

# HIV/AIDS knowledge, attitudes and practices in the Cook Islands

NETI TAMARUA\*  
EDWINA TANGAROA\*  
MICHAEL J. O'LEARY\*\*

## Abstract

In 1995 and 1996, the Cook Islands Ministry of Health conducted a survey of 447 residents of Rarotonga, Atiu, and Manihiki to determine current knowledge, attitudes, and practices related to HIV and AIDS. The survey consisted of a questionnaire administered to men and women between the ages of 15 and 49, either by personal interview (in the outer islands) or self-completed by participants (a substitute method used by many of the respondents in Rarotonga). Responses demonstrated a good understanding of the major modes of HIV transmission, although all groups tended to overestimate the risk of activities not involving sexual intercourse or blood exchange. Women were, in general, more knowledgeable about AIDS than men. Most respondents believed that the names of HIV-infected persons should be made public. About 40% held the view that HIV infection represents punishment for past behaviour, and that those infected should not be allowed to live in the community. These negative attitudes were less common among those with higher levels of HIV/AIDS knowledge. The reported mean age of first sexual intercourse was 16.7 years, a figure which has changed little over time. Males under age 30 were much more likely to report multiple sexual partners than were other groups. Most participants (>80%) believe condoms to be an effective means of prevention, and about 28% of those with more than one sexual partner had used a condom at least once in the preceding year. Although there were some

**Women were, in general, more knowledgeable about AIDS than men. Most respondents believed that the names of HIV-infected persons should be made public.**

methodological concerns with this study, the results point the way to priorities in health education and behavioural change which, if successfully implemented, could reduce the risk of HIV transmission in the Cook Islands. Although there are no unique features of behaviour or attitude which will protect the Cook Islands from HIV, the awareness of the problem and of the major risk behaviours, the acceptance of the protective benefit of condoms, and the positive attitude toward HIV/AIDS education in schools are all factors which concerned groups and individuals in the community can capitalize on to minimize the impact of the epidemic.

## Introduction

No cases of HIV infection or of AIDS have yet been confirmed in the Cook Islands<sup>1</sup>. As part of the Ministry of Health's programme for HIV/AIDS prevention, a survey was conducted in 1995 and 1996 to assess the knowledge, attitudes, and practices of residents of the Cook Islands, to allow focused educational efforts and interventions.

## Methods

Three sites were selected for the survey: the main island of Rarotonga, and the atolls of Atiu, to represent the southern islands, and Manihiki, to represent the northern group. Rarotonga and Atiu were surveyed in 1995, but for logistical reasons, the survey on Manihiki was in 1996.

The original study design called for training of interviewers and systematic selection of participants. Four interviewers were recruited. Although formal training did not take place, practice interviews were conducted to gain familiarity with the questions and responses.

The sample population included men and women aged 15 to 49 on the atolls of Atiu and Manihiki, and in eight villages on Rarotonga. The eight villages had been randomly chosen as representative of the island. The population denominators are displayed in Table 1.

Although it was intended that participants would be selected systematically (e.g. every 10<sup>th</sup> person from the census records) and adjusted to provide an approximately equal

\*Health Education staff, Ministry of Health, P.O. Box 109, Rarotonga, Cook Islands. Fax: (682) 23109. \*\*WHO Medical Officer, P.O. Box 113, Suva, Fiji. Fax: (679) 300 462. e-mail: mjol@is.com.fj

**Table 1. Cook Islands 1995-1996 AIDS KABP Survey: census and sample populations**

Site	1991 census populations					Survey sample		
	Total	M	F	M (15-49)	F (15-49)	M (15-49)	F (15-49)	Total sample
Rarotonga	10,886	5,619	5,267	3,060	2,944	101	105	206
Atiu	1,006	526	480	239	197	53	68	121
Manihiki	663	366	297	179	148	60	60	120
Elsewhere	6,062	3,186	2,876	1,346	1,233	0	0	0
<b>Total</b>	<b>18,617</b>	<b>9,697</b>	<b>8,920</b>	<b>4,824</b>	<b>4,522</b>	<b>214</b>	<b>233</b>	<b>447</b>

number in each of four age groups (15-19, 20-29, 30-39, and 40-49), this systematic selection was only partly implemented. Many, perhaps half, of the participants were chosen by health workers, or by house-to-house or other samples of convenience.

The same eight-page questionnaire was used for interviews with all 447 participants, the last two pages of which contained the more sensitive of the 57 questions. Nearly all interviews on Atiu and Manihiki were face-to-face, but on Rarotonga most of the participants were given at least the last two pages to complete themselves, and perhaps as many as 40% of the Rarotonga participants self-completed the entire questionnaire. None of the interviewers kept track of refusals, but these were said to be very few on the outer islands, and fewer than 20% on Rarotonga. Neither the interviewer nor the method of interview was noted on individual forms. Data were entered and analyzed in Epi Info 6.

### Results

Responses to some questions could not be interpreted due to ambiguous wording of the question or the answers, and to internal inconsistencies which suggested that the respondent (or the interviewer) misunderstood the question. Clusters of

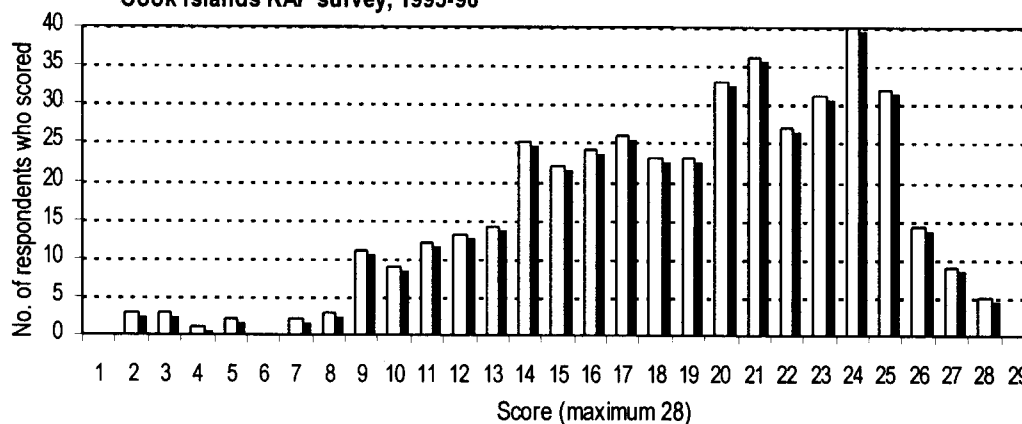
questions relating to background demographic information, knowledge of AIDS and HIV transmission, attitudes toward HIV-infected people, and personal beliefs and behaviours were mixed throughout the questionnaire.

### Knowledge

Twenty-eight questions could be categorized as "knowledge" questions. To determine the overall knowledge of respondents, one point was given for each "correct" answer, to a maximum knowledge score of 28. Because these were multiple-choice questions, chance alone would provide 8 or 9 correct answers. The frequency distribution of total scores by respondents on the 28 knowledge questions is shown in Figure 1.

Women did significantly better overall on knowledge questions than did men (Wilcoxon two-sample test,  $df=1$ ,  $p<0.02$ ). Total knowledge scores of more than 20 (scores greater than 20 represented the upper one-third of all scores), were achieved by 41.2% of women and 29.0% of men. There was no significant difference in overall knowledge scores between those living in Rarotonga and those on the outer islands, nor in comparing different age groups, although those over 40 years of age did somewhat less well.

**Figure 1. Scores attained by respondents to 28 knowledge questions, Cook Islands KAP survey, 1995-96**



Twelve of the "knowledge" questions assessed knowledge of the magnitude of the risk of potential modes of HIV transmission, but with only three possible responses: "good chance", "little chance", or "don't know" (in most cases a "no chance" response would have been the most appropriate). The responses to each of these 12 transmission questions are displayed in Table 2, ranked by risk of transmission as assessed by respondents.

There was no significant difference nor any discernable pattern in comparing the responses of outer islanders (Atiu and Manihiki) with those from Rarotonga.

Although men tended to overestimate transmission risks to a greater degree than did women, this did not approach significance for any of the twelve transmission questions with the exception of the risk of being in school with a child with HIV infection. For this question, 19.3% of men but only 12.1% of women felt there was a good chance of HIV transmission ( $X^2=6.22$ ,  $df=2$ ,  $p<0.05$ ).

Those in the oldest age group (40–49 year olds) did less well than younger respondents in assessing the risks of kissing, sharing eating utensils, or using a public toilet. Older respondents were somewhat more likely than younger ones to ascribe a "good chance" of transmission to these activities

(which in fact represent essentially no risk of HIV transmission), and they were also substantially more unsure of their answers. Nearly one-third of older subjects responded "don't know" to these questions.

While a large majority understood such basic facts as the possibility of HIV transmission through unprotected sex (87.6%), and from pregnant woman to unborn baby (88.5%), 31.8% considered the donating of blood to carry a good chance of HIV transmission, and more than 25% felt there was a good chance of HIV transmission from kissing an infected person, or getting bitten by a mosquito. Oddly, while condoms were considered an effective means of prevention through sexual transmission by about 80% of respondents, and mutual monogamy a good means of protection by 87.6%, only 59.2% believed that having no sex at all provided good protection. Over 10% of respondents believed that there is already either a vaccine which protects from HIV infection, or a cure for AIDS.

## Attitudes

Six questions assessed the attitudes of respondents concerning HIV/AIDS. Excluding those with no opinion, a large majority (76.7%) believed that the community should be informed when someone is diagnosed with HIV, and 38.7%

Table 2. Risk of HIV transmission as assessed by survey respondents

Activity	Per cent responding who believe an activity carries a "good chance" or a "little chance" of HIV transmission.		
	Good chance	Little chance	Don't know
Having unprotected sex with a person who has HIV infection	69.8	19.6	10.6
Sharing needles used by drug users	63.7	22.0	14.3
Receiving a blood transfusion	42.5	34.8	22.7
Donating or giving blood	31.8	48.7	19.5
Kissing a person on the mouth who has HIV infection	27.4	54.5	18.2
Getting bitten by a mosquito	26.3	51.9	21.8
Eating in a restaurant where the cook or a food handler has HIV infection	21.5	56.7	21.7
Sharing plates, forks or drinking glasses with a person who has HIV infection	21.1	59.1	19.8
Using a public toilet	20.5	56.8	22.7
Working with someone who has HIV infection	16.6	60.0	23.5
Being in school with a child who has HIV infection	15.5	64.0	20.5
Shaking hands or touching someone who has HIV infection	13.0	70.8	16.2

**Table 3. Attitudes regarding HIV/AIDS in the Cook Islands**

Statement	Number responding (%) who agree or disagree with the statement		
	Agree	Disagree	No opinion
The community should be told when someone has HIV infection.	319 (72.2%)	97 (21.9%)	26 (5.9%)
People with HIV infection should not be allowed to live in the community.	161 (36.4%)	255 (57.7%)	26 (5.9%)
People who get AIDS are being punished for their behaviour.	161 (37.3%)	227 (52.5%)	44 (10.2%)
Health care workers should have a choice whether or not to provide health care services to a person with HIV infection.	207 (47.3%)	201 (45.9%)	30 (6.8%)

felt that HIV-infected persons should not be allowed to live in the community. Furthermore, 41.5% of respondents felt that people with AIDS were being punished for their behaviour (see Table 3).

For each of these questions, responses did not vary significantly by sex, age group, or residence (Rarotonga versus outer islands). However, those with higher total knowledge scores were significantly less likely to agree with these statements. Among those with knowledge scores greater than 20, 68.2% (again, excluding those with no opinion) felt that the community should be told of HIV-infected people (OR 2.05,  $p < 0.005$ , compared with respondents with lower knowledge scores), 26.5% agreed with the ban on living in the community (OR 2.33,  $p < 0.0002$ ), and 31.7% believed that people with AIDS were being punished (OR 1.91,  $p < 0.005$ ).

In this community-based survey, 50.7% of respondents felt that health care workers should be able to choose whether or not to provide health care services to a person with HIV infection (Table 3). Total knowledge score was not a factor in responses to this question, but those living on the outer islands were significantly more likely to agree that health care workers should have such a choice than were Rarotonga residents (OR 1.97,  $p < 0.002$ ).

Over 35% of respondents believed that only tourists will transmit HIV in the Cook Islands, a view held much more strongly by younger respondents ( $X^2 = 13.79$ ,  $df = 3$ ,  $p < 0.005$ ) and by those with lower total knowledge scores ( $X^2 = 22.18$ ,  $df = 2$ ,  $p < 0.00002$ ). Fully 95% of respondents felt that children should be taught about AIDS prevention in school.

## Practices

The mean reported age at first sexual intercourse was 16.7 years (males 15.9, females 17.4), excluding those ( $n = 29$ ) who had not yet had sex. There was no difference, for either sex,

by residence (Rarotonga, outer islands). Furthermore, there have not been apparent changes over time, as may be seen in Table 4.

The age at first sexual intercourse among 108 respondents in the 15–19 age group is further characterized in Table 5.

Only one question approached the important subject of partner exchange rates (the frequency of partner change), and this one was difficult to interpret. The question as stated was "Over the past 12 months have you had only one or more than one sexual partner?" and the only responses allowed were "only one" or "more than one". There was not an option to respond "none", nor was there further quantification of those who had more than one partner. Nonetheless, males were markedly more likely than females to respond "more than one" (OR = 3.86,  $p < 2 \times 10^{-8}$ ), as were those under age 30 (OR = 4.38,  $p < 10^{-7}$ ). Those with lower levels of knowledge (scores of 20 or less) were also more likely to have more than one partner (OR = 1.75,  $p < 0.05$ ). There was no significant difference between those living on Rarotonga and those in the outer islands.

There were two questions asking respondents their views on condoms as an effective preventive measure: a simple "true – false" question (correct use of condoms can prevent the transmission of HIV), and an effectiveness question (how good or effective is using a condom to protect from HIV infection: "good", "fair", "not good at all", "don't know"). A sizable majority believe in the effectiveness of condoms, with 79.3% answering "true" to the first question, and 85.2% answering "good" (70.4%) or "fair" (14.8%) to the second. Regarding actual use, 17.7% of those with current or recent sexual relationships had used a condom in the past 12 months. As might be expected, those reporting more than one sexual partner in the past 12 months were more likely to have used condoms (OR = 2.23,  $p < 0.01$ ), with 27.9% having used condoms at least once in the past year. Condom use was more common on Rarotonga than in the outer islands

**Table 4. Mean age at first sexual intercourse, Cook Islands, by current age group**

Age group	Number of respondents	Mean age at first sexual intercourse
40 - 49	89	16.8
30 - 39	99	17.5
20 - 29	122	16.8
15 - 19	80	15.5 *
All ages	390	16.7

\* Excluding 28 others in this age group who had not yet had sex, and who would therefore raise the mean substantially.

(OR=2.69,  $p < 0.0005$ ), and tended to be more common among those under age 30, although this did not achieve statistical significance.

## Discussion

Although a number of surveys of HIV/AIDS knowledge, attitudes, and practices have been conducted in the Pacific, few have been published<sup>2</sup>, and others have been distributed only internally<sup>3,4,5,6</sup>. While each Pacific country has unique features in its educational standard, population mobility, culture, and lifestyle, a survey done in one country may still have significance or meaning beyond the national boundaries. The Cook Islands enjoys a relatively high standard of living, and has a mobile population, with considerable movement especially to and from New Zealand. While not overlooking the many differences among Pacific island countries, there are others which have such features in common, to some extent, with the Cook Islands. This is particularly true in Polynesia and Micronesia, although the primary external relationship of a country may be with the large metropolitan entities of Australia, the United States, or France, instead of New Zealand.

Certain aspects of the sampling and interviewing methodology may have introduced bias into this study. Sampling biases may be small in the two outer islands given the size of the sample relative to the population (in Manihiki, about 37% of the age-eligible population was sampled; in Atiu, about 28%), but could be more significant in Rarotonga, where only a little over 3% of the age-eligible population was sampled. Other potential biases include differences among interviewers and interviewing techniques which were not well-standardized or controlled, and the inability in the analysis to determine which questionnaires were obtained by face to face interview and which were self-administered. For many of the questions these issues may not be of importance, but some questions were excluded from the analysis when it appeared that many responses were inconsistent or contradictory.

Much of the questionnaire dealt with knowledge of HIV/AIDS and transmission of the virus. Participants generally recognized the highest risk activities for HIV transmission, but substantially overestimated the essentially zero risks of many other activities such as working, going to school, or sharing eating utensils with an HIV-infected person, kissing someone who is infected with HIV, or being bitten by a mosquito that may have fed on an infected person. This overestimation of risks of daily living has potentially serious implications for the social tolerance and treatment of HIV infected people, a situation the Cook Islands has yet to face.

**Table 5. First sexual experience of 15 - 19 year olds, Cook Islands**

Age	Percentage who have already had sex	Number who have had sex / respondents
15	35.3	6 / 17
16	72.2	13 / 18
17	66.7	16 / 24
18	92.3	24 / 26
19	91.3	21 / 23
<b>Total</b>	<b>74.1</b>	<b>80 / 108</b>

There was little difference in HIV/AIDS knowledge between those living in the "urban" environment of Rarotonga and those in the outer islands, but women in general scored significantly better than did men on the knowledge aspect of the questionnaire. Those over age 40, and men generally, were more likely to overestimate the risks of daily living, while those under age 20 were more likely to feel safe. One in 7 teenagers believed that there is already a vaccine which will protect them from HIV infection, or a cure for AIDS, or both. Teenagers were also more likely to believe that there is already a vaccine which will protect them from HIV infection, or a cure for AIDS, or both. Teenagers were also more likely to believe that their only risk came from tourists.

Only about 1 in 5 respondents favored confidentiality for HIV positive people. Presumably most of the rest mistakenly think that publicizing names could provide some community protective benefit. Of even greater concern is that 35% of respondents favor quarantine for HIV positive people. Furthermore, over 40% view AIDS as a punishment. These punitive attitudes, more common in the less AIDS-knowledgeable respondents, suggest a strong need for further health education<sup>7,8</sup>.

With a few exceptions, this study did not assess HIV/AIDS risk-taking behaviour. It is noteworthy however that age of first sexual intercourse has not changed much from one

generation to the next, remaining at just under age 17. Although neither the frequency of sexual activity nor the rate of partner exchange were assessed, it is clear that considerable sexual activity occurs among teenagers<sup>9</sup>. Over one-third of 15 year olds have had sex, as have two-thirds of 16 and 17 year olds, and 90% of 18 and 19 year olds. Respondents of all ages consider condoms to provide good protection, and there is evidence of use particularly among those with more than one sex partner.

Risks for HIV transmission are clearly present in the Cook Islands. Much more health education is needed<sup>10</sup>, focusing on how HIV is not transmitted in addition to the generally understood messages about sexual and blood transmission. Educational efforts will

need to target the young, especially young males, who tend to underestimate their personal risk while also engaging in activities that make them vulnerable to HIV transmission. Health education efforts must also focus on the social response to HIV/AIDS, to help the community recognize that publicizing the names of HIV-infected people, or especially attempting to quarantine or isolate them, will be counterproductive attempts to contain the virus.

## Conclusion

The broad recognition of the problem among residents of the Cook Islands, the awareness of the major risk behaviours, the knowledge of the protective benefit of condoms against sexual transmission, and the almost universal acceptance of AIDS education in schools, as highlighted by this study, are all factors favoring a successful national response to HIV/AIDS.

Despite the methodological problems described, and with the necessary proviso regarding interpretation of the results, much useful or suggestive information was obtained from the study. These results may be used to guide future efforts in HIV/AIDS prevention and control in the Cook Islands.

## Acknowledgements

The authors would like to thank in particular Mathew Rima of the Cook Islands Health Education staff, and public health nurses Mary Pakitoo and Cathy Wigmore, for their untiring assistance in conducting interviews. The authors acknowledge with gratitude the support of all those involved in the planning and conduct of this survey, and greatly appreciate the cooperation of the survey respondents.

**Over one-third of 15 year olds have had sex, as have two-thirds of 16 and 17 year olds, and 90% of 18 and 19 year olds. Respondents of all ages consider condoms to provide good protection...**

## References

1. World Health Organization. *STD HIV AIDS surveillance report* no.10. October 1997.
2. Jenkins C, Pataki-Schweizer K. Knowledge of AIDS in Papua New Guinea. *Papua New Guinea Med J.* 1993;36:192-204.
3. Workman AM, Kasperbauer LF, Workman RL, O'Brien MT. *Behaviour risk assessment survey related to AIDS prevention and education: The 1989 KABP survey.* Department of Public Health and Social Services, Government of Guam. 1989.
4. Plange NK, Govind SR, Robertson AFS. *Report on the baseline KABP survey in relation to STD/AIDS in Fiji.* Ministry of Health, Government of Fiji. 1991.
5. Plange NK, Govind SR, Robertson AFS. Knowledge, attitude, practice and behaviour on sexually transmitted diseases and AIDS in Fiji. Ministry of Health, Government of Fiji. 1991.
6. National STD/HIV/AIDS Programme. *Report on KABP survey in relation to STD/HIV/AIDS in Vanuatu.* Government of Vanuatu. 1992.
7. Lewis ND, Bailey J. HIV, international travel and tourism: Global issues and Pacific perspectives. *Asia-Pacific J Public Health.* 1992/1993;6:159-67.
8. O'Leary MJ. Mandatory testing for HIV: Part of the solution – or part of the problem? *Papua New Guinea Med J.* 1993;36:281-4.
9. Osuga K, Chang C. AIDS in the Pacific islands. *AIDS (suppl 2).* 1994;8:S111-6.
10. Malau C, O'Leary M, Jenkins C, Faraclas N. HIV/AIDS prevention and control in Papua New Guinea. *AIDS (suppl 2).* 1994;8:S117-24. □

It could be said that the AIDS pandemic is a classic own-goal scored by the human race against itself.

*Princess Anne*

Remark, Jan. 1988