

# Child discipline and nurturing practices among a cohort of Pacific mothers living in New Zealand.

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## **Abstract**

*The Pacific Islands Families (PIF) study is a longitudinal investigation of a cohort (N=1376) of Pacific infants born in New Zealand (NZ), and their mothers and fathers.*

**Objectives:** *The PIF study aimed to determine: (1) the prevalence of disciplinary and nurturing parenting practices used with children at 12 months of age, and (2) the demographic, maternal and lifestyle factors associated with parenting practices.*

**Methods:** *At the 12-month measurement point, mothers (N=1207) were interviewed about their parenting practices using a modified version of the Parent Behaviour Checklist.*

**Results:** *High nurturance was significantly associated with Samoan ethnicity and post school qualifications, and low nurturance was significantly associated with post-natal depression, alcohol consumption and gambling. At the univariate level, high discipline scores were significantly associated with gambling, postnatal depression and lack of alignment to either Pacific or to European traditions. However the strongest association with discipline was the ethnicity variable with Tongan mothers reporting significantly higher disciplinary behaviours than all other ethnicities.*

**Conclusions:** *It is clear that there are a number of common underlying lifestyle issues that need to be considered when dealing with parenting problems in families with young children. However, specific to Pacific families, is Tongan ethnicity accounting for a strong cultural effect on parenting style, in particular high discipline scores relative to other Pacific groups. This important finding may be used to guide social policy and prevention programmes that are focused on the wellbeing of Pacific mothers and their children.*

**Key words:** *Pacific, nurturing, discipline.*

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## **Introduction**

Pacific peoples have been migrating to New Zealand (NZ) as early as the late 1800's. The census figures of 2006 show the total NZ population at 4,143,279 people and the total Pacific population living in NZ as 265,974. Health outcomes for Pacific peoples consistently show that Pacific peoples are among the

lowest socio-economic groupings in New Zealand and suffer disproportionately from diabetes, obesity, and other diseases. In addition, their children feature disproportionately higher in the mortality statistics compared to all other ethnic groups except Maori.

<sup>1,2,3</sup>Immigration to a new country brings with it a host of challenges for the people who have migrated as well as for the host country. The few studies of Pacific parenting practices clearly illustrate the issues that migrant parents contend with when the culture of the adopted country is at odds with the culture of their homeland. These inter-generational and inter-cultural challenges are well documented internationally<sup>4,5</sup> and in New Zealand.<sup>6,7,8,9</sup>

Closely linked with inter-cultural and inter-generational issues are the parenting styles. The values and beliefs of Pacific parents have been described as having a strong focus on obedience without question, and respect for adults.<sup>9</sup> The concern that often arises for migrant parents is the possibility that their children may become so acculturated into the host country that they lose any semblance of their own ways of doing and knowing.<sup>5</sup> It is suggested that conflict also arises when matters of religious and cultural significance are discarded more easily by their children born and bred in the new country and the parents' inability to either understand or tolerate this change. Duituturaga (1988)<sup>8</sup> describes discipline or violence in Pacific parenting being affected by factors such as motive, context and consequence, if the motive was to cause injury then it can be seen as violent but if the motive was to discipline then it is not seen as violent. The consequences of disciplinary action can also determine whether the action can be described as violent. "Minor bruises can be accepted as a reminder of the lesson to be learned whereas black bruises, cuts, burns, broken bones and serious injuries are often considered as unacceptable consequences" (Duituturaga, 1988, p.111).<sup>8</sup>

Extensive research<sup>4,10,11</sup> has shown that corporal punishment of children to control their behaviour does not produce positive results in the long term and is more likely to produce negative outcomes for both the child and the parents. Within a Pacific context, Anae (2002)<sup>12</sup> found that harsh parenting practices and lack of support and understanding leads to a number of migrant Pacific children in New Zealand, especially first generation, turning to gangs, risky behaviour, and results in poor educational outcomes and mental health problems as these children struggle to 'fit' in with their parents values and beliefs and those of their country of birth or adoption. Macpherson (1997) describes these 'high risk' youth as being disconnected from their families and their church and as most likely to become part of New Zealand's negative Pacific statistics of violent youth crime.

Pacific researchers have shown that Pacific parents

often physically discipline their children because they love them, a common scenario being 'I am hitting you because I love you'.<sup>7,8,9</sup> In a study of Samoan parenting, Cowley-Malcolm (2005)<sup>7</sup> showed that most of the participants claimed to have been punished because their parents were angry with them, and Fairbairn-Dunlop (2002)<sup>9</sup> found Samoan parents hit their children mostly because of disobedience. Duituturaga (1988)<sup>8</sup> reported that Pacific parents were concerned that if they didn't hit their children they would be seen to be spoilt by other people and would therefore not be loved. They believed, not disciplining or punishing their children would be viewed by God and others as an abdication of their role as 'good' parents. In contrast, a phone survey that included 100 Pacific peoples (Carswell, 2001)<sup>13</sup> found that European/other ethnic groupings (82%) Maori (73%) or Pacific (69%) ethnic groups were more accepting of disciplining their children if they were naughty.

In line with other researchers (Abel et al., 2001),<sup>14</sup> Cowley-Malcolm (2005)<sup>7</sup> found differences between parenting practices by Samoan parents born and bred in New Zealand and those born in Samoa. New

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Zealand born parents used less discipline and had 'other' ways of disciplining their children, like time out and withdrawal of privileges whereas Samoan born parents used swift, harsh punishment. An earlier small qualitative study (McCallin et al, 2001)<sup>15</sup> demonstrated that Pacific parents were struggling to raise their children in a different way than their parents had raised them with a number of participants wanting to discard the harsh

physical discipline of their upbringing in favour of a more nurturing approach. The pattern of punishment that was described by the NZ generation of Pacific peoples was very different from their description of how they were punished when they were children, depicting an emerging pattern of inter-generational differences.<sup>4,5</sup>

In terms of the prevalence of physical punishment of young children, Straus & Stewart (1999)<sup>11</sup> reported that 94% of American children had been spanked before they were 3-4 years of age. Wissow (2001)<sup>16</sup> found that African American parents reported a significantly higher prevalence of ever spanking (67%) compared with whites (57%), Hispanics (47%) and Asians (41%). Within the New Zealand context, Fergusson (1997)<sup>17</sup> reported that 7.8% of the New Zealand 18-year olds in the cohort study stated they were regularly punished physically by their parents. Different methodologies, age groups and environments yield a great deal of variability in the findings in terms of physical discipline.

It is in the light of the national and international concern

for the wellbeing of children, the PIF study aimed to determine the (1) prevalence of disciplinary and nurturing parenting practices used with the child at 12 month of age, and (2) demographic, maternal and lifestyle factors associated with parenting practices

## Method

### Participants

The PIF study is following a cohort of Pacific infants born at Middlemore Hospital in Auckland between 15 March and 17 December 2000. All potential participants were selected from births where at least one parent was identified as being of Pacific Islands ethnicity and was a New Zealand permanent resident. Participants were identified through the Birthing Unit, in conjunction with the Pacific Islands Cultural Resource Unit, and initial information about the study was provided and consent was sought to make a home visit. At 12 months postpartum maternal interviews were carried out. Female interviewers of Pacific ethnicity who were fluent in English and a Pacific Islands language visited mothers in their homes. Once informed consent was obtained, mothers participated in one-hour interviews concerning family functioning and the health and development of the child. This interview was conducted in the preferred language of the mother. Within the context of a wider interview at the 12 month data point, parenting practices were measured. Detailed information about the PIF cohort and procedures is described elsewhere.<sup>18</sup>

At the time of the birth 1708 mothers were identified, 1657 were invited to participate, 1590 (96%) consented to a home visit; and, of these, 1,477 (93%) were eligible for the PIF study. Of those eligible, 1,376 (93%) participated at the 6-weeks and 1224 (83%) at the 12-month measurement point. No important differential attrition was observed.

### Measures

**Parenting practices:** A modified version of the Parent Behaviour Checklist (PBC)<sup>19</sup> was used to measure parenting practices. The PBC is an empirically derived instrument developed for the parents of children one through four years of age. Modified versions of two subscales (nurturing and discipline) were used. Discipline items measure parental responses to problem behaviour, and nurturing items measure behaviour that promotes a child's psychological growth. Items are answered on a 4 point frequency scale and scores are summed. The two scale scores were categorised into four levels using quartiles. Higher scores in each subscale were indicative of greater nurturance and greater use of discipline behaviours.

**Cultural Orientation:** The General Ethnicity Questionnaire<sup>20</sup> is based on the widely used concept of *acculturation*, the process of change that groups

and individuals undergo when they come into contact with another culture. Berry (1980)<sup>21</sup> identified four different varieties of acculturation: "assimilation", "integration", "separation", and "marginalization". In assimilation, cultural identity is relinquished and the individual moves into the larger society. In the present analyses, mothers were categorized based on their acculturation scores for identification with New Zealand mainstream culture or with the Pacific Islands. Hence "assimilated" mothers had high New Zealand identification and low Pacific identification. Integration involves maintenance of cultural integrity but also the movement towards becoming an integral part of the larger society (high New Zealand/high Pacific Island). Separation refers to self-imposed withdrawal from the larger society (high Pacific/low New Zealand), and marginalization refers to losing the essential features of one's culture, but not replacing them by entering the larger society (low Pacific/low New Zealand).

**Post Natal Depression:** The Edinburgh Post Natal Depression Scale (EPDS) was administered at the 6-week assessment. It is a self report instrument that focuses on cognitive and affective aspects of depression rather than somatic symptoms. The scale does not provide a clinical diagnosis of depression, but a score above 12 is widely used to indicate the presence of probable depressive disorder. Reliability and validity has been established in a variety of populations<sup>22</sup> including New Zealand.<sup>23</sup> However the use of the EDPS with Pacific mothers is limited.<sup>24</sup>

### Analysis

The two subscales of the parenting scale were explored as continuous variables and then were dichotomised into two groups in terms of whether or not mothers fall in the top quartile (25%) of scores for each of the two subscales. Reliability analysis (Cronbach's alpha) was used to test the relationships between individual items in the subscales of nurturing and discipline. Univariable logistic regression procedure was employed to examine association between socio-demographic factors such as age, ethnicity, education, religion, household income, cultural orientation; lifestyle factors such as smoking, alcohol consumption and gambling; and maternal health measured by postnatal depression and being of the top quartile groups of nurturing or discipline. A stepwise multivariable logistic regression procedure was undertaken to assess the independent effects of these variables after adjusting of confounding factors. Nagelkerke's  $R^2$  was used to estimate the variability in the dependent variable explained by the model. All analyses were performed using SPSS version 13.0 statistical software package and a significance level of  $\alpha=0.05$  was used to determine statistical significance for all calculations.

**Table 1: Percent responses to Modified PBC items for mothers in the cohort (N=1207)<sup>1</sup>.**

Modified PBC Subscale and Item	Never/ almost never	Monthly	Fortnightly	Weekly	Daily / almost daily
<b>Nurturance</b>					
Take child to the park or playground	12.5	17.7	11.4	47.8	10.6
Child and I play together	0.3	0.3	0.5	6.3	92.5
Child spends time with partner /relatives	6.2	1.1	2.7	20.5	69.5
Get books for child	36.2	34.5	9.5	14.5	5.2
Involve child in quite activities	4.1	2.3	7.1	15.7	70.7
Praise child for learning new things	0.3	0.6	1.1	6.9	91.1
Plan surprises for child	34.5	44.2	5.4	9.4	6.5
Read to child	14.3	3.2	2.8	33.6	46.1
Take walks with child	6.3	2.2	4.6	39.3	47.5
Arrange activities for child...	8.3	2.7	8.0	28.7	52.3
<b>Discipline</b>					
Smack child	79.4	9.0	3.6	5.5	2.5
Yell at child	78.2	6.1	3.2	7.0	5.5
Threaten to punish child	86.4	5.1	2.4	3.4	2.7
Tell child that he/she is bad	79.0	5.9	3.0	5.8	6.4
Hit child with an object	99.8	0.1	0.0	0.2	0.0

<sup>1</sup>Numbers responding to several items were slightly fewer

## Results

Twelve hundred and seven mothers responded to the questions about discipline and nurturing behaviours. Most of the mothers were in the 20-29 (612, 50.7%) year old age group and the Samoan ethnic group made up the majority of the respondents (583, 48.3%). A large majority of the mothers (90%) praised their children daily or almost daily, (52.3%) arranged activities for their children daily, and 46.1% read to their children daily or almost daily. A large percentage of the Pacific mothers in this cohort did not smack their child (79.4%), nor yell at their child (78.2%), nor threaten to punish (86.4%), nor tell their child they are bad (79%) nor hit their child with an object (99.8%). Table 1 presents the responses to the modified PBC items for mothers in the cohort.

### Nurturance

Univariable analysis revealed significant associations between nurturance scores and ethnicity, partnered mothers, religion, cultural alignment, smoking, alcohol consumption, gambling and post natal

depression. Samoan mothers were more likely to fall in the higher quartile of nurturance scores (23.8%) than other groups with Tongans (10%) and Niueans (8.8%). Nurturance scores were significantly higher for mothers who were partnered/married and those who reported being more aligned to 'both' Pacific and European traditions. In relation to lifestyle factors those mothers who drank, smoked, and gambled were significantly less likely to report high nurturing practices. Those mothers who reported suffering from post natal depression were also significantly less likely to report nurturing behaviours. Although mothers with post school qualifications reported higher nurturance scores these did not reach significance, and there were no significant associations found with household income, whether you were New Zealand born or Pacific born or the length of time respondents had lived in New Zealand. Being employed or in a particular family structure (either nuclear or extended) also showed no significant association with nurturance. Table 2 presents the unadjusted odds ratios for the nurturance subscale.

Table 2: Numbers (row percentages) and unadjusted odds ratios for Modified PBC Nurturance subscale scores by selected variables

Variable	Category	Relative score <sup>1</sup>				Unadjusted odds ratio (95% CI)		Overall P value
		Lower		Higher		Odds ratio	95% CI	
		n	%	n	%			
<b>Socio-economic factors</b>								
Age	<20	39	84.8	7	15.2	1		0.747
	20–29	507	82.8	105	17.2	1.15	(0.52, 2.65)	
	30–39	398	81.2	92	18.8	1.29	(0.56, 2.97)	
	40+	49	86.0	8	14.0	0.91	(0.30, 2.73)	
Ethnicity	Samoan	444	76.2	139	23.8	1.00		<0.001
	Cook Island Maori	181	87.4	26	12.6	0.45	(0.29, 0.72) †	
	Niuean	52	91.2	5	8.8	0.31	(0.12, 0.78) *	
	Tongan	215	90.0	24	10.0	0.36	(0.22, 0.57) †	
	Other Pacific <sup>2</sup>	30	81.1	7	18.9	0.74	(0.32, 1.73)	
	Non Pacific	72	86.7	11	13.3	0.19	(0.25, 0.95) *	
Education	No formal	376	83	77	17	1		0.054
	Secondary school	344	85.1	60	14.9	0.85	(0.59, 1.23)	
	Post-school	274	78.5	75	21.5	1.34	(0.94, 1.90)	
House income	\$0 - \$20,000	327	83.8	63	16.2	1		0.579
	\$20,001 – \$40,000	512	81.1	119	18.9	1.21	(0.86, 1.69)	
	>\$40,000	120	82.8	25	17.2	1.08	(0.65, 1.80)	
	Unknown	35	87.5	5	12.5	0.74	(0.28, 1.97)	
Social marital status	Non Partnered	201	87.4	29	12.6	1.00		0.029
	Partnered	793	81.3	183	18.8	1.60	(1.05, 2.44) *	
NZ born	No	670	83.5	132	16.5	1		0.150
	Yes	324	80.2	80	19.8	1.25	(0.92, 1.71)	
Years lived in NZ	0–5	189	84.4	35	15.6	1		0.337
	6–10	113	85.6	19	14.4	0.91	(0.50, 1.66)	
	>10	689	81.3	158	18.7	1.24	(0.83, 1.85)	
Religious affiliation	No	82	90.1	9	9.9	1.00		0.049
	Yes	912	81.3	203	18.2	2.03	(1.00, 4.10) *	
Employment	No	723	82.6	152	17.4	1		0.758
	Yes	271	81.9	60	18.1	1.05	(0.76, 1.47)	
Family structure	Nuclear family	495	81.4	113	18.6	1		0.355
	Extended family	499	83.4	99	16.6	0.87	(0.65, 1.17)	
Acculturation	Assimilationist	320	83.8	62	16.2	1		0.006
	Segregationalist	316	80.0	79	20.0	1.29	(0.89, 1.86)	
	Integrator	160	76.9	48	23.1	1.55	(1.02, 2.36)*	
	Marginal	189	89.2	23	10.8	0.63	(0.38, 1.05)	
<b>Lifestyle factors</b>								
Smoking	No	681	80.8	162	19.2	1		0.028
	Yes	309	86.1	50	13.9	0.68	(0.48, 0.96)*	
Alcohol	No	781	80	195	20	1		0.000
	Yes	212	92.6	17	17.6	0.32	(0.19, 0.54) †	
Gambling	No	646	77.4	189	22.6	1		<0.001
	Yes	348	93.8	23	6.2	0.23	(0.14, 0.36) †	
<b>Maternal health</b>								
Post natal depression	No	811	80.7	194	19.3	1.00		0.001
	Yes	172	91.0	17	9.0	0.41	(0.25, 0.70) †	

\* $P < 0.05$ ; †  $P < 0.01$ ; ‡  $P < 0.001$ , <sup>1</sup> Lower and higher relative scores fell within the lower three-quarters and upper quarter of the distribution respectively. <sup>2</sup> Includes mothers identifying equally with two or more Pacific Island groups, equally with Pacific Island and non Pacific Island groups, or with Pacific Island groups other than Tongan, Samoan, Cook Island Maori or Niuean

After adjusting of confounding factors the significant factors associated with low nurturance were ethnicity (Cook Island and Tongan), alcohol, gambling and post natal depression, and with high nurturance was ethnicity (Samoan) and post school qualifications. The variables attaining significance from multivariable logistic regression are presented in Table 3.

**Table 3: Adjusted odds ratios and 95% CI for higher nurturance scores<sup>1</sup>**

Variable	Category	Adjusted odds ratio (95% CI)		Overall P value
		Odds ratio	95% CI	
<b>Socio-economic factors</b>				
Ethnicity	Samoan	1.00		0.007
	Cook Island Maori	0.59	(0.36, 0.95) *	
	Niuean	0.41	(0.15, 1.08)	
	Tongan	0.44	(0.27, 0.71) †	
	Other Pacific <sup>2</sup>	0.98	(0.40, 2.41)	
	Non Pacific	0.87	(0.42, 1.81)	
Education	No formal	1		0.009
	Secondary school	0.91	(0.62, 1.34)	
	Post-school	1.62	(1.11, 2.37) *	
<b>Lifestyle factors</b>				
Alcohol	No	1		0.002
	Yes	0.40	(0.22, 0.71) ‡	
Gambling	No	1		<0.001
	Yes	0.27	(0.17, 0.44) ‡	
<b>Maternal health</b>				
Post natal depression	No	1		0.02
	Yes	0.52	(0.30, 0.90)*	

Nagelkerke R<sup>2</sup>=14%

\*P<0.05; †P<0.01; ‡P<0.001

<sup>1</sup>Lower and higher relative scores fell within the lower three-quarters and upper quarter of the distribution respectively.

<sup>2</sup>Includes mothers identifying equally with two or more Pacific Island groups, equally with Pacific Island and non Pacific Island groups, or with Pacific Island groups other than Tongan, Samoan, Cook Island Maori or Niuean

## Discipline

Univariate analysis revealed no significant association between age and discipline, although those aged below 20 scored substantially less on the discipline scale. The findings in relation to ethnicity showed that Samoan mothers scored significantly lower in the discipline scale than all other ethnicities, with Tongan mothers scoring the highest on the discipline scale. Discipline was not significantly associated with education, household income, marital status, where respondents were born, the number of years lived in New Zealand, religious affiliation, employment and family structure. However, cultural alignment was significantly associated with discipline with those participants who reported being more aligned with Pacific traditions and participants who reported being aligned to both Pacific and European traditions having lower discipline scores. The univariate findings also revealed that participants who gambled and who had experienced post natal depression scored higher

on the discipline scale. In relation to other lifestyle factors no significant relationship was found between discipline scores and smoking and alcohol. Drugs were not included in the analysis as the numbers of respondents who took drugs were very small. Table 4 presents the unadjusted odds ratios for the discipline subscale.

Only ethnicity was retained in the multivariable regression model in association with higher discipline score. Comparing with Samoans, the odds ratios of having higher discipline scores were 7.88 (95%CI: 4.93, 12.61) in Cook Island, 5.99 (95%CI: 2.96, 12.51) in Niuean, 27.80 (95%CI: 17.75, 43.55) in Tongan, 8.77 (95%CI: 4.02, 19.18) in other Pacific and 8.77 (95%CI: 4.88, 15.78) in non Pacific mothers, respectively. Table 5 presents adjusted odds ratios for higher discipline scores among the different Pacific ethnic groups.

Table 4: Numbers (row percentages) and unadjusted odds ratios for Modified PBC Discipline subscale scores by selected variables

Variable	Category	Relative score <sup>1</sup>				Unadjusted odds ratio (95% CI)		
		Lower		Higher		Odds ratio	95% CI	Overall P value
		n	%	n	%			
<b>Socio-economic factors</b>								
Age	<20	37	80.4	9	19.6	1		0.682
	20–29	453	74	159	26	1.44	(0.68, 3.06)	
	30–39	373	76.3	116	23.7	1.28	(0.60, 2.73)	
	40+	42	73.7	15	26.3	1.47	(0.58, 3.75)	
Ethnicity	Samoaan	552	94.7	31	5.3	1.00		<0.001
	Cook Island Maori	141	68.1	66	31.9	8.33	(5.24, 13.27) <sup>‡</sup>	
	Niuean	42	73.7	15	26.3	6.36	(3.18, 12.70) <sup>‡</sup>	
	Tongan	91	38.2	147	61.8	28.76	(18.41, 44.95) <sup>‡</sup>	
	Other Pacific <sup>2</sup>	25	67.6	12	32.4	8.55	(3.93, 18.60) <sup>‡</sup>	
	Non Pacific	55	66.3	28	33.7	9.07	(5.07, 16.21) <sup>‡</sup>	
Education	No formal	344	76.1	108	23.9	1		0.549
	Secondary school	296	73.3	108	26.7	1.16	(0.85, 1.58)	
	Post-school	266	76.2	83	23.8	0.99	(0.72, 1.38)	
House income	\$0 - \$20,000	307	78.7	83	21.3	1		0.216
	\$20,001 – \$40,000	467	74.1	163	25.9	1.29	(0.96, 1.74)	
	>\$40,000	103	71	42	29	1.51	(0.98, 2.33)	
	Unknown	29	72.5	11	27.5	1.40	(0.67, 2.93)	
Social marital status	Non Partnered	182	79.1	48	20.9	1	0.125	
	Partnered	724	74.3	251	25.7	1.32	(0.93, 1.86)	
NZ born	No	597	74.5	204	25.5	1		0.459
	Yes	309	76.5	95	23.5	0.9	(0.68, 1.19)	
Years lived in NZ	0–5	169	75.8	54	24.2	1		0.873
	6–10	97	73.5	35	26.5	1.13	(0.69, 1.85)	
	>10	639	75.4	208	24.6	1.02	(0.72, 1.44)	
Religious affiliation	No	63	69.2	28	30.8	1		0.173
	Yes	843	75.7	271	24.3	0.72	(0.45, 1.15)	
Employment	No	650	74.4	224	25.6	1		0.287
	Yes	256	77.3	75	22.7	0.85	(0.63, 1.15)	
Family structure	Nuclear family	457	75.3	150	24.7	1		0.934
	Extended family	449	75.1	149	24.9	1.01	(0.78, 1.31)	
Acculturation	Assimilationist	276	72.3	106	27.7	1		0.001
	Segregationalist	315	79.9	79	20.1	0.65	(0.47, 0.91) <sup>*</sup>	
	Integrator	166	79.8	42	20.2	0.66	(0.44, 0.99) <sup>*</sup>	
	Marginal	142	67	70	33	1.28	(0.89, 1.85)	
<b>Lifestyle factors</b>								
Smoking	No	634	75.2	209	24.8	1		0.980
	Yes	269	75.1	89	24.9	1.0	(0.75, 1.34)	
Alcohol	No	742	76.1	233	23.9	1		0.121
	Yes	163	71.2	66	28.8	1.29	(0.94, 1.78)	
Gambling	No	650	77.9	184	22.1	1		0.001
	Yes	256	69	115	31	1.59	(1.31, 2.09) <sup>†</sup>	
<b>Maternal health</b>								
Post natal depression	No	790	78.7	214	21.3	1.00		<0.001
	Yes	111	58.7	78	41.3	2.59	(1.87, 3.60) <sup>‡</sup>	

\* $P < 0.05$ ; <sup>†</sup>  $P < 0.01$ ; <sup>‡</sup>  $P < 0.001$ <sup>1</sup>Lower and higher relative scores fell within the lower three-quarters and upper quarter of the distribution respectively.<sup>2</sup>Includes mothers identifying equally with two or more Pacific Island groups, equally with Pacific Island and non Pacific Island groups, or with Pacific Island groups other than Tongan, Samoaan, Cook Island Maori or Niuean

**Table 5: Adjusted odds ratios and 95% CI for higher discipline scores<sup>1</sup>**

Variable	Category	Adjusted odds ratio (95% CI)		
		Odds ratio	95% CI	Overall P value
<b>Socio-economic factors</b>				
Ethnicity	Samoan	1.00		<0.001
	Cook Island Maori	7.88	(4.93, 12.61) ‡	
	Niuean	5.99	(2.96, 12.15) ‡	
	Tongan	27.80	(17.75, 43.55) ‡	
	Other Pacific <sup>2</sup>	8.77	(4.02, 19.18) ‡	
	Non Pacific	8.77	(4.88, 15.78) ‡	

Nagelkerke R<sup>2</sup>=34%

\*P<0.05; † P<0.01; ‡ P<0.001

<sup>1</sup>Lower and higher relative scores fell within the lower three-quarters and upper quarter of the distribution respectively.

<sup>2</sup>Includes mothers identifying equally with two or more Pacific Island groups, equally with Pacific Island and non Pacific Island groups, or with Pacific Island groups other than Tongan, Samoan, Cook Island Maori or Niuean.

## Discussion

These findings show that the majority of Pacific mothers nurtured their child and did not yell, hit or tell their twelve-month-old child they are bad. The strongest finding was the association between parenting behaviours and Pacific ethnicity. Tongan mothers scored significantly higher on the discipline scale and lower on the nurturing scale and Samoan mothers were significantly lower on the discipline scale and higher on the nurturing scale. These findings may partly be explained by immigration patterns. On average the Samoan population have been in New Zealand longer than New Zealand's Tongan population.<sup>25</sup> This may mean that the effects of acculturation are distinct and could contribute to the reported differences in parenting practices. It is also important to consider that politically, socially and culturally the two countries have their own unique history. Disparate maternal and paternal roles may also explain these differences, as Tongan mothers (rather than fathers) may be the chief disciplinarian whilst for Samoans fathers may be more likely to take up this responsibility. Further research into parenting practices of our Pacific fathers is needed to more fully understand these findings. Although one can only speculate as to the reasons why the results showed this considerable difference it would be remiss of researchers not to consider the uniqueness of ethnic specific groupings; each with their own languages, culture and traditions.

It is interesting to note that at univariate level, cultural orientation of the mothers was significant, those who were defined as integrators were less likely to discipline and more likely to nurture. Integration involves maintenance of cultural integrity but also the movement towards becoming an integral part of the larger society (high New Zealand/high Pacific

Island). In terms of prevention and intervention it is clear that what may work for one ethnicity may not necessarily work for another, and if we are to make a difference we must address the issues within the specific communities.

Postnatal depression has been shown to have adverse effects on the wellbeing of children,<sup>26</sup> with significant negative effects on early mother-infant interaction.<sup>27,28</sup> In line with these findings we found that maternal depression was significantly associated with low nurturance and high discipline scores. Previous PIF findings at the 6-weeks time point revealed a large prevalence difference occurred between Tongan mothers and other Pacific Island groups with post natal depression prevalence estimates ranging from 7.7% for Samoans to 30.9% for Tongans.<sup>29</sup> It is possible that Tongans residing in New Zealand experience higher rates of depression generally, not just postpartum which may in part, explain the high discipline and low nurturance scores reported by Tongan mothers at 12 months. It is clear that many different factors are implicated in family wellbeing and in the way parents raise their children and we cannot assume that all Pacific groups face the same pressures in their daily lives.

In terms of lifestyle, low nurturance scores were significantly associated with alcohol consumption and gambling. Research has shown that children of problem gamblers report feeling abandoned, rejected, neglected emotionally deprived and isolated<sup>30,31</sup> and typically experience inconsistency in their relationships with parents, at times being ignored and at other times being nurtured.<sup>32</sup> Darbyshire et al. (2001)<sup>33</sup> described children's experience of living with a parent who had a problem gambling as one

of pervasive loss which included the loss of security and trust and engendered feelings that they were not loved or valued. The wide range of negative effects of alcohol consumption on the parent-child relationship is also well documented. The association between parental substance abuse, child neglect and developmental progress with respect to psychological functioning during infancy and early childhood<sup>34,35</sup> is particularly pertinent. An important task in infancy is socio-emotional development in infancy, influenced to a significant extent, by the quality of parenting, is the formation of a secure infant-caregiver attachment. Consequent to neglectful parenting and emotional unavailability is insecure attachment, observed in 80-100% in maltreated samples.<sup>36</sup> Given that these correlates of low maternal nurturance have emerged in previous studies, it is clear that there are a number of common underlying lifestyle issues that need to be considered when dealing with parenting problems in families with young children.

Caution is required when interpreting these findings due to the data being based on maternal report rather than an objective measure of parenting styles. However data is collected by a team of interviewers who are from the main Pacific ethnicities thus mothers are usually interviewed by women of their own specific ethnicity. The cultural sensitivity of our methods and procedures and the size of the cohort demonstrate the robustness of the PIF Study findings. It is important to note that the PIF Study is breaking new ground in different areas of investigation with the Pacific population and in many cases these are the first set of findings in a specific area. There is a scarcity of Pacific research in the area of parenting and thus there is no comparative data to contribute to a clearer picture of this important aspect of family life. It is vital that further research is undertaken, both quantitatively and qualitatively, to investigate ethnic differences in more depth and thus provide some insight into the reasons behind such findings. However, these findings are a starting point for the evidenced based design of policy and prevention programmes that are focused on the wellbeing of Pacific mothers and their children.

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