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PACIFIC ISLAND SUICIDE IN COMPARATIVE PERSPECTIVE

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Summary. All available data for thirteen Pacific Island nations are used in a comparative analysis of suicide levels and characteristics. Age, sex and method of suicide are examined in detail. Global comparison shows Pacific rates are amongst the highest reported. Female youth rates exceed male rates in Western Samoa and amongst Fiji Indians. Method of suicide (paraquat ingestion) is instrumental in determining high rates in Western Samoa, especially in females. The broad causal theme is societal transition. Commonality and diversity are discussed.

Introduction

The island populations of the Pacific continue to undergo epidemiological and mortality transitions (Taylor, Lewis & Levy, 1989) as a result of development initiatives and exogenous influences. One such transition is manifest in the suicide epidemics that have occurred in several of these populations. Suicide rates began to increase in some populations as early as the 1970s and others have experienced increases since that time. These increases have occurred at young ages, such that for some Pacific Island youth, suicide is a leading cause of death and rates are amongst the highest in the world.

To date, Pacific suicide has been studied with respect to individual populations with little attempt to compare experience either regionally or in relation to the rest of the world. This paper provides, for the first time, a comprehensive comparative assessment of suicide in the Pacific region, drawing together a large quantity of disparate information comprising new analysis of published and unpublished data, re-analysis of data from existing studies and published findings. Levels of suicide are compared regionally and globally. Age, sex and method of suicide are examined in detail. The paper provides a regional perspective, identifying both commonality and diversity.

The paper covers all Pacific Islands (except Hawaii) for which data are available but necessarily concentrates on those populations where data permit disaggregation. To a large extent, these are also the populations where suicide rates are highest: Western Samoa, the Indian population of Fiji, Guam and a group referred to collectively in this paper as ‘Micronesia’, comprising Marshall Islands, Palau and the Federated States of Micronesia (Chuuk, Kosrae, Pohnpei and Yap). Table 1 shows background characteristics of all populations.

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Materials

Data sources

The data used in this comparative study include primary and secondary sources. Primary sources comprise published and unpublished official records obtained from health, police and vital registration authorities. Secondary sources comprise data reported in existing studies which are re-analysed. Results reported in existing studies are included to facilitate regional comparison (these results are individually referenced in the text to clearly distinguish them from results reported for the first time in this paper).

Previously unanalysed official data include unpublished police records for Fiji 1989–90, unpublished and published health data for Western Samoa 1988–92 (Western Samoa, biennial) and published health or vital registration data for Fiji 1986 (Fiji, no date), Guam (annual) and French Polynesia (annual). In addition to these more detailed sources, official health or vital registration data were examined for all other Pacific Island countries. Data on numbers of suicides only were available for New Caledonia, Papua New Guinea, Vanuatu, Marshall Islands, Northern Mariana Islands and American Samoa (South Pacific Commission, unpublished; American Samoa, annual). Data were not available for Kiribati, Nauru, Solomon Islands, Tokelau and Wallis and Futuna. Very small populations ($<$20,000) with low levels of suicide were omitted due to fluctuation; this applied to Cook Islands, Niue and Tuvalu. Population data were obtained from relevant censuses.

Re-analysed data include police data for Fiji 1982–83 (Deoki, 1987), unpublished and published case study data for 'Micronesia' (Hezel, 1987a, 1989), health/coroner/police data for Western Samoa 1981–83 (Bowles, 1985) and police/hospital data for Tongatapu, the main island of Tonga (Finau & Lasalo, 1985).

Data on parasuicide (failed attempts) were available for relevant years for four populations: Fiji 1986 (Fiji, 1989), French Polynesia 1991–92 (French Polynesia, annual), Tonga (Finau & Lasalo, 1985) and Western Soma 1988–92 (Western Samoa, biennial; unpublished data).

Data quality

As elsewhere in the world (Sainsbury, 1983), Pacific data on suicide vary in completeness and quality (Taylor *et al.*, 1989; Booth, 1998a). Under-reporting typically arises from partial coverage of reporting systems, concealment of suicide, or uncertainty of intent, especially concerning drowning and apparent accidents. Whilst concealment and uncertainty cannot be quantified, the data for several populations are otherwise considered reliable. These include Fiji 1982–83 and 1986, 'Micronesia' 1960–87 (and constituent populations 1970–85 and 1988–92), Guam, French Polynesia, Tonga and Western Samoa 1981–83.

Other data are of lesser reliability, as indicated in Table 2. They are nevertheless included to give some indication of absolute minimum rates and of sex differentials. Incompete data for Western Samoa 1988–92 (covering only hospitalized cases, including dead on arrival) and Fiji 1989–90 (which omit some months) are used for internal comparison purposes only.

Data on parasuicide are hospital-based and thus incomplete. They are also of

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Table 1. Pacific Island populations: selected characteristics

Cultural region and country/territory	Estimated population mid-1995	Average annual growth rate 1980s (%)	Population density c. 1990 (per km^2)	Urban population c. 1990 (% of total)	Indigenous population c. 1990 (% of total)	Life expectancy c. 1990 (years)	GDP *per capita* c. 1990 (US$)	Political association with: (*former*) (ongoing)
Melanesia								
Fiji	774,800	2·0	41	39	50	63	1826	*UK*
New Caledonia	182,200	2·0	9	70	45	72	13,079	France
Papua New Guinea	4,216,100	2·3	9	15	>90	50	1042	*Australia*
Vanuatu	164,100	2·8	12	18	>90	63	1103	*UK/France*
Micronesia								
Fed. States of Micronesia	105,700	2·6	159	28	>90	65	1374	*USA*
Guam	149,300	2·3	253	38	43	74	—	USA
Marshall Islands	54,700	4·2	265	65	>90	61	—	*USA*
Northern Mariana Islands	56,700	9·5	104	53	48	68	—	USA
Palau	16,500	2·1	32	69	>90	67	—	*USA*
Polynesia								
American Samoa	54,800	3·7	245	48	>90	70	—	USA
French Polynesia	218,000	2·5	57	57	83	70	15,796	France
Tonga	98,200	0·5	130	31	>90	68	1038	Not applicable
Western Samoa	163,400	0·5	55	21	>90	63	749	*NZ*

Source: South Pacific Commission. *Population Statistics. Statistical Bulletin 42*. South Pacific Commission: Noumea, New Caledonia.
South Pacific Commission. *South Pacific Economies Statistical Summary 13*. South Pacific Commission: Noumea, New Caledonia.

reduced reliability due to concealment of intent. Fatality rates (proportions of attempts that are fatal) are thus overestimated, especially for less efficacious methods. In Western Samoa, however, post-1983 coverage of suicides is also hospital-based with the result that fatality rates may be underestimated for more efficacious methods.

Whilst the deficiencies of the data call for caution in making comparisons and examining trends, it is important to gain as good an understanding as possible of the extent and nature of suicide in the Pacific region. Though all levels indicated are undoubtedly minima, only the more reliable data are used in comparisons involving levels. The analysis presented here concentrates on measures based on internal comparison, such as age structure and method of suicide, which are both reliable and comparable between populations.

Results

Table 2 shows unstandardized and, where possible, age-standardized rates by sex. Standardization is according to the World Standard (World Health Organization, 1995) and all rates are per 100,000. For some populations, multiple entries are shown in Table 2 to facilitate comparison. It is seen that the highest rates are found in Fiji Indians, 'Micronesia' and its constituent populations, Western Samoa, American Samoa and Guam. In almost all populations, overall male rates exceed female rates, by a factor of up to 14. A similar pattern is seen at youth ages (15–24 years) with the exception of Fiji Indians and Western Samoa, where female rates exceed male rates (see Table 2).

Trends in reported suicides show increases for most populations, though improvements in reporting may have occurred. Figure 1 shows unstandardized rates for four high-suicide populations with data available (dotted lines indicate less-reliable data). Rates in 'Micronesia' appear to have stabilized during the 1980s at an average of about 30. The apparent recent decline is partly due to delays in covering suicide case studies in these widespread islands. In Western Samoa, rates reached a level of 31 by 1981, after which suicide prevention measures resulted in a decline to 14 in 1983 (Bowles, 1985). Thereafter, levels are widely believed to have increased, but this is not evident from the incomplete data available. An apparent increase during the 1970s is also indicated for Fiji Indians, though this is probably partly due to improved reporting. Increases in Guam have been more recent.

Age patterns of suicide are shown in Fig. 2, where significant differences by sex are seen. Female patterns peak at age 15–19 or 15–24, typically 5–10 years younger than the male peak. The median age at suicide, shown in Table 3, is correspondingly younger for females than for males in all populations. This younger female pattern results in the higher female rates for youth in Western Samoa and Fiji Indians because overall rates in these two populations are more balanced by gender. High rates at older ages also occur in Fiji Indians and Western Samoan males, but represent few suicide cases.

Changes in age patterns over time were examined for Fiji Indians and Western Samoa. Comparison of age patterns for the early and late 1980s is shown in Fig. 3. For Western Samoa, a clear shift towards younger suicide is seen in both males and females. This is also seen in the median ages in Table 3. A decreasing age at suicide has also

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Table 2. Total (unstandardized and standardized) and youth (15–24 years) suicide rates per 100,000, Pacific Islands

Cultural region and population	Year	Unstandardized			Standardized[a]			Youth rate		Statistical source	Rel.[b]
		M&F	M	F	M&F	M	F	M	F		
Melanesia											
Fiji	1982–83	17	19	14	19	22	15	40	38	Police records	1
Fiji Fijians	1982–83	3	4	3	3	3	3	17	8	Police records	1
Fiji Indians	1982–83	29	33	25	34	41	27	57	60	Police records	1
New Caledonia	1991–93	10	17	2	—	—	—	—	—	Health records	2
Papua New Guinea	1990	<1	<1	<1	—	—	—	—	—	Health records	3
Vanuatu	1990–92	3	3	2	—	—	—	—	—	Health records	3
Micronesia											
'Micronesia'	1960–87	18	33	3	20	36	3	91	8	Case studies	1
Fed. States of Micronesia	1988–92	31	—	—	—	—	—	—	—	Case studies	1
Pohnpei State	1988–92	20	—	—	—	—	—	—	—	Case studies	1
Kosrae State	1988–92	28	—	—	—	—	—	—	—	Case studies	1
Yap State	1988–92	48	—	—	—	—	—	—	—	Case studies	1
Chuuk State	1988–92	35	—	—	—	—	—	—	—	Case studies	1
Chuuk State	1970–85	30	55	4	30	57	4	182	12	Case studies	1
Guam	1988–92	16	27	4	15	24	4	49	10	Health records	
Marshall Islands	1992–93	16	29	2	—	—	—	—	—	Health records	3
Marshall Islands	1988–92	26	—	—	—	—	—	—	—	Case studies	1
Northern Mariana Islands	1990–92	13	22	3	—	—	—	—	—	Health records	3
Palau	1988–92	29	—	—	—	—	—	—	—	Case studies	1
Polynesia											
American Samoa	1990–91	18	34	0	—	—	—	—	—	Health records	2
French Polynesia	1988–92	9	12	5	9	12	5	23	11	Health records	1
Tonga[c]	1971–82	1	2	<1	—	—	—	—	—	Health/police	1
Western Somoa	1981	31	41	21	34	49	18	64	70	Health/police/coroner	1

[a]WHO world standard. [b]Reliability of data: 1 = most reliable. [c]Main island of Tongatapu, ages 15–44.

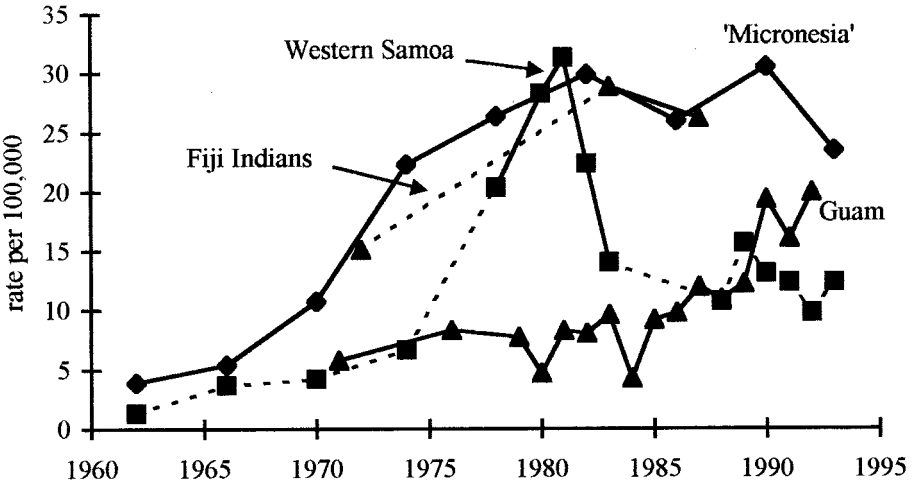


Fig. 1. Trends in suicide rates in selected Pacific populations, 1960–1995 (dotted lines indicate less-reliable data).

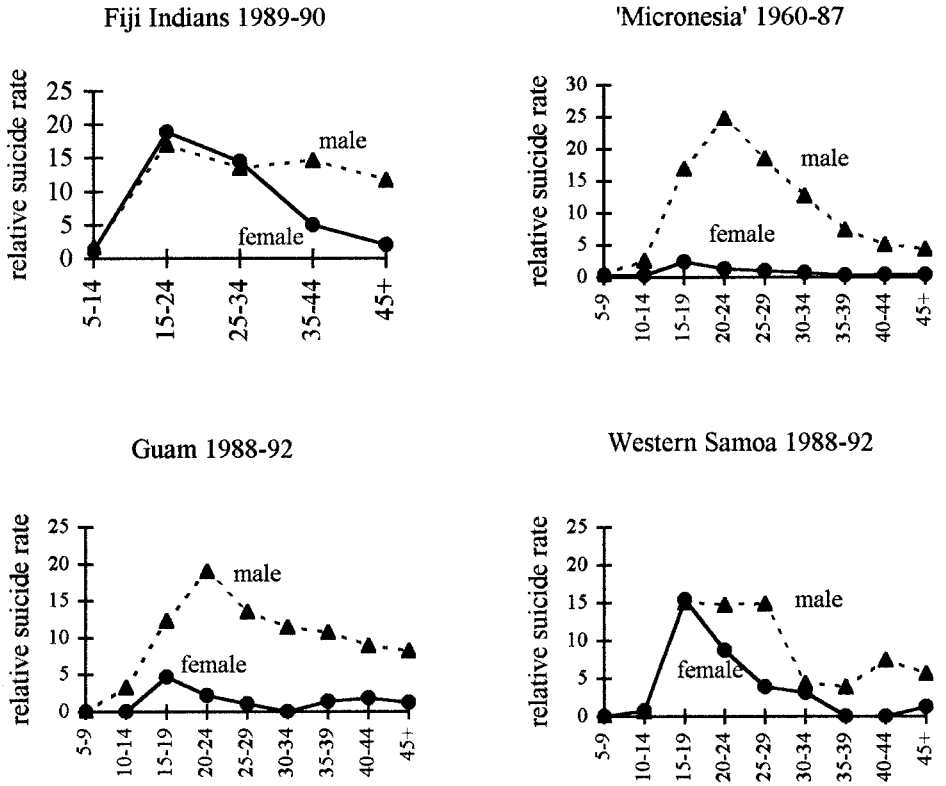


Fig. 2. Age patterns of suicide by sex, selected populations and relative rates (relative male and female rates sum to 100).

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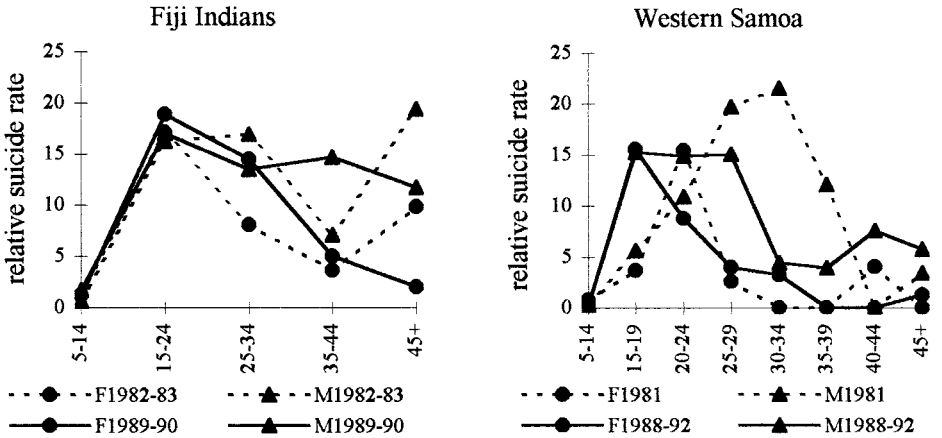


Fig. 3. Comparison over time of age patterns of suicide by sex, Fiji Indians and Western Samoa (relative male and female rates sum to 100).

Table 3. Median age at suicide by sex, method of suicide (% distribution) and fatality rates (% of attempts resulting in death) by sex, selected populations

		Median age (years)		Method of suicide (%)			Fatality rate (%)		
Population	Year	M	F	Hanging	Paraquat	Other	M&F	M	F
Fiji Indians	1989–90	27·3	24·3	73	24	3	37–39[a]	—	—
	1982–83	27·8	22·7	60	32	8	—	—	—
'Micronesia'	1960–87	22·0	18·5	>80	0	<20	<20	—	—
Chuuk, FSM	1970–85	21·6	19·6	—	—	—	—	—	—
Guam	1988–92	27·8	23·7	—	—	—	—	—	—
Guam	1979–81	26·5	—	—	—	—	—	—	—
French Polynesia	1991–92	27·9	25·0	79	<11	>10	15	29	7
Tonga[c]	1971–82	—	—	—	—	100	23	41	6
Western Samoa	1988–92	24·7	20·3	?	74	?	57[b]	59[b]	56[b]
Western Samoa	1981	27·2	21·7	4	82	14	52	52	52

[a]1986. [b]1988–91. [c]Tongatapu only.

been reported for 'Micronesia' (Rubinstein, 1995). Amongst Fiji Indians, however, the peak at young ages has broadened over time resulting in an increased median age for females, though not for males. An increased median age is also seen in Table 3 for males in Guam, but available evidence suggests that this is due to a shift from middle to older ages whilst the proportion at younger ages has not changed.

The relative frequency of different methods of suicide is shown in Table 3. Method of suicide is fairly consistent within populations, but differences exist between populations. Hanging is the most common method in 'Micronesia' (Hezel, 1989), Fiji Indians and French Polynesia. In contrast, in Western Samoa, ingestion of the highly

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toxic (Imo & Grigor, 1974; Taylor, Tama & Goldstein, 1985) herbicide, paraquat, predominates. Paraquat also accounts for about 25% of suicides amongst Fiji Indians, but it is not commonly used elsewhere (Taylor *et al.*, 1985). In Tonga in 1971–82, medicinal drug overdose accounted for more than 60% of cases. Sex differences in method of suicide were not statistically significant for Fiji Indians 1989–90, Western Samoa and French Polynesia (tests were not possible for Tonga and 'Micronesia'). No significant sex differential was found in Fiji Indians in 1982–83 (Deoki, 1987).

Method of suicide is determined by method of attempted suicide and fatality rates. Whilst hanging normally results in death, in 'Micronesia', where hanging usually takes the form of leaning into a noose from a standing or sitting position (Hezel, 1989), less than 20% of serious suicide attempts result in death (Rubinstein, 1992). Ingestion of toxic substances such as household bleach, kerosene or medicinal drugs is associated with low fatality rates; for example 18% in Tonga in 1971–82 and 7% in French Polynesia in 1991–92. Paraquat ingestion, however, is associated with high fatality rates; for example, 56% amongst Fiji Indians in 1976–82 (Ram & Rao, 1983) and 58% in Western Samoa in 1988–91. The use of hanging and paraquat ingestion by Fiji Indians results in an overall fatality rate of almost 40%. Since a high proportion of suicides in Western Samoa involve paraquat, over half of all reported suicide attempts result in death, a much higher proportion than in other populations (see Table 3).

Ingestion of a toxic substance as method of suicide is generally used both more frequently and less efficaciously by females than by males, with the result that female fatality rates for all attempts are relatively low (Farmer, 1982). This was found to be the case in French Polynesia: in 1991–92 toxic ingestion accounted for 27% of female attempts of which 3% were fatal, and for 16% of male attempts of which 17% were fatal, resulting in overall fatality rates of 7% and 29% respectively. Similarly in Tonga in 1971–82, 100% of female attempts involved toxic ingestion with 6% fatality compared with 59% of male attempts with 40% fatality, resulting in overall fatality rates of 6% for females and 41% for males. However, in Western Samoa in 1988–91, no significant sex differences were found in the use of toxic (paraquat) ingestion as method of attempted suicide (75% of female and 73% of male attempts involved paraquat) or in fatality rates for paraquat ingestion (64% for females and 54% for males), such that overall fatality rates were also roughly equal (56% for females and 59% for males). These rates have not changed appreciably since 1981 (see Table 3).

For Western Samoa, the absence of a sex differential in fatality rates means that the sex distribution of attempts determines relative suicide rates. In 1988–92, 36% of all attempts were female. This is lower than in Tonga in 1971–82 (53%) and French Polynesia in 1991–92 (62%). Thus, relative to males, females in Western Samoa are less likely to attempt suicide than other females. That this translates into a high relative female suicide rates is due to method of suicide, paraquat ingestion, and its toxicity. This is particularly true for youth, amongst whom 44% of attempts were female in 1988–92.

Other factors associated with suicide include ethnicity, culture, religion and geographic location. These are often interrelated. Ethnicity is important in Fiji, where rates are much higher amongst Indian than indigenous Fijians (see Table 2). Rates for Fiji Indians are highest in rural areas, especially in sugar-producing areas (Ree, 1971; Haynes, 1984, 1987; Deoki, 1987), but this is confounded with a differential by religion: rates amongst Hindus, who are predominantly rural, are much higher than amongst

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Muslims (Haynes, 1984; Deoki, 1987). In 1989–90, 91% of Fiji Indian suicides were Hindu, 7% Muslim and 2% Christian, compared with 79%, 16% and 5% respectively in the population (Fiji, 1988). In 'Micronesia', culture is associated with differences between constituent populations (Rubinstein, 1987) (see Table 2). In Papua New Guinea, rates also vary between cultures and are higher in urban areas where, contrary to experience in most populations, female rates equal or exceed male (Pataki-Schweizer, 1985; Poole, 1985; Johnson, 1993). In 'Micronesia' (Rubinstein, 1987) and Western Samoa (Oliver, 1985), rates are higher in peri-urban areas and geographical clustering occurs.

Discussion

Global comparisons

The levels of suicide found in the Pacific are as high as any found elsewhere. Comparison is made between standardized Pacific and current (1993 or most recent) world rates (World Health Organization, 1995). Though time differences exist, this comparison is considered valid and useful since current world levels provide a recognized benchmark and since the Pacific rates are the most recent reliable rates available and there is no evidence to suggest declines. For 'Micronesia', extension back to 1960, when rates were low, gives a conservative comparison. Chuuk State 1970–85 has thus been substituted for 'Micronesia' to provide a more recent and more representative comparison.

In overall terms, the highest Pacific rates (34 in both Fiji Indians 1982–83 and Western Samoa 1981) are exceeded by current rates in only two populations: 36 in Lithuania and 35 in Latvia. Figures 4 and 5 compare global rates by sex. Whilst Pacific male rates are high by world standards, female rates for Western Samoa and Fiji Indians are particularly striking. For youth suicide, seen in Figs 6 and 7, global comparisons reveal even greater extremes. For males, all four Pacific populations exceed rates found elsewhere, with the rate for Chuuk State being 4·0 times the highest non-Pacific rate. Female rates for Fiji Indians and Western Samoa exceed the highest non-Pacific rate (China (rural), itself a clear outlier) by factors of 1·6 and 1·9 respectively, and by factors of 3·5 and 4·1 respectively in comparison with Mauritius, the second highest non-Pacific rate. Female youth rates in Chuuk State and Guam are also amongst the highest reported.

Higher male than female overall rates, found in all Pacific populations, is in keeping with world norms. However, ratios of male to female standardized rates in Chuuk State (13·3:1) and Guam (6·9) exceed the range of experience elsewhere (0·9 in China (rural and urban) to 8·9 in Puerto Rico), whilst ratios for Western Samoa (2·7) and Fiji Indians (1·5) fall in the lower quintile of this range. For youth male to female ratios, Chuuk State (14·8) exceeds experience elsewhere (10·8 in Ireland), whilst Western Samoa (0·9) and Fiji Indians (1·0) rank amongst only four other populations where female rates exceed male (Mauritius and Tajikistan 0·8 and China (rural and urban) 0·5).

The extremity of Pacific suicide rates has been recognized to a much greater extent in males than in females. In Western Samoa and 'Micronesia', for example, suicide is widely regarded as a male problem (Macpherson & Macpherson, 1987; Hezel, 1987a, 1987b, 1989; Rubinstein, 1987, 1992, 1995). This lack of recognition of female suicide

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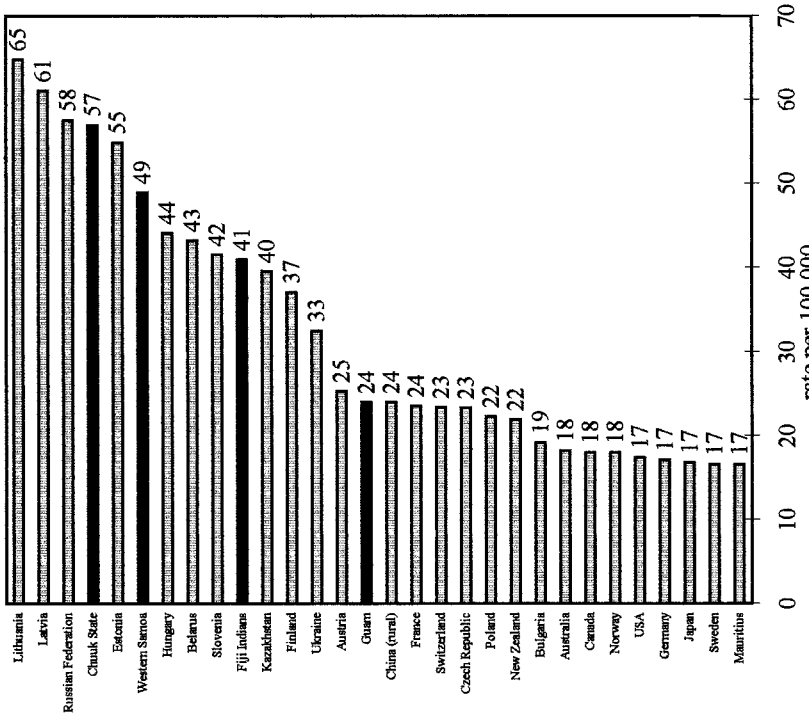


Fig. 4. Global comparison of male standardized suicide rates per 100,000, highest reported rates.

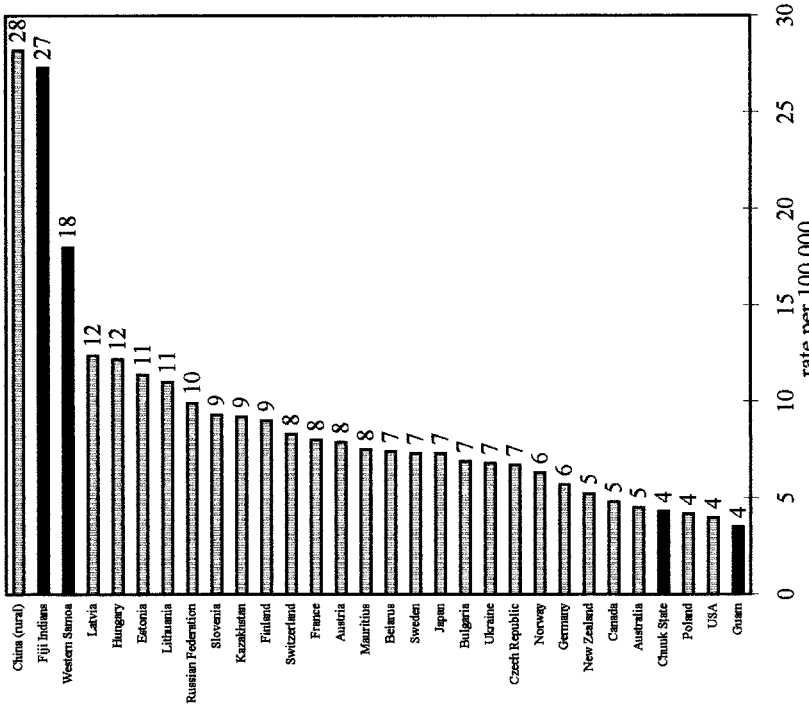


Fig. 5. Global comparison of female standardized suicide rates per 100,000, highest reported rates.

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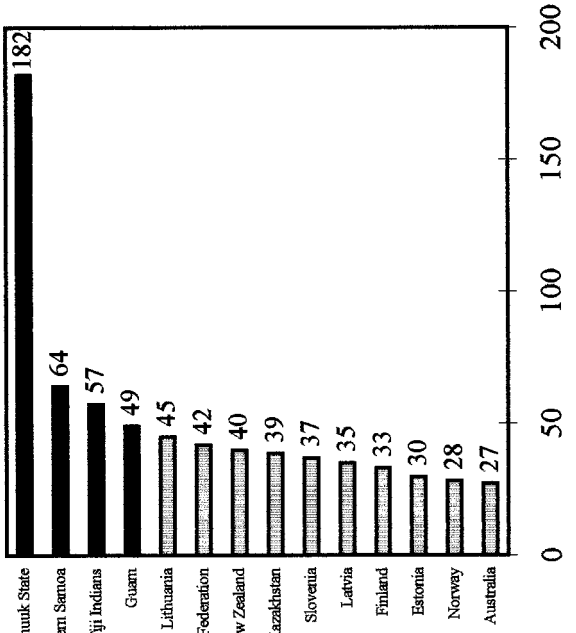


Fig. 6. Global comparison of male youth suicide rates per 100,000, age 15–24, highest reported rates.

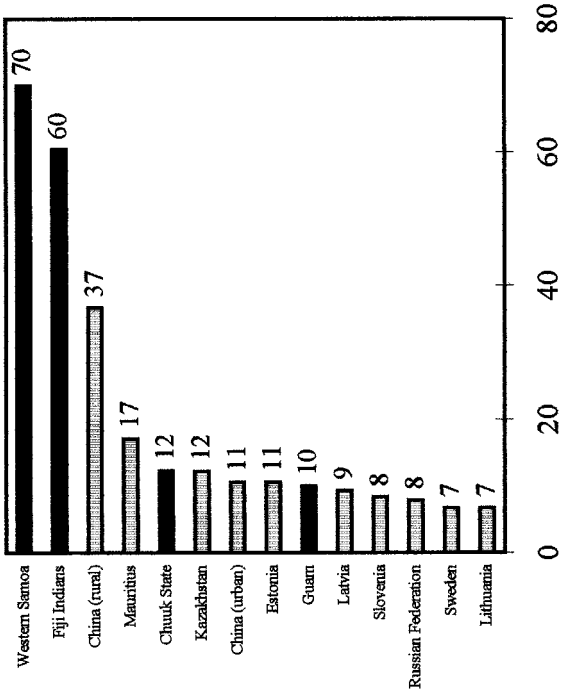


Fig. 7. Global comparison of female youth suicide rates per 100,000, age 15–24, highest reported rates.

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is partly due to invalid comparisons including comparison of females with males rather than with other females, insufficient disaggregation and/or use of absolutes rather than rates (Bowles, 1985; Rubinstein, 1987; Hezel, 1989). The present analysis shows that female suicide is also a serious concern: female youth suicide rates for Western Samoa and Fiji Indians are as high as those for males, and global comparison shows that they are equally extreme as male rates.

Commonality and diversity

Whilst there are clearly many commonalities between populations with respect to the characteristics of suicide, there is as much diversity. For example, male youth rates exceed female but not in Western Samoa and Fiji Indians; hanging is the most common method but not in Western Samoa and Tonga; the median age at suicide is decreasing but not in Fiji Indian females and Guam males.

One characteristic that is common to all populations is the sex differential in median age at suicide. This may in part be related to younger female than male age at marriage, found in all populations, since marriage and/or parenthood have been found to 'protect' against suicide (Durkheim, 1897/1952; Halbwachs, 1930/1978; Veevers, 1973; Harrison & Choi, 1985). The absence of rates by marital status or parenthood preclude analysis of these factors. However, it is noted that most male suicides in 'Micronesia' involve the never-married (Rubinstein, 1987), suggesting a possible protective effect.

Amongst Fiji Indian females, marriage and parenthood appear to operate somewhat differently to the norm. Previous studies indicate that marriage (which is usually arranged) is not protective against suicide because of disharmony with husband and/or in-laws (Ree, 1971; Karim & Price, 1975; Haynes, 1984; Deoki, 1987). In addition, childlessness has been identified as a specific contributing factor (Ree, 1971; Haynes, 1984). Given these factors, which are often related, the broadening peak (seen in Fig. 3) may be a result of recent increases in age at marriage amongst Fiji Indian females (Booth, 1994). Later marriage also increases exposure to the risk of suicide in young Fiji Indian females through contributing factors such as pre-marital relations and pregnancies (Haynes, 1984; Deoki, 1987). An additional possible factor contributing to the high relative rate at 15–24 is young age at marriage compared with the norm (Gibbs & Martin, 1964; Veevers, 1973; Hassan, 1983).

Further commonality is found in the broad underlying causal theme of Pacific suicide: societal transition from traditional to modern with attendant intergenerational conflict and pressures on the younger generation (Howard, 1986; Deoki, 1987; Hezel, 1987b, 1989; Macpherson & Macpherson, 1987; Rubinstein, 1987). This is reflected in the increasing suicide trend and the concentration amongst youth. The decreasing median age at suicide in Western Samoa and 'Micronesia' and the younger age pattern evident in Western Samoa accord with the tendency for contemporary youth to 'rebel' at younger ages than in the past, though it has not been possible to show increased *rates* at young ages due to data limitations.

Within this broad causal theme, there is considerable diversity in the ways in which societal transition leads to increased suicide rates. Any attempt to explain this diversity must take detailed account of the influence of sociocultural factors, both of traditional society and modern structures and influences (Kunitz, 1994). In 'Micronesia', high male

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youth rates are believed to be due to the effect of developmental influences on socialization processes and the traditional role of young males (Hezel, 1989; Rubinstein, 1995). Amongst Fiji Indians, the low status of women has been suggested as an underlying factor in high relative female youth suicide (Ree, 1971; Haynes, 1984; Deoki, 1987). This is supported by studies of other Indian communities (Freed & Freed, 1989; Mehta, 1990) and accords with high female suicide elsewhere (Hein, 1986; Wakabayashi, 1995). Low status has also been cited as the basis of female suicide in Papua New Guinea (Poole, 1985; Counts, 1990) and Solomon Islands (Akin, 1985; Gegeo & Watson-Gegeo, 1985). The status of women, however, would not appear from available indicators (Booth & Petaia, 1993) to be a major factor in Western Samoa, though the sociocultural causes of female suicide have not been considered. Rather, this analysis shows that method of suicide, ingestion of paraquat, contributes to high female rates both *per se* and relative to male.

Conclusions

The levels of suicide indicated in some Pacific populations are exceedingly high by global standards. This is particularly true of youth suicide and is equally as true of females in Western Samoa and Fiji Indians as it is of males in 'Micronesia', Western Samoa, Fiji Indians and Guam. The fact that reported rates may underestimate true levels only adds to the gravity of the situation. These high levels of suicide point to the need for greater attention to be paid to the issue of suicide in research and policy initiatives than is currently the case in the populations in question (Booth, 1998b). In particular, these findings indicate a need for greater attention to female suicide than has hitherto been the case. Amongst Fiji Indians there is a need for policy to recognize the links between suicide and the status of women, whilst in Western Samoa the significance of the role of paraquat ingestion merits urgent attention.

Not only is there a need for policy to take greater heed of the findings of research, but further research is necessary if the underlying causal processes, of societal transition and the mechanisms through which this leads to suicide, are to be better understood. Such research might usefully seek to explain the commonality and diversity of the Pacific experience of suicide in relation to the nature of societal transition in different populations and its effect on different groups, such as youth and females, within those populations. Improvements in data quality and availability are required to facilitate such research.

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