Suicide mortality among Pacific peoples in New Zealand, 1996–2013

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ABSTRACT

AIM: The aim of this study was to describe trends in suicide mortality for Pacific peoples in New Zealand by reviewing official data over the period 1996–2013.

METHOD: Death registrations where the underlying causes of death were intentional self-harm was examined and area of interest was identified and presented.

RESULTS: Over a 17-year period (1996–2013), there were 380 total Pacific suicides (4.1%) out of 9,307 suicides nationally for New Zealand's total population.

CONCLUSION: Priority areas for effective suicide prevention include: Pacific young males, Pacific ethnic foci, clear ethnic disparities and inequalities for Pacific suicide mortality when compared to New Zealand's total population; safe, ethical and culturally appropriate messaging around suicide methods; the importance of the role of mental health and addictions in suicide prevention. On average, there are at least 22 Pacific suicides annually in New Zealand. Irrespective of small numbers, further Pacific ethnic breakdown is needed other than Samoan, Cook Islands and Tongan, as this is problematic for suicide prevention efforts for the exclusion of other Pacific groups.

Suicide is a major public health concern.[1] The World Health Organization (WHO) estimates that, globally, over 800,000 people die by suicide each year, representing an annual global age-standardised suicide rate of 11.4 per 100,000 population (15.0 for males and 8.0 for females), or one suicide death occurring every 40 seconds.[2] There are in fact more deaths due to suicide than to war and homicide combined.[3] Moreover, as suicide is a sensitive issue, and illegal in some countries, it is highly likely that there is under-reporting.[2] It is predicted that by 2020, the rate will increase to 1.53 million per year, equating to one suicide death occurring every 20 seconds.[4]In New Zealand, there are approximately 500 suicide deaths per year.[5] While suicide mortality for Pacific peoples and Asians aged 15 years and older in New Zealand occurs at a lower rate when compared to the population as a whole,[6] Pacific peoples, and in particular Pacific young peoples (12–18 years of age), are disproportionately three times more likely to attempt suicide, at 8.6% in comparison to New Zealand Europeans at 2.7%.[7]Across Australasia and the wider Pacific region, more investigations focused on Pacific suicide prevention are needed to continue informing current initiatives. There is unease that suicide is increasing among Pacific communities in New Zealand.[8–18] While investigations into Pacific suicide prevention have been growing, this accumulation has been gradual and often dominated by qualitative studies. In New Zealand over the last decade, Pacific suicide prevention efforts have relied upon this evidence base.

What has been relatively obscure from this body of knowledge is the statistical trend for Pacific suicidal behaviours and outcomes over time. An examination of Ministry of Health suicide mortality data allows the potential to converge on specific areas for prevention and further research.

This study is the first statistical analysis of trends in suicide mortality for Pacific peoples across Australasia and the wider Pacific Region.

The aim of this study is to describe trends in suicide mortality for Pacific peoples in New Zealand using official data over the period 1996–2013.

Method

Suicide mortality rates for Pacific peoples in New Zealand were derived from Ministry of Health data to examine trends over time from January 1996 to December 2013. The data comprise death registrations where the underlying cause of death was intentional self-harm (ICD9CMAII codes 950–959, ICD10AM codes X60–X84). Only the most recent official data available at the time of writing have been included. There is a delay between the year of death and data release, primarily as deaths are required to be classified by a coroner, and data are only released at the completion of their inquiry.

Descriptive tables of the outcome of interest are presented, and include: suicide deaths by Pacific ethnic breakdown (ie, Samoan, Cook Islands, Tongan and Other), gender, age group and deprivation quintile; suicide deaths per year by ethnicity; cause of death and other contributing causes; suicide deaths by ethnicity and years living in New Zealand; and suicide deaths by district health board area. [Note that tables exclude missing data, so the total numbers (and associated percentages) may vary from table to table.] For each substantive variable, the numbers of admissions/discharges (and the percentages) in various categories are shown.

Results

In the 17-year period of January 1996–December 2013, there were 380 Total Pacific suicides (4.1%) out of 9,307 suicides nationally (Total NZ). Samoans made up the largest Pacific group with 135 or 35.5% of Total Pacific suicides. Suicide is more prevalent in males across all Pacific ethnic groups ranging from 68.8% (Tongan) to 83.7% (Samoan). In total, Pacific males comprised 77.6% compared to 75.7% in Total NZ, showing a similar pattern by gender (Table 1).

Across Pacific ethnic groups, suicides were most prevalent in the youth age range (15–24 years), followed by the 25–39 group, except for among Samoans where the order was reversed. For Total Pacific, the percentages in each age group in order of magnitude were: 15–24 (45.8%), 25–39 (35.3%), 40+ (16.8%) and <15 (2.1%); from a peak in youth there is a gradual decline in prevalence at older ages. This can be compared to the Total NZ distribution shown as follows: 40+ (45.3%), 25–39 (30.8%), 15–24 (22.8%), <15 (1.1%); here it can be seen that prevalence increases with age group so the highest percentage is in the 40+ group. In Total Pacific, the largest group were males aged 15–24 (35.5% of all suicides), compared to males aged 40+ (34.3% of all suicides), who were the largest group in Total NZ (Table 1).

The prevalence of suicides increased with deprivation across all Pacific ethnic groups, whereby 57.4% of Pacific peoples were in the worst deprivation quintile for Total Pacific. The percentage was highest in Cook Islands people (66.7%). Although prevalence also increased with deprivation in Total NZ, the distribution was much more even with a gradual rise to 25.0% in the worst deprivation quintile (Table 1).

Table 1: Suicides by ethnicity and characteristics (gender-age group, deprivation§), January 1996–December 2013.

	Samoan			Cook Islands			Tongan		
	M	F	All	M	F	All	M	F	All
Age group									
<15	1	2	3 (2.2%)	1	1	2 (2.2%)	-	3	3 (4.2%)
15–24	42	6	48 (35.6%)	33	11	44 (47.3%)	33	12	45 (63.4%)
25–39	47	10	57 (42.2%)	24	11	35 (37.6%)	16	-	16 (22.5%)
40+	23	4	27 (20.0%)	6	6	12 (12.9%)	5	2	7 (9.9%)
Total	**113 (83.7%)**	**22 (16.3%)**	**135 (100%)**	**64 (68.8%)**	**29 (31.2%)**	**93 (100%)**	**54 (76.1%)**	**17 (23.9%)**	**71 (100%)**
Deprivation	All			All			All		
1 Least	3 (2.2%)			3 (3.2%)			3 (4.3%)		
2	11 (8.2%)			5 (5.4%)			3 (4.3%)		
3	18 (13.4%)			8 (8.6%)			8 (11.4%)		
4	26 (19.4%)			15 (16.1%)			15 (21.4%)		
5 Most	76 (56.7%)			62 (66.7%)			41 (58.6%)		
Total	134 (100%)			93 (100%)			70 (100%)		
Missing	1			-			1		

	Other Pacific			Total Pacific			Total NZ		
	M	F	All	M	F	All	M	F	All
Age group									
<15	-	-	-	2	6	8 (2.1%)	56	47	103 (1.1%)
15–24	27	10	37 (45.7%)	135	39	174 (45.8%)	1,574	545	2,119 (22.8%)
25–39	21	5	26 (32.1%)	108	26	134 (35.3%)	2,225	642	2,867 (30.8%)
40+	16	2	18 (22.2%)	50	14	64 (16.8%)	3,188	1,030	4,218 (45.3%)
Total	**64 (79.0%)**	**17 (21.0%)**	**81 (100%)**	**295 (77.6%)**	**85 (22.4%)**	**380 (100%)**	**7,043 (75.7%)**	**2,264 (24.3%)**	**9,307 (100%)**
Deprivation	All			All			All		
1 Least	4 (5.1%)			13 (3.5%)			1,316 (14.2%)		
2	9 (11.4%)			28 (7.4%)			1,554 (16.8%)		
3	12 (15.2%)			46 (12.2%)			1,865 (20.1%)		
4	17 (21.5%)			73 (19.4%)			2,212 (23.9%)		
5 Most	37 (46.8%)			216 (57.4%)			2,312 (25.0%)		
Total	79 (100%)			376 (100%)			9,258 (100%)		
Missing	2			4			49		

§NZDep is an area-based measure of deprivation.[19]

Table 2 demonstrates that from 1996 to 2013, though fluctuations exist from year to year, there appears to be, on average, a very gradual increase in the incidence of suicide among Pacific peoples compared to the reverse trend in the total NZ population; this finding needs to be taken with caution because of small numbers. Trends are impossible to discern among particular Pacific groups because of even smaller numbers.

Table 2: Suicides per year by ethnicity, January 1996–December 2013.

Year	Samoan	Cook Islands	Tongan	Other Pacific	Total Pacific	Total NZ
1996	11	4	1	2	18	540
1997	5	4	-	4	13	562
1998	9	6	5	4	24	579
1999	3	7	2	2	14	517
2000	3	1	5	3	12	459
2001	12	4	3	3	22	508
2002	8	7	1	2	18	470
2003	5	9	2	7	23	522
2004	5	3	4	3	15	494
2005	8	5	4	4	21	515
2006	9	3	4	5	21	524
2007	11	3	4	7	25	501
2008	7	6	6	10	29	518
2009	8	6	6	8	28	512
2010	8	6	3	5	22	534
2011	6	7	11	1	25	493
2012	10	6	7	6	29	550
2013	7	6	3	5	21	509
Total	**135**	**93**	**71**	**81**	**380**	**9,307**

Table 3: Suicides by ethnicity: cause of death, January 1996–December 2013.

	Samoan		Cook Islands		Tongan		Other Pacific		Total Pacific		Total NZ	
Cause of death	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Hanging	102	75.6	78	83.9	60	84.5	59	72.8	299	78.7	4,816	51.7
Poisoning	10	7.4	5	5.4	2	2.8	10	12.3	27	7.1	2,668	28.7
Burning	3	2.2	3	3.2	-	-	2	2.5	8	2.1	91	1.0
Drowning	2	1.5	-	-	-	-	-	-	2	0.5	204	2.2
Shooting	3	2.2	2	2.2	1	1.4	2	2.5	8	2.1	847	9.1
Jumping	2	1.5	1	1.1	5	7.0	4	4.9	12	3.2	259	2.8
Crashing	9	6.7	3	3.2	-	0.0	2	2.5	14	3.7	187	2.0
Other	4	3.0	1	1.1	3	4.2	2	2.5	10	2.6	235	2.5
Total	**135**	**100**	**93**	**100**	**71**	**100**	**81**	**100**	**380**	**100**	**9,307**	**100**

Table 4: Suicides with other relevant diseases or contributing causes, January 1996–December 2013.

	Samoan	Cook Islands	Tongan	Other Pacific	Total Pacific	Total NZ
Mental/behavioural disorders due to drugs/alcohol	26 (19.3%)	17 (18.3%)	7 (9.9%)	11 (13.6%)	61 (16.1%)	1,218 (13.1%)
Other	11 (8.1%)	4 (4.3%)	8 (11.3%)	9 (11.1%)	32 (8.4%)	473 (5.1%)
Total	135 (100%)	93 (100%)	71 (100%)	81 (100%)	380 (100%)	9,307 (100%)

Hanging is by far the most common cause of death at 78.7% of Total Pacific and 51.7% of Total NZ. This is followed by poisoning at 7.1% of Total Pacific and 28.7% of Total NZ. Among Pacific ethnic groups, hanging was most prevalent in Tongans (84.5%) with poisoning prevailing in Other Pacific (12.3%) (Table 3).

Table 4 shows those suicides where another relevant disease or contributing cause was reported. Mental or behavioural disorders due to drugs or alcohol comprised 16.1% of all suicides in Total Pacific, compared to 13.1% of all suicides in Total NZ. Among Pacific ethnic groups, this percentage was highest in Samoan (19.3%).

Prevalence was higher in the New Zealand-born group compared to the overseas-born group in Total Pacific (56.6%) and more so in Total NZ (83.9%) as indicated. This pattern was not uniform across Pacific ethnic groups, with overseas-born being higher in Tongan (50.8%) and Other Pacific (56.3%). For those born overseas, the highest prevalence was in the 40+ age-group in Total Pacific (29.6%) and more so in Total NZ (48.7%) (Table 5).

Analysis by district health board region highlights that most of the Total Pacific suicides occurred in Counties-Manukau (32.7%), Auckland (21.5%), Waitematā (12.2%) and Capital-Coast (10.1%). By comparison, most of the Total NZ suicides occurred in Canterbury (12.4%), Waitematā (10.3%), Counties-Manukau (9.3%) and Auckland (8.5%) (Table 6).

Table 5: Suicides by ethnicity: years living in New Zealand, January 1996–December 2013.

	Samoan		Cook Islands		Tongan		Other Pacific		Total Pacific		Total NZ	
Born overseas: Years in New Zealand	n	%	n	%	n	%	n	%	n	%	n	%
0–4	5	9.3	7	28.0	8	24.2	7	17.5	27	17.8	195	13.3
5–9	5	9.3	5	20.0	6	18.2	7	17.5	23	15.1	198	13.6
10–14	12	22.2	5	20.0	8	24.2	9	22.5	34	22.4	197	13.5
15–19	13	24.1	1	4.0	6	18.2	3	7.5	23	15.1	159	10.9
20+	19	35.2	7	28.0	5	15.2	14	35.0	45	29.6	712	48.7
Sub-total	54 (42.2%)	100	25 (29.1%)	100	33 (50.8%)	100	40 (56.3%)	100	152 (43.4%)	100	1,461 (16.1%)	100
Born in New Zealand	74 (57.8%)		61 (70.9%)		32 (49.2%)		31 (43.7%)		198 (56.6%)		7,588 (83.9%)	
Total	128 (100%)		86 (100%)		65 (100%)		71 (100%)		350 (100%)		9,049 (100%)	
Missing	7		7		6		10		30		258	

Table 6: Suicides by ethnicity: DHB area, January 1996–December 2013.

	Samoan	Cook Islands	Tongan	Other Pacific	Total Pacific		Total NZ	
DHB	**n**	**n**	**n**	**n**	**n**	**%**	**n**	**%**
Northland	-	1	-	1	2	0.5	389	4.2
Waitematā	17	9	4	16	46	12.2	954	10.3
Auckland	23	16	24	18	81	21.5	786	8.5
Counties Manukau	46	33	31	13	123	32.7	865	9.3
Waikato	1	8	-	-	10	2.7	739	8.0
Lakes	-	2	1	2	5	1.3	274	3.0
Bay of Plenty	4	2	-	-	6	1.6	525	5.7
Tairawhiti	-	1	-		1	0.3	125	1.3
Hawke’s Bay	5	3	-	2	10	2.7	410	4.4
Taranaki	1	-	-	-	1	0.3	255	2.8
Midcentral	1	-	1	2	4	1.1	448	4.8
Whanganui	-	1	1		1	0.3	180	1.9
Capital and Coast	20	7	3	8	38	10.1	498	5.4
Hutt	2	4		7	13	3.5	293	3.2
Wairarapa	1	1	-	-	2	0.5	101	1.1
Nelson Marlborough	1	1	-	1	3	0.8	310	3.3
West Coast	-	-	-	-	-	-	102	1.1
Canterbury	7	1	1	7	16	4.3	1,152	12.4
South Canterbury	-	-	1	-	1	0.3	139	1.5
Southern	5	3	3	2	13	3.5	716	7.7
Total	**134**	**93**	**70**	**79**	**376**	**100**	**9,261**	**100**
Missing	1	-	1	2	4		46	

Discussion

This study is the first statistical analysis of trends in suicide mortality in Pacific peoples in New Zealand. Across Pacific ethnic groups, suicide remains a concern, particularly among young people as demonstrated by a higher prevalence. However, Samoan suicides are much higher than all other Pacific groups in the age ranges of 25–39 and 40+ years. Even within the Pacific population there are distinctions—the often obscured heterogeneity of the Pacific population cannot be ignored. It also suggests that Pacific ethnic-specific investigations into suicide prevention are still very much needed.

Over the last 17 years, on average there have been around 22 suicides among Pacific peoples in New Zealand each year. In addition, Samoan suicides in particular appear to increase every five years. It is not surprising that, by district health board, the urban regions of Counties Manukau, Auckland, Capital Coast and Waitematā have a greater prevalence of Pacific suicides than other regions in the country, particularly as they have a high Pacific population density.

For Total NZ, it can be seen that prevalence increases with age group, with the highest percentage in the 40+ age range. This, however, is not the case for Pacific groups (except for Samoans and Pacific children under 15 years of age). Could this be attributed to the prescribed cultural value held by most Pacific peoples in supporting and caring for their older members? For instance, for most Pacific peoples, aged members are the most respected, regardless of biological ties, and considered the most important members of society. Reciprocal care is vital to Pacific families.[20] This may be one explanation ascribed to the rare occurrence of suicide in the 40+ age group. This is an area of research that could be a positive contribution not only to suicide prevention, but also for aged care. One could take learnings from the cultural experiences and expectations of caring for the Pacific older population.

Clearly, more work needs to be undertaken in the Pacific male youth space where suicide has been predominant among Total Pacific males aged 15–24 (35.5% of all suicides) compared to males aged 40+ (34.3% of all suicides) in Total NZ. Young Pacific male-focused research is required, along with considerations given to gender, age and ethnic disparities, inequities and inequalities to support and strengthen existing programmes and to facilitate new approaches.

Although not a novel finding, where the prevalence of suicide is higher in the New Zealand-born group compared to the overseas-born (primarily Pacific Islands-born) group in Total Pacific (56.6% versus 43.4%), what often tends to be overlooked, is the significant gap between New Zealand-born and Total NZ (83.9% versus 43.4%).

Pacific suicide increases with level of deprivation, as is also commonly found in national[21] and global investigations.[22] However, what is distressing is that in comparison to Total NZ, significant disparity existed in the period of study, where Pacific suicides were around double those of all other New Zealanders in the worst deprivation quintile.

A focus on suicide methods is important to Pacific suicide prevention, particularly the preference for hanging. However, due to its accessibility, it would be extremely challenging to confine.[23] Evidence tells us that prevention strategies should seek ways of dispelling the myth that hanging is a "clean, painless and rapid method that is easily implemented".[24] What is required is safe messaging around: the process and consequences; the possibility of neurological damage if one were to survive; and the impact it may have on the person who discovers the deceased. Cautionary measures in the delivery of these messages are equally important, as this type of information dissemination may provide a 'how to' for some. Evidently, more research in the development, monitoring and evaluation of these types of interventions is essential.[24] Such investigations will help to ensure these messages that are safe, ethical and culturally appropriate for Pacific communities.

A Pacific-focused suicide postvention study by Tiatia-Seath (2016) found that of the 173 Pacific survey respondents bereaved by suicide, the majority reported that the first person to discover the body was a family member (65%). This implies that most suicides occurred in a familiar environment (in the home or in the home of a family member).[18] Accurate information about suicide methods and location is important for designing strategies and initiatives for suicide prevention.[25] However, this may be a challenge, as the New Zealand law changed in July 2016 in relation to reporting suicide or suspected suicide, and governs what can be reported, broadcast or posted on the internet without the coroner's permission.[26] Additionally, it is important to recognise that specific knowledge and training is needed in order to provide better support for the person(s) who found the deceased (Tiatia-Seath, 2016).

There are clear ethnic disparities over the 17-year period, where mental/behavioural disorders due to drugs/alcohol, are high for Pacific peoples in comparison to the Total New Zealand population, and that Samoans demonstrate the highest representation among Pacific groups. Suicides can be alleviated if the elimination of alcohol and other drug misuse is equally addressed. Mental health and addictions issues must remain a priority.

Limitations

Though a major strength of the study is complete coverage of the Pacific population in New Zealand over a prolonged period of 17 years, the study has its limitations. For those reporting multiple ethnic affiliations, according to Statistics New Zealand's protocol, information is prioritised, such that Māori ethnicity takes precedence over Pacific.[2]

The 'Pacific peoples' category continues to perpetuate the assumed homogeneity of this population group. While this study was able to provide Pacific ethnic breakdowns for Samoan, Cook Islands, and Tongan populations, it was unable to do so for 'Other' Pacific groups due to small numbers. The categorisation of 'Other' becomes problematic for Pacific ethnic-specific suicide prevention efforts for the remaining Pacific groups.

Gender identification is confined to the biological binary classification of male and female, therefore excluding those who do not identify with either (eg, transgender or intersex).

In order to evaluate distinct Pacific ethnic issues and plan for effective suicide countermeasures, there needs to be routinely collected data with distinct Pacific ethnic group classifications, particularly as those identifying with a Pacific ethnicity are projected to increase from 8% in 2013 to 11% in 2038.[28] Moreover, there will also be Pacific peoples who will undergo climate change-induced migration.[29] Consequently, there will be distinct needs for different sections of this diverse population. Thus policies, programmes and services need to be mindful of shifting trends over time in order to adequately and appropriately address the issue of Pacific suicides.

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Nil.

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