers.

Drinking frequency

The lower total level of alcohol consumption in Pacific people is due to their lower frequency of consumption. The majority (over 2/3rds) of Pacific drinkers drank '≤ *weekly*', whereas the majority of Europeans (approximately 2/3rds) drank ≥ *2-3 days per week*. This contrasts with results of the PDACS that found Pacific and European/Other drinking frequencies to be comparable. In the PDACS, Pacific people reported consuming alcohol 2-3 days per week compared to the national average of 3 days per week.

Non-drinkers

Non-drinking was much more common in the middle aged and older Pacific people. This may be due in part to alcohol playing less of a role in older Pacific people's lives. It may also be that consumption of alcohol is socially frowned upon by Pacific communities and that older people are more likely to adhere to such social norms and expectations.

Reasons for stopping drinking

Social and family reasons were reported as the main cause for stopping drinking. It is possible that this may be a result of the importance placed on adhering to cultural/religious norms and familial expectations and a negative stigma that may surround alcohol consumption from within Pacific communities. The majority of Pacific people (83%) are religious,[17] which may contribute to social reasons cited for stopping drinking and abstaining from drinking altogether. Pacific drinkers were twice as likely as Europeans to experience hazardous drinking,[5] more likely to report violence and injury from other peoples drinking and problems from violence and serious arguments as a result of their own drinking.[3] Our results confirm the binging nature of Pacific drinkers alcohol consumption patterns (Table 5) as reported elsewhere. Negative consequences of this binge drinking may act as a deterrent from drinking and explain why Pacific drinkers were approximately five times more likely to stop compared to Europeans.

Limitations

While the DHAHS has many strengths (being one of the largest population based surveys of Pacific people allowing for intra-Pacific ethnic comparisons, gathering physical measurements of risk factor status) it also has limitations. An important limitation of this study and indeed nearly all studies on alcohol consumption, is the reliance on self-reported information concerning alcohol consumption and drinking patterns, which may be subject to recall and social desirability bias. Respondents may forget or report drinking behaviours that are more aligned to socially acceptable/appropriate norms rather than reality.

In addition, the low prevalence of drinking in this Pacific population has meant that the drinker sample is relatively small (n=299) compared to the whole Pacific sample (n=1011) making some analyses problematic. For this reason, findings need to be interpreted with caution especially when assessing the smaller Pacific ethnic groups and even more so when these groups are age or gender stratified.

Further research in this field could investigate in more detail the reasons why ex-drinkers stopped, and why many Pacific people abstained from alcohol consumption altogether. Research that aims to determine what environment can best facilitate the transformation of Pacific drinking patterns from the binging/hazardous style reported here and elsewhere to a more moderate/responsible style would also be useful.

Conclusion

Middle aged and older Pacific adults are less likely to consume alcohol than Europeans however those who do, consume more on an average occasion but drink less regularly so overall consume significantly lower amounts of pure alcohol. Drinking patterns in Pacific adults tend to show substantial diversity by age (older are less likely to drink), sex (women less likely to drink), and financial deprivation (middle groups consume more than least and most financially deprived). For Europeans these differences are not so large and a more homogenous drinking style was observed. Pacific drinkers were approximately five times more likely have stopped drinking compared to Europeans, citing family and social reasons as their main motivation for stopping drinking.

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