

ASIA PACIFIC COLUMN

Alcohol, cannabis and amphetamine-type stimulants use among young Pacific Islanders

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Abstract

Introduction and Aims. There are many factors that impact substance use in young people in the Pacific Island Countries and Territories (PICTs). However, the extent and nature of substance use by young people in the PICTs is not clear because of a lack of data on this group. **Design and Methods.** A desk-based review (including both white and grey literature) was conducted to explore substance use among young people in the Western Pacific region. This paper presents findings from the PICTs. **Results.** Prevalence of alcohol, cannabis and amphetamine-type stimulants use by young people is reported from various sources—primarily based on data derived from the Youth Risk Behaviour and the Second Generation Behaviour Surveillance Surveys. **Discussion and Conclusion.** There appear to be evidence of risky alcohol consumption and higher levels of cannabis and amphetamine-type stimulants use in some PICTs compared with Australia and New Zealand. However, data are generally unavailable to establish any trends. Regular, reliable and routine monitoring of patterns and trends in substance use among young people in the PICTs can assist in identifying concerns and developing evidence-informed interventions to prevent, contain and treat current and any emerging issues. [Howard J, Ali H, Robins L. Alcohol, cannabis and amphetamine-type stimulants use among young Pacific Islanders. *Drug Alcohol Rev* 2011;30;104–110]

Key words: alcohol, cannabis, amphetamine, adolescent, Pacific Islands.

Introduction

Adolescence is a time of important neurobiological and cognitive development, experimentation, exploration, curiosity and identity search. It is also a time of heightened vulnerability for risky behaviour, including substance use [1]. As adolescents and young people are diverse, their exposure to risky behaviour, such as use of drugs and alcohol, varies widely as do their responses. Likewise, while generally healthy, there are health discrepancies among adolescents globally. For example, 97% of young people aged 10–24 who died in 2004 were from low- and middle-income countries and more than a third of the deaths were in Southeast Asia [2].

Alcohol use was associated with a number of these deaths, particularly those from traffic accidents and violence.

The broader Asia Pacific region has seen increase in the use of illicit drugs [3,4]. This increase is associated with factors like rapid economic growth, inequitable distribution of benefits, political instability, population mobility to obtain employment, lack of law enforcement and poverty [5]. In addition, changing international drug trafficking routes are also of concern, as they bring ‘new’ drugs into an area for transshipment. Some of the drugs being trafficked remain in transshipment countries, and consequently their use spreads. The Pacific Island Countries and Territories (PICTs)

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Received 14 August 2010; accepted for publication 13 October 2010.

are not immune to these influences and trends. In addition, production of drugs exists within the PICTs; for example, cannabis [5].

The PICTs, which form part of the World Health Organisation's (WHO) Western Pacific region (WPR), are made up of people of Melanesian, Micronesian and Polynesian background. In addition, countries, such as Fiji and the Solomon Islands, include a significant number of people of Chinese and Indian origin. Many PICTs have high rates of unemployment, significant rural urban drift; and in many PICTs, youth under 20 years of age comprise over 50% of the population. Australia, New Zealand and the USA provide aid to promote development in the region, with the USA maintaining an overarching security role. The influence of the USA is evident in its territories (Guam, Northern Mariana Islands and American Samoa) and the Marshall Islands, Federal States of Micronesia and Palau. Australia has had greater association with the Solomon Islands and Vanuatu; New Zealand with the Cook Islands, Western Samoa, Tokelau and Niue; and France with French Polynesia and New Caledonia [5,6].

What is not clear is the extent and nature of substance use among young people and any emerging trends in the PICTs, as there has not been a tradition of routine data collection on substance use among this group. The consequences of not being able to identify prevalence and trends in the PICTs can include missed opportunities to prevent preventable epidemics of HIV, other blood borne infections (BBIs) and sexually transmissible infections (STIs) associated with substance use-related sexual activity. Morbidity and mortality associated with substance use-related risk behaviours can also include dangerous driving and riding, violence, decreased participation in education, training and employment, suicidal ideation and attempts, other mental health disorders, family disruption, unplanned pregnancies and involvement in crime [2].

Methods

A desk-based review was conducted by the Australian National Drug and Alcohol Research Centre to explore the use of alcohol, cannabis and amphetamine-type stimulants (ATS) among adolescents and young people and preventive and treatment interventions, in WHO's WPR. Data were collected from both white (peer-reviewed) and grey (non-peer-reviewed: including published and unpublished reports) literature through the following sources:

1. Medline database was searched for peer-reviewed articles regarding drug use in the WPR.

2. Online Internet searches of the regional drug specific websites and Google in general were conducted to gather non-peer-reviewed reports and documents.
3. Key experts in the WPR were contacted via email and telephone. Initially, 106 experts were contacted in the region, which included experts identified by the WHO team. The email request was further sent to another 35 experts identified via the initial email recipients. However, the feedback received from key experts was very limited and gathered much less information than originally anticipated by the research team.

A total of around 300 documents were collected from these sources and were reviewed during the data review process, this included 15 documents/reports in hard copy provided by the experts in the region.

Results

The review gathered data on the prevalence of drug use and the availability of prevention and care services for drug using young people in the WPR. However, this paper only reports on alcohol, cannabis and ATS use in the PICTs, as use of alcohol remains the key concern in the region, cannabis is the most widely used illicit drug and is also produced in the region, and ATS use among young people has been identified [5]. While the prime focus of the review was on adolescents (those aged 12–18), data were also gathered on young people up to age 25 [7–20].

Surveys in the PICTs have primarily utilised two standardised instruments: the Youth Risk Behaviour Survey (YRBS) and the Second Generation Behaviour Surveillance Survey (BSS). Year of data collection varies and no relevant data were available for Fiji and French Polynesia. Where data are reported as a 'total for young men and women', there were no separate figures provided for young men and women.

Caveat

Available data were variable in relation to reliability and generalisability. In addition, data have been collected and reported by various government ministries and departments. Questions regarding the same substance, means of use and associated behaviours have been asked in different ways, even within the same country and the same groups. Also, translation of questions into different languages may have posed difficulties. Data also vary as to year of collection. In addition, comparisons of PICT data with those from Australia and New Zealand require caution. They are provided for illustrative purposes only. Despite these cautions, the data

Table 1. Ever, recent and heavy alcohol use among young people in the PICTs

Country	Sample (age where available)	Year	Ever use (%)		Recent use (%)		Heavy use ^a (%)	
			Men	Women	Men	Women	Men	Women
Australia	Household survey 14–19 (<i>n</i> = 1549)	2007	74.1	73.9	70.8	71.3	37.4	41.2
American Samoa	YRBS school students (<i>n</i> = 3625)	2007	49.7	43.9	31.1	28.7	20.3	16.3
Cook Islands	Second Generation BSS 15–24 (<i>n</i> = 258)	2006	69.3 (men and women)		57 (men and women)		80.4 (men and women)	
Federal States of Micronesia	Second Generation BSS in Pohnpei 15–24 (<i>n</i> = 280)	2007	80.3	55.7	69.0	43.0	51.8	41.1
Guam	YRBS school students (<i>n</i> = 1610)	2007	69.1	68.0	36.2	33.4	21.6	16.3
Marshall Islands	YRBS school students (<i>n</i> = 1522)	2007	66.4	44.0	51.0	33.4	30.8	22.6
New Zealand	Secondary school students (<i>n</i> = 9107)	2007	72.3	70.9	60.8	60.3	—	—
Northern Mariana Is	YRBS school students (<i>n</i> = 2292)	2007	69.1	70.5	42.6	39.5	29.2	21.3
Palau	YRBS school students (<i>n</i> = 732)	2007	66.8	61.8	42.4	29.0	31.0	15.6
Solomon Islands	Second Generation BSS 15–24 (<i>n</i> = 592)	2008	76.4	46.5	55.5	29.5	75.3	55.4
Tokelau	Second Generation BSS 15–24 (<i>n</i> = 207)	2007	80.0	57.0	—	—	91.0	53.0
Tonga	Second Generation BSS 15–24 (<i>n</i> = 387)	2008	69.0	47.0	38.0	23.0	69.7 (men and women)	
Vanuatu	Second Generation BSS 15–24 (<i>n</i> = 301)	2008	83.8	59.9	38.9	19.0	90.0	94.9

^aMore than five standard drinks per drinking session. BSS, Behaviour Surveillance Survey; PICTs, Pacific Island Countries and Territories; YRBS, Youth Risk Behaviour Survey.

indicate some potentially concerning levels of use, and raise questions regarding the need for regular monitoring and preventive and treatment responses.

Alcohol use

Table 1 shows available data for ‘ever use’, ‘recent use’ (defined as use in the last one month) and ‘heavy use’ (defined as drinking five or more standard drinks in a row) of alcohol. There is not much gender difference in ever use or recent use in Australia and New Zealand. For all the remaining countries where gender disaggregated data are available, alcohol use was more common in young men than in young women; except ever use of alcohol in Mariana Islands and heavy use of alcohol in Vanuatu, where alcohol use was more common in young women. Recent use of alcohol is higher in Australia and New Zealand compared with the other countries. The rates for recent use are lower than ever use in all countries except Australia, where the rate is almost the same. There appears to be a high level of heavy drinking among young men in Solomon Islands, Tokelau, Tonga and Vanuatu and among young women in Tonga and Vanuatu.

Selected countries reported on alcohol use on school premises and alcohol use before the last sexual intercourse. Table 2 displays available data for both. It can be seen that rates of alcohol use in schools and before sexual intercourse are highest for the Marshall Islands, and lowest for Guam. It is important to note that female students also report alcohol use on school premises, but alcohol use before last sexual intercourse was much more in young men for all countries where gender disaggregated data are available.

Cannabis use

Table 3 displays available data for ‘ever use’ and ‘recent use’ of cannabis. The rates vary considerably, but tend to be far higher than those for Australia for both ever and recent use. In some countries, namely: Northern Mariana Islands, Palau and Vanuatu, nearly two-thirds of young men surveyed reported having ever tried cannabis; and over 50% of young women in Palau and the Solomon Islands reported the same. In addition, over 40% of young men in Palau, Solomon Islands and Vanuatu and over 40% of young women in the Solomon Islands reported ‘recent use’ of cannabis.

Table 2. Alcohol use on school premises and before sexual intercourse in selected countries

Country	Sample	Year	Use on school premises (%)		Use before last sexual intercourse (%)	
			Men	Women	Men	Women
American Samoa	YRBS school students (<i>n</i> = 3625)	2007	10.3	8.5	38.2	27.3
Guam	YRBS school students (<i>n</i> = 1610)	2007	5.8	4.6	24.2	11.2
Marshall Islands	YRBS school students (<i>n</i> = 1522)	2007	18.9	11.7	40.5	26.2
Northern Mariana Is	YRBS school students (<i>n</i> = 2292)	2007	7.3	5.5	37.5	19.9
Palau	YRBS school students (<i>n</i> = 732)	2007	7.9	5.8	36.3 (men and women)	

YRBS, Youth Risk Behaviour Survey.

Table 3. Ever and recent cannabis use among young people in the PICTs

Country	Sample (age where available)	Year	Ever use (%)		Recent use (%)	
			Men	Women	Men	Women
Australia	Household survey 14–19 (<i>n</i> = 1549)	2007	18.0	22.1	13.1	12.7
American Samoa	YRBS school students (<i>n</i> = 3625)	2007	25.3	10.6	15.2	5.6
Cook Islands	Second Generation BSS 15–24 (<i>n</i> = 258)	2006	46.8 (men and women)		6.5 (men and women)	
Federal States of Micronesia	Second Generation BSS in Pohnpei 15–24 (<i>n</i> = 280)	2007	14.5 (men and women)		6.8 (men and women)	
Guam	YRBS school students (<i>n</i> = 1610)	2007	49.9	40.6	25.6	20.5
Marshall Islands	YRBS school students (<i>n</i> = 1522)	2007	22.4	5.5	14.1	3.2
New Caledonia	Second Generation BSS 15–24 (<i>n</i> = 292)	2005	54.8	42.5	—	—
New Zealand	Secondary school students (<i>n</i> = 9107)	2007	27.2	26.8	16.5	14.8
Northern Mariana Is	YRBS school students (<i>n</i> = 2292)	2007	61.0	48.7	37.5	26.3
Palau	YRBS school students (<i>n</i> = 732)	2007	64.3	55.6	43.7	33.0
Solomon Islands	Second Generation BSS 15–24 (<i>n</i> = 592)	2008	53.7 (men and women)		44.7 (men and women)	
Tokelau	Second Generation BSS 15–24 (<i>n</i> = 207)	2007	37.0	13.0	—	—
Tonga	Second Generation BSS 15–24 (<i>n</i> = 387)	2008	24.0 (men and women)		16.5 (men and women)	
Vanuatu	Second Generation BSS 15–24 (<i>n</i> = 301)	2008	67.1	28.8	43.2	17.1
Wallis and Fortuna	Second Generation BSS 15–24 (<i>n</i> = 199)	2006	15.3	12.6	—	—

BSS, Behaviour Surveillance Survey; PICTs, Pacific Island Countries and Territories; YRBS, Youth Risk Behaviour Survey.

Selected countries also reported on the use of cannabis before 13 years of age and also the use of cannabis on school premises. Table 4 shows that rate of cannabis use tends to be higher for young men in Guam, Northern Mariana Islands and Palau. It also shows that large numbers of students who have used cannabis have used it on school premises; rates are between 28–42% for young men and 19–30% for young women in all countries listed.

ATS use

Table 5 shows data for ‘ever use’ and ‘recent use’ of ATS in the region. It can be seen that rates vary considerably, but most tend to be higher than those for Australia; with the highest in the Marshall Islands and

Vanuatu. Young men have used ATS more than young women in most countries except Australia, Solomon Islands and Tokelau where rate of ever use of ATS is more in young women. Data from very few countries are available for recent use of ATS, which was higher in Vanuatu compared with other countries where data were available.

Responses

Little information was identified or provided by governments or non-government organisations to develop a clear understanding of responses to substance use among young people in the PICTs. School-based prevention activities appear to be developing, but are not necessarily evidence-informed or Pacific-specific;

Table 4. Cannabis use before 13 years of age and on school premises in selected countries

Country	Sample	Year	Use before 13 years age (%)		Use on school premises (%)	
			Men	Women	Men	Women
American Samoa	YRBS school students (<i>n</i> = 3625)	2007	11.0	3.1	30.2	23.6
Guam	YRBS school students (<i>n</i> = 1610)	2007	20.2	9.9	42.0	30.7
Marshall Islands	YRBS school students (<i>n</i> = 1522)	2007	6.0	3.0	28.5	19.7
Northern Mariana Is	YRBS school students (<i>n</i> = 2292)	2007	27.5	12.3	42.3	29.9
Palau	YRBS school students (<i>n</i> = 732)	2007	29.0	9.4	28.3	29.0

YRBS, Youth Risk Behaviour Survey.

Table 5. Ever and recent ATS use among young people in the PICTs

Country	Sample (age where available)	Year	Ever use (%)		Recent use (%)	
			Men	Women	Men	Women
Australia	Household survey 14–19 (<i>n</i> = 1549)	2007	1.4	2.9	1.0	2.2
American Samoa	YRBS school students (<i>n</i> = 3625)	2007	8.6	2.7	—	—
Cook Islands	Second Generation BSS 15–24 (<i>n</i> = 258)	2006	6.7 (men and women)		0.4 (men and women)	
Guam	YRBS school students (<i>n</i> = 1610)	2007	7.5	3.7	—	—
Marshall Islands	YRBS school students (<i>n</i> = 1522)	2007	15.4	10.5	—	—
New Caledonia	Second Generation BSS 15–24 (<i>n</i> = 292)	2005	2.6	1.6	—	—
New Zealand	Secondary school students (<i>n</i> = 9107)	2007	0.5–1.1 (men and women)		—	—
Northern Mariana Is	YRBS school students (<i>n</i> = 2292)	2007	6.2	3.2	—	—
Palau	YRBS school students (<i>n</i> = 732)	2007	9.9	4.3	—	—
Solomon Islands	Second Generation BSS 15–24 (<i>n</i> = 592)	2008	0.0	1.1	0.0	0.7
Tokelau	Second Generation BSS 15–24 (<i>n</i> = 207)	2007	0.0	1.0	—	—
Tonga	Second Generation BSS 15–24 (<i>n</i> = 387)	2008	2.6 (men and women)		1.6 (men and women)	
Vanuatu	Second Generation BSS 15–24 (<i>n</i> = 301)	2008	12.3	3.4	11.6	1.4

ATS, amphetamine-type stimulants; BSS, Behaviour Surveillance Survey; PICTs, Pacific Island Countries and Territories; YRBS, Youth Risk Behaviour Survey.

and treatment, where it exists, appears to be associated with general and mental health services. Policies, where they exist, have tended to be reactive and lack an evidence base [5].

Discussion

While the findings of this review indicate higher levels of substance use by young Pacific Islanders, compared with those in Australia and New Zealand, data do not exist to ascertain any trends over time. Given the reported levels of use, there is a need for verification of current findings and implementation of routine data collection on patterns and consequences of substance use by young people in the PICTs. There is also a need to gather data on any impacts of substance use, such as

substance use-related hospital admissions, crime, BBIs and STIs. This is necessary to inform policy, prevention and treatment.

It is recognised that this can be a costly task, but routine surveillance of youth risk behaviours, especially of more vulnerable young people, is essential if effective preventive and treatment interventions are to be developed to address substance use-related behaviours (such as accidents, unplanned pregnancies and other risk-taking behaviours like violence, mental health problems, crime and lack of participation in education, training and employment) and the spread of BBIs and STIs (via unprotected sexual activity while intoxicated). Standardised surveys (e.g. the YRBS and Second Generation BSS) have been implemented in some PICTs; but as Buchanan-Aruwafu noted, mixed

quantitative and qualitative research methodologies are required as convenience samples have limited value [21]. There could be benefit in attempting to standardise the surveys used, where possible, while allowing for country or sub-region/population-specific questions. This review shows that YRBS and Second Generation BSS are yielding results that cannot be compared easily, and raise questions of validity. The WHO Global School-based Student Health Survey may have some advantages in regards to collection of data on substance use. It can be used or incorporated into a pilot study in some countries of special concern within the region to identify 'best questions—best survey'.

If there was routine use of standardised instruments, trend data on substance use and related difficulties could more easily emerge and inform responses. The Illicit Drug Reporting System and the Ecstasy and Related Drugs Reporting System [22] are well established in Australia and provide examples of monitoring and 'early warning' systems to detect drug trends and movement in drug markets, from the region. These could provide models to adapt for the PICTs. Recent development of the Pacific Drug and Alcohol Network provides an important focal point and support to progress surveillance and develop Pacific-appropriate responses. The Pacific Drug and Alcohol Network aims to provide a sound evidence base and research capacity and work alongside government agencies, private and public sector, faith- and community-based organisations, to enable people to strengthen their communities and respond to the challenges resulting from drug and alcohol use [23].

This review also revealed a lack of relevant facilitative and supportive policies regarding youth substance use across the PICTs, and also a lack of evidence-informed prevention and treatment for those with substance use-related difficulties. There is a need for policy guidance and to explore a diversity of evidence-informed interventions within the region.

Prevention activities are developing in some PICTs, for example, the development of an alcohol policy for Vanuatu. A draft consultation paper includes some mention of young people, and highlights the need to build a capable workforce to identify issues and trends, develop prevention campaigns, and to screen and provide opportunistic brief and other interventions for those with alcohol use-related difficulties in primary health-care settings [24]. In addition, the Centre for Social and Health Outcomes Research and Evaluation is assisting in policy development across the PICTs [25]. However, these developments need to ensure that the specific needs of young people are addressed.

While targeted interventions may require better data than are available at this stage, interventions that could be most relevant include evidence-informed school-

based (with community linkage), and targeted interventions at workplaces and for specific subpopulations. Special focus is required for most-at-risk young people, such as: young people who sell sex, young men who have sex with men, those without ready access to affordable health care and those who do not participate in education. These young people tend to bear the greater burden of morbidity associated with substance use, in addition to being more likely to be involved with juvenile and criminal justice systems and public security. However, caution must be exercised so that strategies developed in other settings are not imported and implemented without piloting and adaptation as appropriate.

There is also a need to explore diverse sites for prevention, screening and treatment activities—such as schools, dormitories and other out-of-home accommodation, workplaces that employ young workers and other sites, such as seafarer/marine colleges. Given that many most-at-risk young people are often not engaged in formal or informal education, community-focused interventions can be more useful for such groups.

As a skilled workforce is necessary to develop and deliver evidence-informed interventions, especially for those most-at-risk, specific attention must be given to capacity building, as stressed in the draft alcohol policy for Vanuatu [24]. It is likely that stand-alone or adolescent/youth specialist services may be too costly. Thus, there is a need to build the capacity of generalist primary health-care workers to screen for and provide interventions that are culturally appropriate and address adolescent substance use-related difficulties. In relation to identifying and treating young people with substance use-related difficulties, training for primary health-care workers in use of the HEADSS approach [26,27] and use of the WHO/CAH Orientation Programme [28] could be beneficial. The same approach can be applied for capacity building for frontline, generalist youth sector workers and others who come into contact with out of school and more marginalised groups, such as faith-based communities.

Conclusion

It is encouraging to see the recent WHO attempt to map substance use among young people in the PICTs. However, the data are difficult to interpret because of the non-existence of previous data to enable identification of trends and the validity of what are now available.

There are often few windows of opportunity to avert public health and social consequences of changes in human behaviour. Reliable and routine monitoring of patterns and trends in the substance use of young people in the PICTs can assist in identifying concerns and in shaping policy responses. An up-skilled

workforce can then develop and utilise evidence-informed interventions in their attempts to prevent, contain and treat current and any emerging issues.

Acknowledgements

The authors are especially grateful to Ms Nina Rehn-Mendoza and Dr Pantanjali Dev Nayar from WHO for their support at all steps of the review, and valuable critique. The authors would also like to thank the Australian National Council on Drugs (ANCD) and the Burnet Institute for providing relevant data. Thanks also to the following for providing data: Andrea Fisher, Avanoa T Moeli Homasi, Fran Hezel, Gillian Duffy, Graham Roberts, Elenoa Seru Puamau, Jerry Cole, Lee Pearce, Lucina Schmich, Madonna Devaney, Robert Power, Sara McFall, Sylvia Wally, Vicky Wari.

Funding

The review, on which this article is based, was funded by the Western Pacific Regional Office of the World Health Organisation.

References

- [1] Steinberg L. Risk taking in adolescence. *Curr Dir Psychol Sci* 2007;16:55.
- [2] Patton G, Coffey C, Sawyer S, *et al.* Global patterns of mortality in young people: a systematic analysis of population health data. *Lancet* 2009;374:881–92.
- [3] Kulsudjarit K. Drug problem in southeast and southwest Asia. *Ann NY Acad Sci* 2004;1025:446–57.
- [4] McKetin R, Kozel N, Douglas J, *et al.* The rise of methamphetamine in Southeast and East Asia. *Drug Alcohol Rev* 2008;27:220–8.
- [5] Burnet Institute. Situational analysis of drug & alcohol issues & responses in the Pacific. Research Paper 21. ACT: ANCD, 2010. Available at: http://www.ancd.org.au/images/PDF/Researchpapers/rp21_situational_analysis.pdf (accessed August 2010).
- [6] UNESCAP. Statistical yearbook for Asia and the Pacific. Bangkok: UNESCAP, 2007. Available at: <http://www.unescap.org/publications/detail.asp?id=1275> (accessed July 2010).
- [7] Australian Institute of Health and Welfare. 2007 National Drug Strategy Household Survey: first results. Drug Statistics Series number 20. Canberra: AIHW, 2010.
- [8] Adolescent Health Research Group. Youth'07: The Health and Wellbeing of Secondary School Students in New Zealand. Initial Findings. Auckland: The University of Auckland, 2008.
- [9] Adolescent Health Research Group. Youth'07: The Health and Wellbeing of Secondary School Students in New Zealand. Technical Report. Auckland: The University of Auckland, 2010.
- [10] Council of the Ongoing Government of Tokelau and Secretariat of the Pacific Community. Second generation surveillance surveys of sexual and risk behavior among youth in Tokelau. 2010.
- [11] Guam Department of Mental Health & Substance Abuse. Strategic prevention framework—state incentive grant (SPF-SIG): Guam substance abuse epidemiological profile, 2007 update. 2008.
- [12] Lippe J, Brener N, Kann L, *et al.* Youth Risk Behavior Surveillance—Pacific Island United States Territories, 2007. *MMWR (Morbidity and Mortality Weekly Report)* 2008;57:228–56.
- [13] Ministry of Health Cook Islands and Secretariat of the Pacific Community. Second generation surveys of antenatal women and youth, Cook Islands. 2006.
- [14] Secretariat of the Pacific Community. Second generation surveys on HIV and STIs and High Risk Behaviour in New Caledonia. 2007.
- [15] Secretariat of the Pacific Community. Second generation surveys on HIV and STIs and High Risk Behaviour in Wallis and Futuna. 2007.
- [16] Secretariat of the Pacific Community and Solomon Islands Ministry of Health. Second generation surveillance of Antenatal Women and youth. 2008.
- [17] Secretariat of the Pacific Community and Tonga Ministry of Health. Second generation surveillance of Antenatal clinic attendees and youth. 2008.
- [18] Secretariat of the Pacific Community and Vanuatu Ministry of Health. Second generation surveillance of Antenatal Women, STI clinic clients and youth. 2008.
- [19] Secretariat of the Pacific Community. Second generation surveillance surveys in the Federal States of Micronesia 2006 to 2008. 2009.
- [20] Secretariat of the Pacific Community. Second Generation Surveillance Surveys. Available at: http://www.spc.int/hiv/downloads/second-generation-surveillance-surveys/index.php?option=com_docman&task=cat_view&gid=76&Itemid=148 (accessed October 2010).
- [21] Buchanan-Aruwafu H. An integrated picture: HIV risk and vulnerability in the Pacific. Research gaps, priorities and approaches. Noumea: Secretariat of the Pacific Community, 2007.
- [22] National Drug and Alcohol Research Centre. Drug trends. 2010. Available at: <http://ndarc.med.unsw.edu.au/NDARCWeb.nsf/page/Drug%20Trends> (accessed July 2010).
- [23] The University of South Pacific. Pacific Drug & Alcohol Research Network. 2010. Available at: <http://www.usp.ac.fj/index.php?id=8328> (accessed October 2010).
- [24] Lee N, Jenner L. Development of an alcohol policy for Vanuatu. Melbourne: Turning Point, 2010.
- [25] Massey University. Centre for Social and Health Outcomes Research and Evaluation (SHORE). Available at: <http://www.shore.ac.nz/who.html> (accessed October 2010).
- [26] Goldenring J, Cohen E. Getting into adolescents heads. *Contemp Pediatr* 1988;5:75–80.
- [27] Cohen E, MacKenzie R, Yates G. HEADSS, a psychosocial risk assessment instrument: implications for designing effective intervention programmes for runaway youth. *J Adolesc Health* 1991;12:539–44.
- [28] WHO. Orientation programme on adolescent health for health-care providers. Facilitators guide—new modules. 2006. Available at: http://www.who.int/child_adolescent_health/documents/9241591269/en/index.html (accessed July 2010).

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