

Mobility and HIV risk in a border region

**A study of factors affecting HIV risk on the
border of Papua, Indonesia, and Papua New
Guinea**

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Abbreviations and acronyms

AIDS Acquired Immune Deficiency Syndrome

BPS Badan Pusat Statistik (Indonesia's national statistical agency)

GARPR Global AIDS Response and Progress Report

HIV Human Immunodeficiency Virus

KPA Komisi Penanggulangan AIDS – AIDS management committee in Indonesia

PNG Papua New Guinea

UNAIDS United Nations organisation dealing with HIV & AIDS related issues

UNSW University of New South Wales

WHO World Health Organisation

Definitions

Respondents were provided with the following definition of partner:

- ***'Regular partner'*** – a partner who you have had sex with before
- ***'Casual partner'*** – a partner who you have not had sex with before and where no money or goods were exchanged for sex
- ***'Commercial partner'*** – a partner with whom money or goods were exchanged for sex

Acknowledgements

The authors of this report would like to thank the following individuals, organisations, and other stakeholders for giving their time, expertise, and commitment to this study. We would also like to thank the 311 participants who gave up their time as they crossed the border back into their home country to provide important information about themselves and their recent trip across the border.

West Papua, Indonesia

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Yuliana Marsyom, Dr Djoht Morin, Dr Melki Kolotjuju, Elsina Raunsai, Columbus Yaku, Jotje Hilmonds Morin, Melkianus Giay, Johanis Rumere, Binsar Lewakabessy, Ktut Rentyasti Palupi, Dr Grace Monica, Paschalis Howay, Dr Djecky Djoht Romulus, Nelson Pharuu, Melki Kolotjutju, Jack Baransano, John Rahail

Stakeholders

Government of Papua Province, Papua AIDS Commission, Cenderawasih University, Pangdam VIII TRIKORA Papua, Kapolda Papua, Kepala Badan Perbatasan dan kerja sama internasional Province Papua, Kepala Bappeda Province Papua, Walikota Jayapura, Kepala Badan perbatasan dan kerja sama daerah kota Jayapura, Kepala Distrik Muara Tami kota Jayapura, Kepala Kampung Skouw Yambe, Skouw Mabo, Skouw Saedan Mosso, Semua stakeholders diperbatasan RI PNG, Elsina Raunsai, SKM (The Papua Province Health Dept.) Melky Giyai, SKM (The Papua province Health Dept), Columbus Yaku, S. Pd (The HIV Study Center at the Cenderawasih University), Jotje Hilmonds Morin (The Papua Study Center at the Cenderawasih University), Johanis J. D. Rumere (The Population Study Center at the Cenderawasih University).

Papua New Guinea

Research and other staff

Angeline Amos, Martha Kupul, Gabrielle Kuman, Richard Nake Trumb

Stakeholders

Institute of Medical Research PNG, Symporian Sumun (Sandaun Provincial AIDS Committee Vanimo), Dr Wilfred Kaleva and Tony Lupiwa (National AIDS Council of Papua New Guinea)

UNSW

Cristina Rofe

Funding

- Australian Research Council Linkage Grant
- Papua New Guinea National AIDS Council
- Komisi penanggulangan AIDS Provinsi Papua

Preface

[To be written by two key people involved in the HIV response in West Papua Indonesia, and PNG, respectively]

Executive Summary

The 'Mobility Study' encompasses the first quantitative survey conducted on the border between the province of West Papua, Indonesia (hereafter referred to as 'Papua') and Papua New Guinea (PNG) to assess HIV risk among people traversing the border. The broad aim of the project was to examine the relationship between HIV risk and mobility across the border and to base recommendations on the findings. The Mobility Study also included a qualitative research arm, based on in-depth interviews with people who crossed the border during the period of the study. Results from these interviews are not included in this report and will be shown in a separate publication. The survey findings in this report make an important contribution to the knowledge about levels of HIV risk at the border and appropriate interventions, as well as the relationship between border crossing and HIV risk.

Recruitment occurred separately on both sides of the border, taking about six weeks on each side, starting with Papua in December 2013 and January 2014 and then in PNG during February and March, 2014. Data were collected in a structured questionnaire using electronic tablet devices which most participants self-administered unless literacy required the survey to be interviewer administered. Three hundred and eleven (N = 311) participants of 18 years of age and above from Papua and Papua New Guinea were sampled and recruited as they crossed back over the border to their home country at the official border crossing between Wutung, West Sepik, on the PNG side and Skou on the Papuan side. Of the 311 participants, 214 people (65%) were from Papua, comprising 157 men and 57 women. The remaining 117 (35%) were from PNG and consisted of 81 men and 36 women.

Patterns of border crossing

Most respondents made infrequent trips across the border, travelling on a monthly basis or less. A small proportion made more frequent trips – around 20% of people from PNG traversed the border on almost a daily basis. For the people from Papua, the main reason for cross border trips was to visit family, whereas for people from PNG, overwhelmingly their purpose was to shop. Study participants cited similar reasons for travel regardless of whether they made frequent or infrequent trips.

Sexual activity and condom use at home and across the border

Although 60% of the sample had sex in the last 12 months, very few (12%) had sex on their cross-border trip, however for men from PNG this figure was higher at 30%. In their home country, most men reported having one regular partner, with small numbers having casual and/or commercial sex. Whilst about 50% of PNG men had more than one partner in their home country, approximately 70% of those who had cross-border sex reported having more than one partner. For Papuan men, 70% reported having one partner both at home and on their cross-border trip. Engaging in multiple sexual partnerships is a known risk factor for HIV.

Most people were having vaginal intercourse, with very small numbers having heterosexual anal sex and no men reported having sex with men. Hence, the risk for HIV transmission in this population mainly centres on vaginal intercourse.

People from PNG were more aware of and had more often used male condoms compared to their Papuan counterparts and this difference was particularly marked amongst women. Accordingly, people from PNG could also obtain condoms more easily and reliably – 71% of PNG men said they could always get condoms when needed versus 33% of Papuan men. Cost was not a barrier to condom use, but availability was an issue for some people. The most popular place to obtain condoms was health clinics.

Amongst women there was very little casual sex and no commercial sex, and most reported having just one partner. Very few women reported using condoms and this is likely to be a reflection of the fact that most women perceive themselves to be in monogamous regular relationships.

Skin penetration procedures, including penis enhancement and circumcision

More men from PNG than Papua were circumcised and this tended to be at an older age. Men from Papua tended to have round penile cuts performed by health professionals; in contrast men from PNG more commonly had straight dorsal cuts performed outdoors by friends or traditional cutters. Initial infection and bleeding risks are higher when cutting occurs outside of a clinical setting, hence PNG men may be more at risk of these complications.

Very few (6%) men had artificially enhanced their penis by injection of substances; therefore this is not considered to be significant risk behaviour for this population. Tattoos were much more common, especially amongst people from PNG of whom half had a tattoo. Although just 10% of tattoos were created with previously used equipment, this still represents a risky practice, which could be eliminated by tighter regulation.

Alcohol and drug use

Fairly infrequent alcohol use (fortnightly or less) was reported by most of the sample; the group who drank the most were men from PNG, of whom 40% drank alcohol once a week or more. Few people consumed alcohol on their cross-border trip, suggesting that in general, people are not commonly drinking on cross-border trips. Around one third of people from PNG who had consumed alcohol in the last year stated that they were, at times, too drunk to use condoms, representing increased risk for HIV transmission.

There was very little drug use amongst this sample and virtually no injecting drug use. This coupled with the low rates of equipment reuse for tattoos and low levels of penile injections suggests that skin penetration procedures are not a major risk factor for HIV transmission amongst this sample.

Knowledge and attitudes surrounding STIs and HIV

There was a sharp contrast between awareness of STIs and awareness of HIV. Whereas most people had heard of HIV, only half had heard of STIs; the reasons for this are unclear. Main sources of information regarding HIV were health services and schools, although a range of media were also frequently cited sources in PNG.

People who considered themselves at some risk of HIV cited valid reasons for this perception, i.e. not always using condoms and having multiple partners. This was more common amongst the men from PNG than any other group, probably as this was the group containing the most people who were not in a regular relationship.

Knowledge of HIV transmission varied, with most people being aware that transmission can occur by reusing needles, and fewest people being aware that there were effective medications for the treatment of HIV. There was also a difference between countries, with people from PNG being more aware of sexual risk practices and people from Papua being more aware of other methods of transmission via blood or mother-to-child transmission.

Global AIDS Response Progress Reporting (GARPR) Indicators: Papua

Amongst the people from Papua, 14% attained GARPR Indicator 1.1, which pertains to knowledge about HIV transmission. This correlates almost exactly with the last GARPR submitted by Indonesia in 2012, in which 14.3% of young people correctly answered all 5 questions (National AIDS Commission Indonesia, 2012).

Indicator 1.3 measures the percentage of those having more than one partner in the last 12 months, for this Papuan sample the figure was 10% (all of whom were men, so 13% of Papuan men). This is much higher than the 0.3% reported in 2012 for all of Indonesia, and further supports the position that unsafe sex is the main mode of HIV transmission in Papua (National AIDS Commission Indonesia, 2012).

GARPR Indicators: PNG

Amongst respondents from PNG, 29% attained GARPR Indicator 1.1, which is less than the 40.9% reported in the 2014 GARPR for PNG (National Department of Health, PNG, 2014), though this national data was for young people only who may have greater access to information from educational establishments. Thirty three per cent of respondents from PNG had more than one partner in the preceding 12 months, which again is higher than that found in the national report where the proportion was just 17.3% (National Department of Health, PNG, 2014).

Indicator 1.5 was not reported in the 2014 GARPR, but 2010 figures for PNG indicate that 5% of the population had an HIV test within the preceding 12 months and knew their result (National AIDS Council PNG, 2010). A far higher 21% of this sample from PNG had been tested and knew their results.

Access to services

Most people knew that HIV testing was available, but only 35% of Papuans and 46% of the people from PNG had ever had an HIV test. Of those who were tested, most had been tested more than a year ago. It is likely that most people did not feel it necessary to get tested as they were only having sex with one regular partner.

Recommendations

1. Increase awareness/education about condoms and increase condom availability in both countries but particularly in Papua. Targeting of young, single men (as the group most likely to be having multiple partnerships/casual sex) may be the most effective use of resources. This may require innovative approaches, as this group may not regularly attend health services.
2. Increase education regarding the risks of penile enhancement techniques and the use of non-sterile equipment for skin penetration procedures. Working with traditional cutters in PNG may help to ensure this tradition is carried out in the safest possible way.
3. Carefully monitor injecting drug use behaviours in this region in order to quickly identify emergent HIV trends.
4. Increase knowledge of STIs and their relationship to HIV, possibly by combining campaigns and programs. Target avenues used already by young, single people to enhance awareness and education regarding STIs and HIV. A focus for Papua is education on sexual transmission of HIV and for PNG a focus on information regarding other modes of transmission.

Introduction

HIV is a significant health issue in the Asia-Pacific region and some areas of high prevalence are of particular concern. Papua New Guinea (PNG) is a country previously considered to have a generalised HIV epidemic; however recent data indicates a reduced prevalence of 0.65% (National Department of Health PNG, 2014). Moreover, disease prevalence is concentrated in certain populations (specifically people who sell sex and men who have sex with men) and in certain geographical locations (National Department of Health PNG, 2014). Neighbouring Indonesia also reports a non-generalised epidemic with a rate of 0.5% of all adults aged 15-49 infected in 2013 (UNAIDS, 2013). However, these figures contrast sharply with the situation in the Indonesian region of Papua that shares the border with PNG. In 2006, an integrated biological and behavioural survey of 6,500 people from both Papua and West Papua provinces (an area collectively known as Tanah Papua) aged 15-49 demonstrated a generalised epidemic with a prevalence rate of 2.4% (BPS & Ministry of Health, 2007). More recent precise figures are not available for this particular region, but some authors estimate even higher rates particularly among highland populations (Butt et al., 2010). These diverse circumstances in adjacent geographical regions raise concern for potential increases in HIV transmission.

Mobility and HIV Transmission

Whilst individual behaviours undoubtedly play a role in the transmission of HIV, the social context and settings within which such actions occur are arguably even more relevant determinants of risk. Various types of mobility have been identified in the literature as creating and perpetuating conditions that enhance the risk of HIV transmission. Longer-term or permanent migration for work has been associated with an increase in risky behaviours (Ford & Chamrathirong, 2012; Goldberg, 2012). Additionally, people in occupations that inherently involve frequent travel (e.g. truck drivers, fishermen and businessmen) experience a number of influences that may lead to more risky sexual practices (Delany-Moretlwe et al., 2014; Smolak, 2014; Camlin et al., 2013; Uretsky, 2008). These include the loneliness of being away from family and usual social circle, loss of social supports and norms and a potentially more permissive culture in the mobile group or destination (Smolak, 2014). The concurrent lack of access to regular sources of healthcare and advice adds another layer of complexity (Delany-Moretlwe et al., 2014). Development of previously rural areas e.g. for mining, can lead to the phasing out of traditional ways of trading and working and different types of economies may develop, including sex economies – this coupled with low levels of HIV knowledge and low availability of condoms creates circumstances conducive to increased HIV transmission (Doussantousse, Sakounnavong & Paterson, 2011). Increased population mobility is therefore associated with increased risk of HIV transmission not only for those who are mobile, but also for the partners left at home (Kwena et al., 2013; Saggurti et al., 2012; Kishamawe et al., 2006).

Mobility in PNG and Papua

In both PNG and Papua increased levels of mobility for work purposes have been identified, associated with natural resource mining and infrastructure development (Redman-McLaren et al., 2013; Simonin, Bushee & Courcard, 2011; Wardlow, 2007). Wardlow (2007) found that high levels of mobility amongst Huli men in PNG increased the opportunities for extra-marital sex and found that most men had had extra-marital sex during the preceding month, this combined with low levels of condom use (mainly due to lack of availability) further compounded HIV risk for both the men and their wives.

The term ‘mobile men with money’ has been used to describe a particular group of people who, on account of their mobility and ability to pay for sex, are potentially at higher risk to both contract and spread HIV (Aggleton et al., 2014; Uretsky, 2008). This group is a growing feature along the Indonesia/PNG border hence implicating this region as a site for increased risk for HIV transmission (KPA, 2010).

A scoping study conducted by the KPA (2010) at the northern end of the border between the Indonesian district of Kota Jayapura and the West Sepik (or Sandaun province) area of PNG revealed frequent border crossings for a variety of reasons:

Familial: Traditional lands are often spread across the border areas and people have rights to use their lands for hunting, gathering and ceremony. Crossings for familial purposes also increase when particular ceremonies or celebrations are being held.

Commercial: Selling of farm produce is an important reason for crossing the border. Also, the good exchange rate from 'kina' (PNG currency) to 'rupiah' (Indonesian currency) means that people cross the border to work and make purchases in Papua. Similarly, there is also significant weekend travel to Papua from PNG after workers have received their pay on Fridays and wish to spend it in cheaper Papua (KPA, 2010).

In addition to mobility, this report identified other factors contributory to HIV transmission risk in this border region namely; low levels of knowledge regarding HIV and condom use, reduced condom availability, easy access to commercial sex workers in Indonesia and easy access to transport throughout the region (KPA, 2010). In addition to unsafe sex, certain other behaviours may enhance HIV risk. Drug use, including injecting drug use is more common amongst mobile workers (Aggleton et al., 2014). Non-medical injections to enhance penis size have been reported by some authors who report this being more popular in South Asia (Karakan et al., 2012; Manny et al., 2010; Hull & Budiharsana, 2001). Anecdotal evidence suggests that this may be a growing practice in the study region and indeed it has been reported on local news sites ("Sex boost injection a danger to men", 2014).

The border area between PNG and Indonesia is therefore identified as a site for potential increased HIV transmission in an area with existing higher prevalence. Whilst the above literature has established links between mobility and HIV, no studies have examined the specific issues in this particular border setting. This study aims to elucidate patterns and rationales for border crossings, ascertain knowledge and attitudes towards HIV, understand practices and behaviours that increase vulnerability to HIV and whether these show cross-border differences. Information is also sought regarding health care services in this region. The findings will help to inform HIV policy and practice in the area and hence contribute to HIV treatment, care and prevention.

Methods

A cross-sectional survey examining behaviour and knowledge was conducted at a northern border crossing between Wutung, West Sepik, on the PNG side and Skou on the Papua, Indonesia side of the border. Respondents were people from both countries who were on their homeward trip following a border crossing.

Participants

Participants were residents of either Indonesia or PNG who were returning home from a trip across the border. Participants were recruited within their home country only. Eligibility criteria for participation were:

- Male or female resident of Indonesia or PNG
- On their return journey from a trip across the border
- Aged 18 years or above

Previous scoping studies established that there was sufficient border traffic in this region to ensure an adequate sample size at the official border crossing between Wutung on the PNG side and Skou on the Indonesian side. Sampling and recruitment was approved by border officials to ensure that people travelling by vehicles or on foot could be approached, reducing bias. People crossing the border who appeared to be over 18 were approached by a member of the research team and eligibility established. The voluntary nature of the study and strict confidentiality of responses was emphasised, and those who agreed to participate proceeded to self-complete the questionnaire. The questionnaire was kept as brief as possible and confidentiality optimised in an attempt to reduce refusals to participate and hence minimise bias. After each questionnaire was completed, the next person to cross the border who appeared to be over 18 was then approached. Recruitment occurred between 9am and 6pm daily during border opening hours. Although the intention was to recruit equal numbers of men and women, the far greater number of men crossing the border meant this was not possible.

Measures

Data were collected via a survey questionnaire which was based on the Family Health International guidelines for HIV surveys (Family Health International, 2000). The questionnaire took approximately thirty minutes to complete and commenced by gaining consent. The survey collected data on socio-demographic variables, patterns and reasons for border crossings, male condom awareness and use, circumcision and penis injections, alcohol and drug use, sexual practices both at home and across the border, STIs, knowledge and attitudes to HIV and access to services. The questionnaire was translated into both Indonesian and Tok Pisin, (the main languages of each country) and then uploaded onto electronic tablet devices. Electronic tablet devices were used to administer the questionnaires as this method optimises confidentiality and also eliminates the need for data entry as the electronic data can be uploaded directly to statistical or other software. This reduces both potential errors in data entry and personnel time. An audio option was available in the software, intended for people with low literacy levels. Members of the research team were on hand to assist if necessary. Questionnaire data were identified only by a number and hence were confidential as there was no recording of participants' name or other identifying information.

Study procedures

Research teams from each country collected the data at their respective border crossing post. The research teams consisted of academics from two local universities, graduate students and interviewers who had been trained on the study protocol.

The study site was an official border crossing post in the far northern area of the island. The crossing point in Papua was situated in Skou, with the nearest town/city being Jayapura. In PNG, Wutung was the crossing and Vanimo the nearest town. This site was identified as having a large proportion of people crossing for commercial/leisure reasons rather than 'traditional' reasons (e.g. visiting family). It was chosen because anecdotal reports indicated that people who travel for commercial reasons may be engaging in behaviours that carry more HIV risk than those who travel for traditional reasons. In addition, scoping studies established that this crossing was used frequently enough to yield adequate sample sizes and that it was easily accessible to the research team, unlike many other alternative border crossing sites which had fewer border crossers.

Data were collected over a period of four months during December 2013 to March 2014. Questionnaires were uploaded and backed-up daily to USB storage devices and, when internet access was available, emailed back to the first author at UNSW.

Sampling and recruitment

The research teams on both sides of the border collected data from people who were returning to their home country after having just crossed the border. Each research team member would approach the first available person who crossed the border to explain the study, assess the person's eligibility and whether they were interested in participating. Those who were interested in participating were provided with a Participant Information Sheet after which, if they wanted to proceed, were administered the questionnaire by one of the trained research team members.

In the initial sampling plan it was intended that women would be over sampled as formative work on the border suggested that fewer women crossed the border. As it turned out, there were even fewer women than the team had anticipated and too few for it to be feasible to over sample.

Statistical analyses

All analyses were performed using IBM SPSS version 22. Descriptive statistics were mainly analysed by gender and country, hence for most descriptors information is given for Papuan men, Papuan women, PNG men, PNG women and also as an overall figure for the entire sample. Within some questions, where participant responses were lower or where there were minimal gender differences, figures are given by country only. Univariate analyses between countries were prioritised as such information may be more useful for agencies involved in service planning.

Ethics

Ethics approval was provided by the Human Research Ethics Committee (HREC) of UNSW. In country ethics was obtained from a required three ethics committees in PNG and one in Papua.

Results

Section A. Socio-demographic characteristics

Country of origin and gender

A total of 331 people participated in the study and completed the survey. There were 214 participants (65%) from Papua, comprising 157 men and 57 women. The remaining 117 (35%) were from PNG and consisted of 81 men and 36 women.

Age

Participants from Papua had a mean age of 35.5 years (SD 12.86) and those from PNG had a mean age of 32.0 years (SD 10.06). There was a statistically significant difference in age between the two countries of 3.5 years, $t(322) = 2.48, p = .01$, with the people from Papua being slightly older. In 2011, in Indonesia the median age was 28.2 years (Indonesian Investments, 2013), correspondingly in PNG in 2010 the median age was 20.4 (WHO, 2013). This indicates that our sample is on average, older than the general populations of each country which is entirely expected in a sample of adults. Figure 1 shows the mean age of participants, with error bars representing the 95% confidence intervals (CIs).

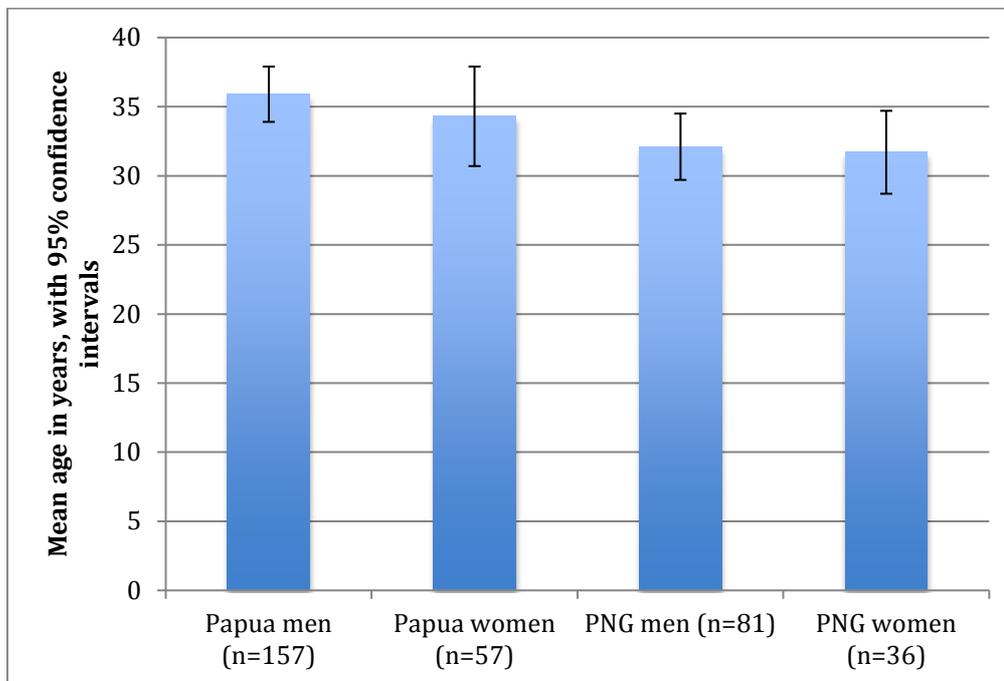


Figure 1: Mean age of participants with 95% confidence intervals, by country and gender

Level of education

Most people had been educated to at least primary school level and the majority had completed high school. Completion of a diploma or technical school was the most common form of post-school education in PNG, in contrast to Papua where a larger proportion had graduated from a university, with this difference being statistically significant, $X^2(6) = 56.05, p = .00$. Figure 2 illustrates the levels of education obtained by country and gender.

In PNG in general in 2010, only half the women and two thirds of the men aged over 25 had ever attended school (WHO, 2013). In urban Papua, almost all adults had attended school but this figure drops sharply amongst the rural population, of whom just 56% had ever attended school (BPS Statistics, 2013). This indicates that our sample is more educated than the average PNG and rural Papuan population.

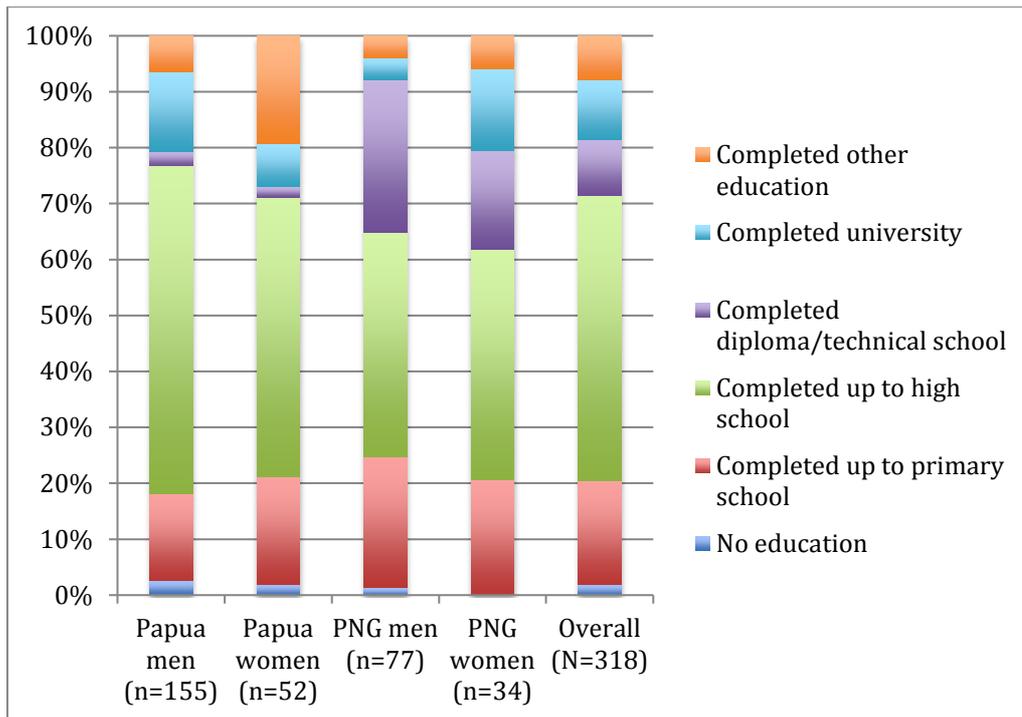


Figure 2: Highest level of education completed, by country and gender

Religion

Most of the respondents reported their religion as Christian, though in Papua a small, but significant proportion were also Muslim (Figure 3).

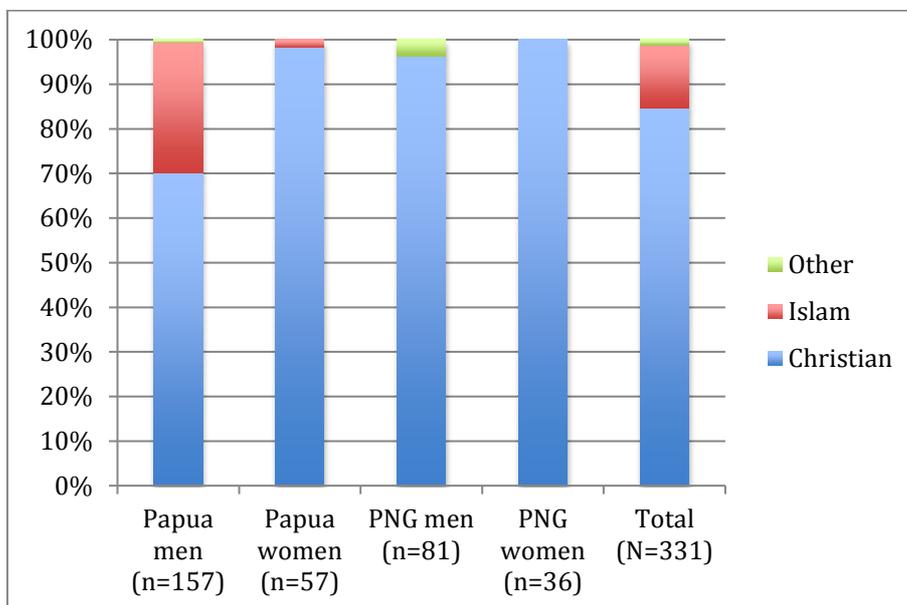


Figure 3: Religion, by country and gender

Length of residence

The majority of Papuans had lived in their area for more than 10 years whereas the reverse was true for the PNG population, most of whom had lived in their current location for less than 10 years. The distribution of length of residence is shown in Figure 4.

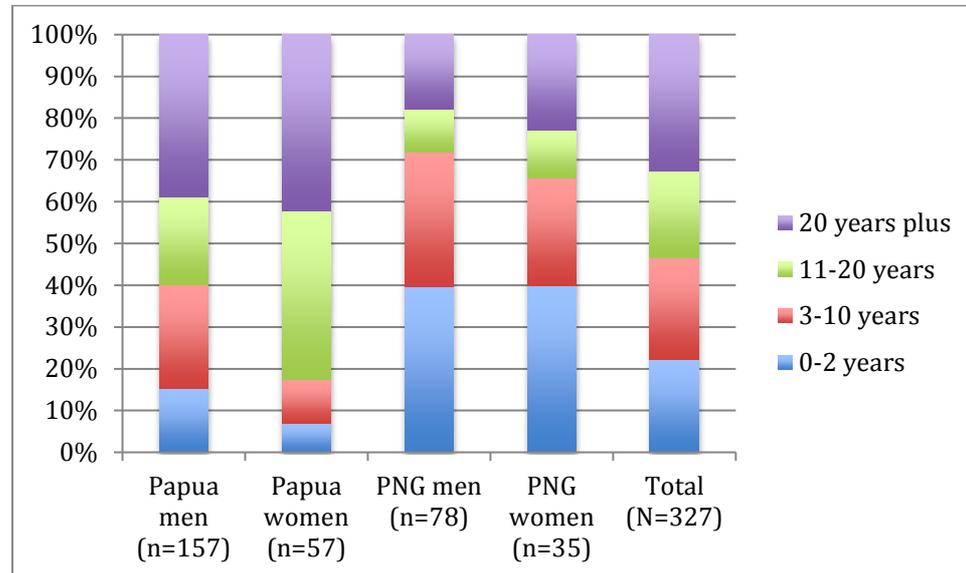


Figure 4: Length of residence in current area in years, by country and gender

Living arrangements

Most people from Papua lived with a partner and/or parents but people from PNG were more likely to live with siblings or other relatives. Living with friends or co-workers was less common across both countries and very few people lived alone (Table 1).

Table 1: Type of cohabitants, by country*

Type of cohabitant	Papua n = 214 (%)	PNG n = 117 (%)	Total N = 331 (%)
Spouse/other sexual partner	105 (49%)	30 (26%)	135 (41%)
Parents/parents-in-law	65 (30%)	36 (31%)	101 (31%)
Siblings/other relatives	49 (23%)	45 (38%)	94 (28%)
Children	49 (23%)	24 (21%)	73 (22%)
Friends/co-workers	32 (15%)	15 (13%)	47 (14%)
Lives alone	1 (<1%)	10 (9%)	11 (3%)
Other	9 (4%)	5 (4%)	14 (4%)

*Respondents could select as many options as applicable

Marital status

Approximately one third of the sample was single, though this figure was higher for men from PNG. The majority of people were in a type of marriage, either traditional or non-traditional. Significantly more Papuans than participants from PNG were in a non-traditional marriage, while the situation was reversed for traditional marriage, $\chi^2 (4) = 38.46, p = .00$ (Figure 5).

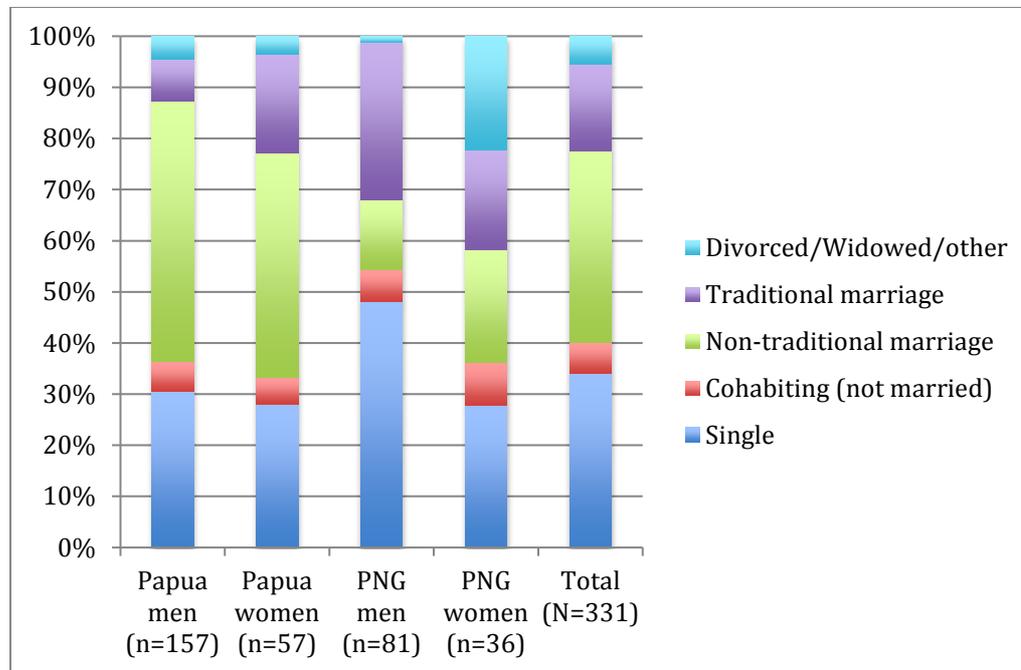


Figure 5: Marital status, by country & gender

Section B. Travel across the border

Number of trips across the border

Respondents were asked to indicate how many times they had crossed the border in the last 12 months. The number of trips varied greatly, with the majority of people making between 1 and 12 trips, i.e. crossing less than once a month. The most notable difference between the countries was seen in those who traversed the border very frequently - more than 300 times per year. Of the PNG sample, 20% travelled this often compared with only 0.5% of the Papuan sample, $\chi^2(4) = 52.96, p = .00$ (Figure 6).

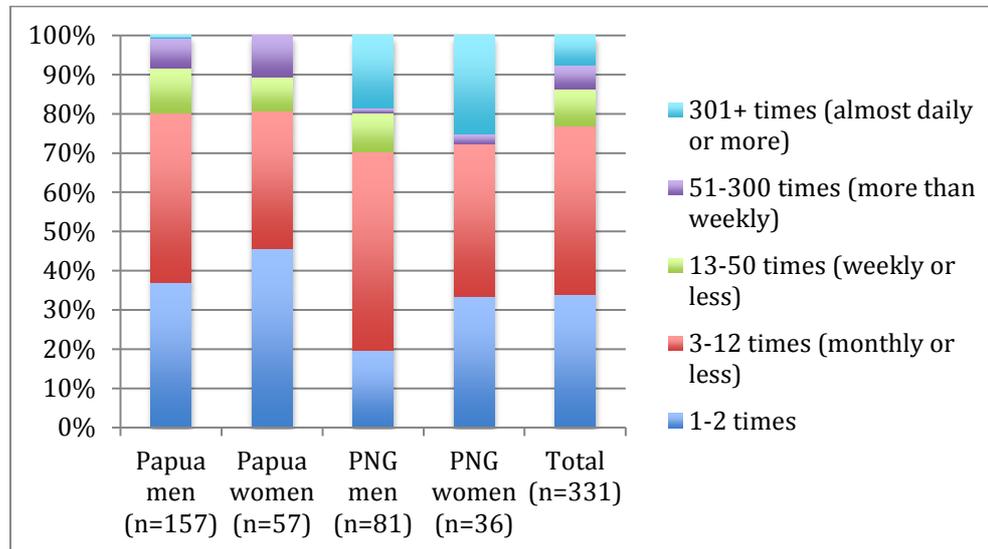


Figure 6: Number of trips taken across the border in last 12 months, by country and gender

Length of trips

This question referred only to the current trip that the respondents were returning from and asked how many days they had spent away from home. Almost 60% of the total sample had made a very short trip of 1 day or less. Approximately one quarter of the women and one third of the men had made trips of more than one day and up to one week in length. Trips longer than a week were much less common. No significant differences were found between the countries in the length of time they spent across the border, $\chi^2(2) = 5.34, p = 0.69$. Figure 7 shows length of stay across the border, by country and gender.

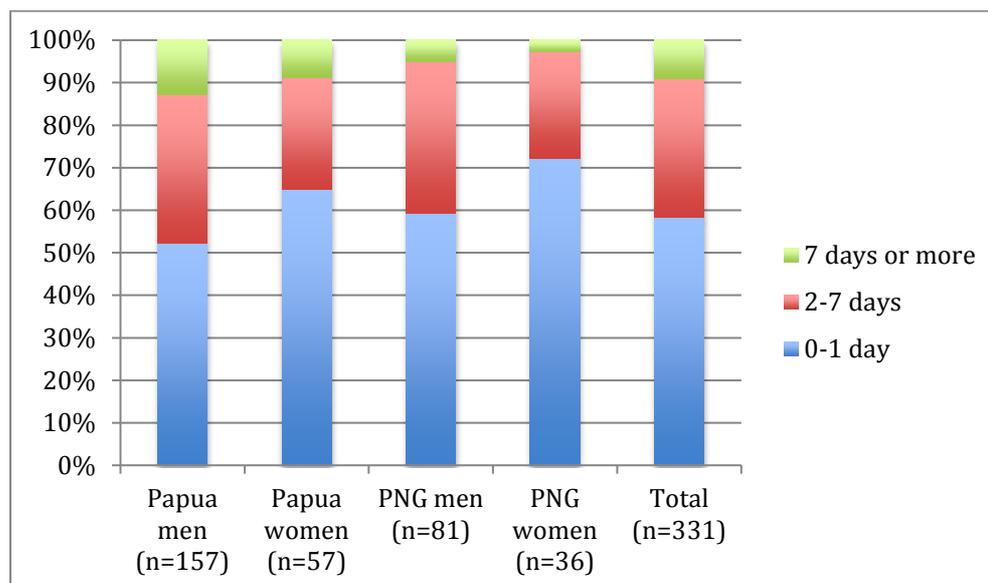


Figure 7: Length of most recent trip across the border in days, by country and gender

Travelling companions

The most common travelling companion on this most recent trip was a family member, particularly amongst those from PNG. Just under one third of respondents from both countries travelled alone (Table 2).

Table 2: Type of travelling companion, by country*

Type of travelling companion	Papua n = 214 (%)	PNG n = 117 (%)	Total N = 331 (%)
Family members	70 (33%)	51 (44%)	121 (37%)
Travelled alone	57 (27%)	30 (26%)	87 (26%)
Friends	50 (23%)	14 (12%)	64 (19%)
Colleagues	45 (21%)	17 (15%)	62 (19%)
Spouse or girlfriend/boyfriend	41 (19%)	13 (11%)	54 (16%)
Other	8 (4%)	3 (3%)	11 (3%)

*Respondents could select as many types of companions as applicable

Activities undertaken across the border

Considering only this most recent trip, respondents stated which activities they had undertaken whilst across the border. Amongst the Papuans, visiting family and attending events were the most popular activities, although shopping was also cited by one third of the sample. Shopping was by far the most common activity undertaken by the people from PNG. Potentially 'risky' activities like having sex or buying drugs were not commonly reported activities (Table 3).

Table 3: Activities across the border on this current trip, by country*

Activity	Papua n = 214 (%)	PNG n = 117 (%)	Total N = 331 (%)
Went shopping	71 (33%)	93 (79%)	164 (50%)
Visited family	100 (47%)	12 (10%)	112 (34%)
Attended an event/funeral	74 (35%)	3 (3%)	77 (23%)
Working	34 (16%)	8 (7%)	42 (13%)
Sold goods	29 (14%)	5 (4%)	34 (10%)
Recreation activities/Had sex	16 (7%)	5 (4%)	21 (6%)
Farming/hunting/fishing	14 (7%)	4 (3%)	18 (5%)
Attending school	1 (<1%)	12 (10%)	13 (4%)
Other	5 (2%)	9 (8%)	14 (4%)
Buying drugs or pornographic material	0 (0%)	4 (3%)	4 (1%)

*Respondents could select as many activities as applicable

Main reason for the trip

Respondents selected the one main reason for which they had made this current trip across the border. Major differences were not seen between the genders within each country, but differences between the countries were significant, $\chi^2(7) = 104.06, p = .00$. In the Papuan sample, the main reason for travelling was to visit family members (36%), whereas amongst those from PNG the main reason was to shop, cited by 69% as their main reason for travel. Recreation activities were rarely the main reason for cross-border travel (Figures 8a and 8b).

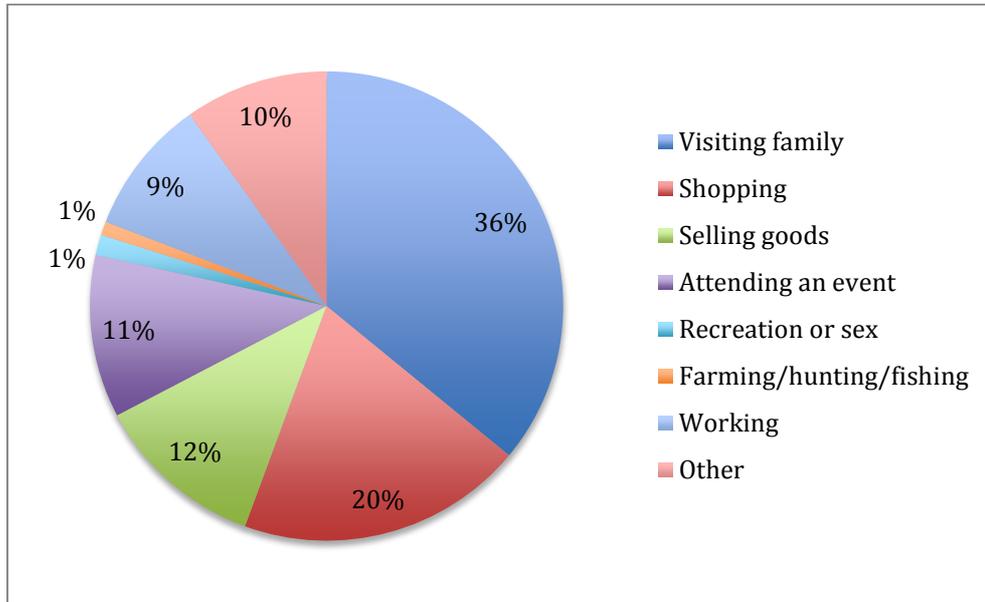


Figure 8a: Main reason for the most recent cross-border trip, Papua (n = 214)

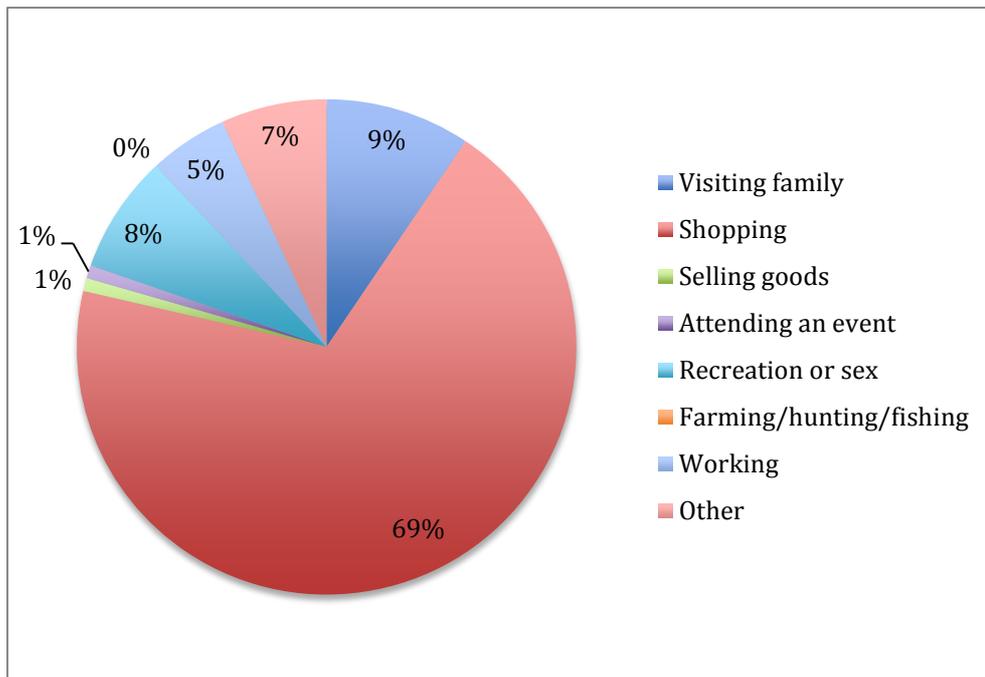


Figure 8b: Main reason for the most recent cross-border trip, PNG (n = 117)

Section C. Male condom

Awareness and use of male condoms

People from PNG were more likely to have seen and used male condoms than people from Papua. Significant differences were observed between the two countries both in having ever seen a condom, $\chi^2(1) = 7.34, p = .01$, and having ever used a condom, $\chi^2(1) = 14.13, p = .00$. PNG men showed the most awareness and use of condoms and Papuan females the least (Figure 9).

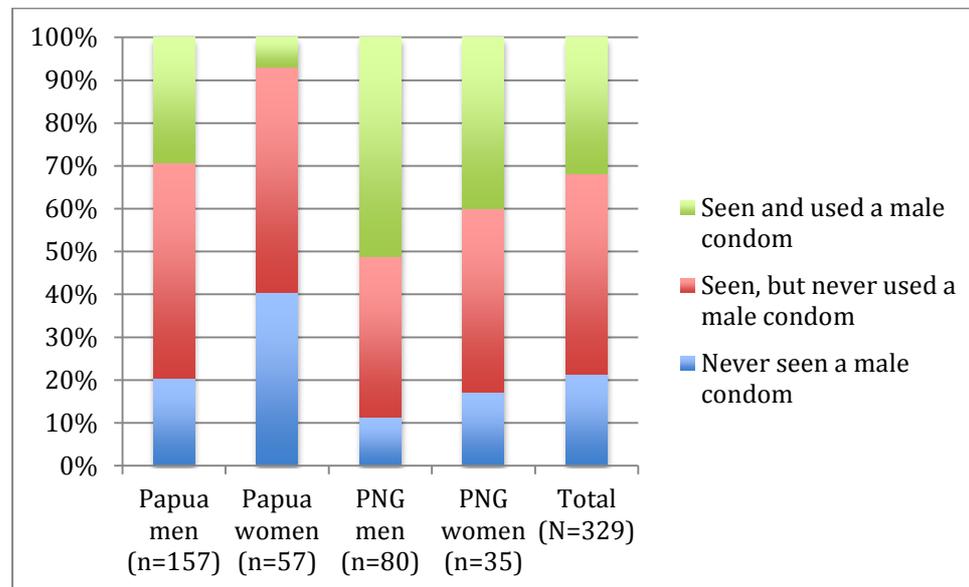


Figure 9: Awareness and use of male condoms, by country and gender

Knowledge of where to obtain male condoms

More men from PNG than men from Papua knew where to obtain condoms – 81% and 56% respectively. The same trend was observed amongst the women, where 64% of women from PNG knew where to get condoms compared with 23% of the women from Papua. This difference was statistically different between countries, $\chi^2(1) = 24.18, p = .00$.

Places to obtain male condoms

Respondents were asked to state where they had obtained condoms in the last 12 months. Amongst Papuans, the pharmacy was the most common place to obtain condoms followed by health clinics. In the PNG sample, most people obtained condoms from a health clinic. A sizeable portion of the sample, approximately one-fifth, obtained their condoms from another, unspecified venue (Table 4).

Ability to obtain male condoms consistently

Respondents were asked if they were able to obtain condoms every time they wanted them. The responses followed a similar pattern to knowledge of condoms/places to obtain condoms and showed a difference between countries. People from PNG were more likely to be able to obtain condoms every time they wanted them – stated by 71% of PNG men and 57% of PNG women. Conversely, just 33% of men from Papua and 15% of Papuan women stated they could always obtain condoms.

Table 4: Venues where male condoms were obtained in the last 12 months, by country*

Places to obtain condoms	Papua n = 94 (%)	PNG n = 88 (%)	Total N = 182 (%)
Health clinic	34 (36%)	39 (44%)	73 (40%)
Pharmacy	46 (49%)	15 (17%)	61 (34%)
Other (not specified)	17 (18%)	21 (24%)	38 (21%)
Supermarket/street store/ Community-based distributor	4 (4%)	23 (26%)	27 (15%)
Friends	8 (9%)	14 (16%)	22 (12%)
NGO/Peer educator	11 (12%)	5 (6%)	16 (9%)
Have not obtained condoms	8 (9%)	8 (9%)	16 (9%)
Bar/nightclub	5 (5%)	5 (6%)	10 (5%)

*Respondents could select as many options as applicable

Reasons for not being able to obtain male condoms

Amongst those participants who reported not being able to obtain condoms every time they wanted, lack of availability was cited as a reason why by people in both countries. However, the most common reason for not being able to obtain condoms was 'other' - an unspecified reason. This could suggest an area for investigation considering that 74% of the Papuans and 67% of those from PNG who answered chose this option. Cost and risk are not perceived as common issues in preventing male condoms being obtained (Table 5).

Table 5: Reasons for not being able to obtain condoms every time they are wanted, by country*

Reasons condoms not obtained	Papua n = 69 (%)	PNG n = 27 (%)	Total N = 96 (%)
Condoms not always available	13 (19%)	6 (22%)	19 (20%)
Condoms are too expensive	1 (1%)	0 (0%)	1 (1%)
Too far to travel to obtain	3 (4%)	2 (7%)	5 (5%)
It is too risky to carry condoms	1 (1%)	2 (7%)	3 (3%)
Other (not specified)	51 (74%)	18 (67%)	69 (72%)

*Respondents could select as many options as applicable

Use of lubricant during anal sex

These questions asked about use and availability of lubricants for anal sex. Very few people had used lubricants (17 from Papua and 15 from PNG). In fitting with previous findings, the people from PNG who answered were more likely to know where to obtain lubricants and to be able to obtain them consistently in comparison with their Papuan counterparts.

Section D. Circumcision, penile injections and tattoos

Circumcision

There were 102 of the 238 men in the study who reported being circumcised, and there was a significant difference between the countries, $\chi^2(1) = 13.49, p = .00$, with 59% of men from PNG being circumcised compared with 34% of the men from Papua.

Age at circumcision was also different. In Papua, the mean age was 10.3 years (SD 3.30), 95% CIs [9.4, 11.2], whereas in PNG the mean age was much older at 16.3 years (SD 4.93), 95% CIs [14.8, 17.7]. There was a significant difference between these ages, $t(98) = -7.19, p = .00$.

Types of cut

Round/mushroom cuts were most popular in Papua, whereas in PNG a straight cut was most common. Much smaller numbers of other types of cut were mentioned. Figures 10a and 10b show the types of cut by country.

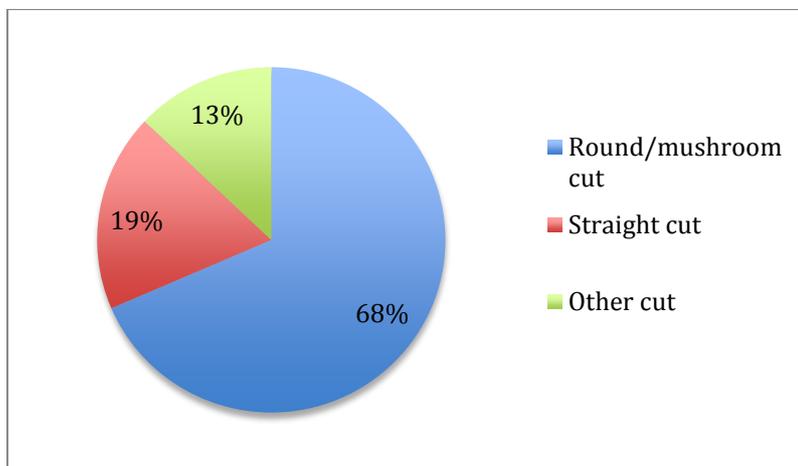


Figure 10a: Circumcision cut type, Papua (n = 54)

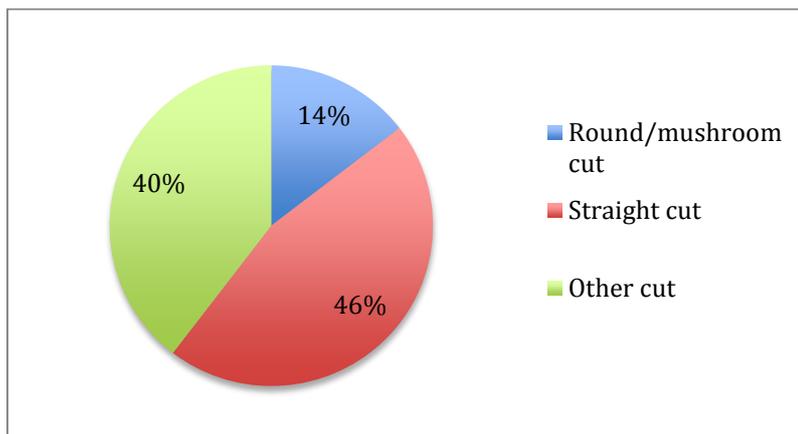


Figure 10b: Circumcision cut type, PNG (n = 48)

Place of circumcision

Place of circumcision also varied by country. Amongst Papuans, hospital was the most common place to be circumcised, with someone's home also a popular venue. In PNG most circumcised men were cut outside, in the bush or near a body of water (Figure 11).

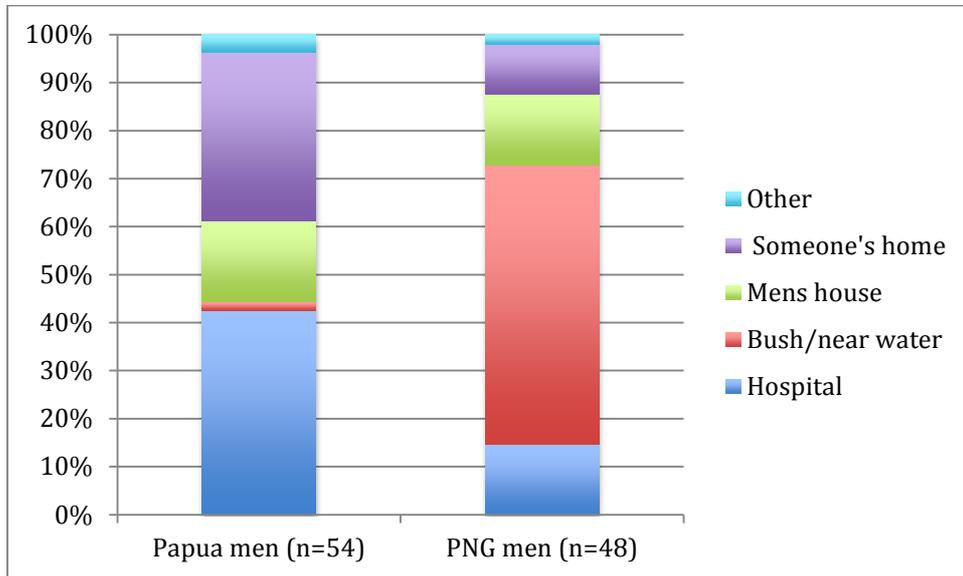


Figure 11: Place of circumcision, by country

Person performing the circumcision

Amongst the men from Papua, almost three-quarters of circumcisions were performed by a doctor or other health care professional. With men from PNG, most were performed by friends or traditional cutters (Figure 12).

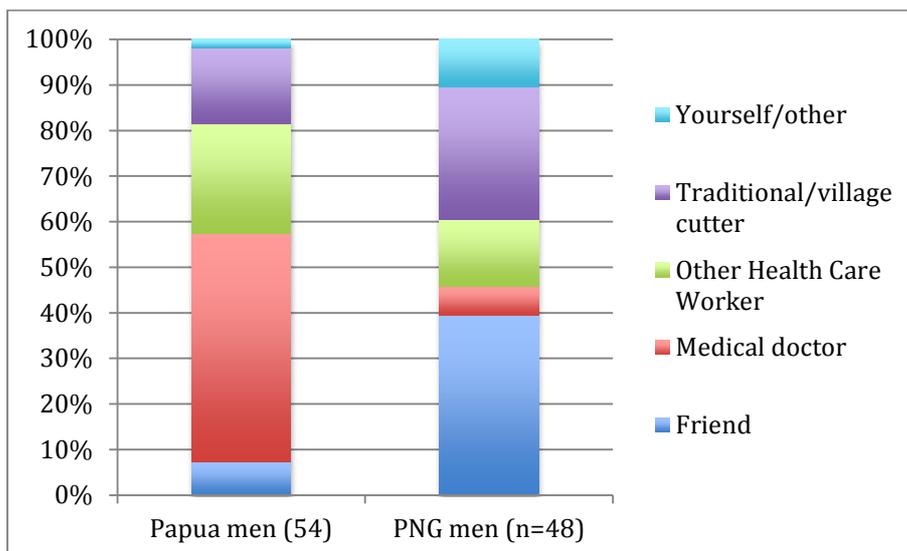


Figure 12: Type of person performing circumcision, by country

Reasons for circumcision

Most of the Papuan men who were circumcised cited their religion of Islam as the reason for their circumcision. In PNG the reasons were much more varied, from cleanliness and disease prevention to the enhancement of sexual pleasure. The main reason in PNG was to 'get rid of mothers' bad blood'. Table 6 shows the different reasons for circumcision, by country.

Table 6: Reasons for circumcision, by country*

Reason for circumcision	Papua n = 54 (%)	PNG n = 48 (%)	Total N = 102 (%)
Religion	36 (67%)	0 (0%)	36 (35%)
Keep penis clean	16 (30%)	17 (35%)	33 (32%)
Prevent STIs/HIV	7 (13%)	17 (35%)	24 (24%)
Get rid of mothers' bad blood	1 (2%)	22 (46%)	23 (23%)
Grow healthy and strong	5 (9%)	15 (31%)	20 (20%)
Sexual pleasure (for man or partner)	1 (2%)	18 (38%)	19 (19%)
Traditional initiation	4 (7%)	9 (19%)	13 (13%)
Peer influence/other	2 (4%)	8 (17%)	10 (10%)

*Respondents could select as many reasons as applicable

Penis injections and sex product use

Respondents were asked if they had ever injected their penis with a substance. Only 15 people had, 10 from PNG and 5 from Papua, representing 12% of PNG men and 3% of Papuan men. People had used 'King Cobra' and other substances to inject their penises and the main reason for doing so was to enlarge or harden the penis.

Sex product use was more common but still relatively rare amongst this group. There were 11 (7%) Papuan men and 23 (28%) men from PNG who had used a sex product. King Cobra tablets/oil was the most popular product, used by 20 men, while other products were used much less frequently. Only three people from Papua had bought sex products across the border, a similar number to those who bought them at home. Conversely, 16 of the 23 men from PNG had bought sex products across the border compared to just 2 at home. None of the women reported buying sex products.

Tattoos

There were 79 people who stated they had a tattoo. Tattoos were much more common amongst people from PNG, of whom almost half had a tattoo, compared to just 10% of Papuans, with this difference being statistically significant, $\chi^2(1) = 57.35, p = .00$. Within the countries, there was no difference between genders. In PNG, the most common way of making the tattoo was by injection, used by 38 (68%) of the sample. In Papua, the methods were more varied, with no particular tool being obviously more popular - tools included thorns, needles and guitar strings. Sharing of equipment was not at all common; only 10% of people in each country stated that they had been tattooed with equipment that had been used previously on someone else.

Section E. Alcohol and drug use

Alcohol use

Respondents were asked if they had consumed any alcohol over the previous twelve months and if so, to detail their usage over the last month.

Alcohol consumption (including home brew) was more prominent in people from PNG compared to those from Papua. About 83% of men and 67% of women from PNG had consumed alcohol in the last twelve months compared with 53% of men and 12% of women from Papua. This difference between countries was statistically significant, $\chi^2(1) = 13.75, p = .00$. Those who had drunk alcohol (N = 178) also elaborated on the frequency of their consumption (Figure 13).

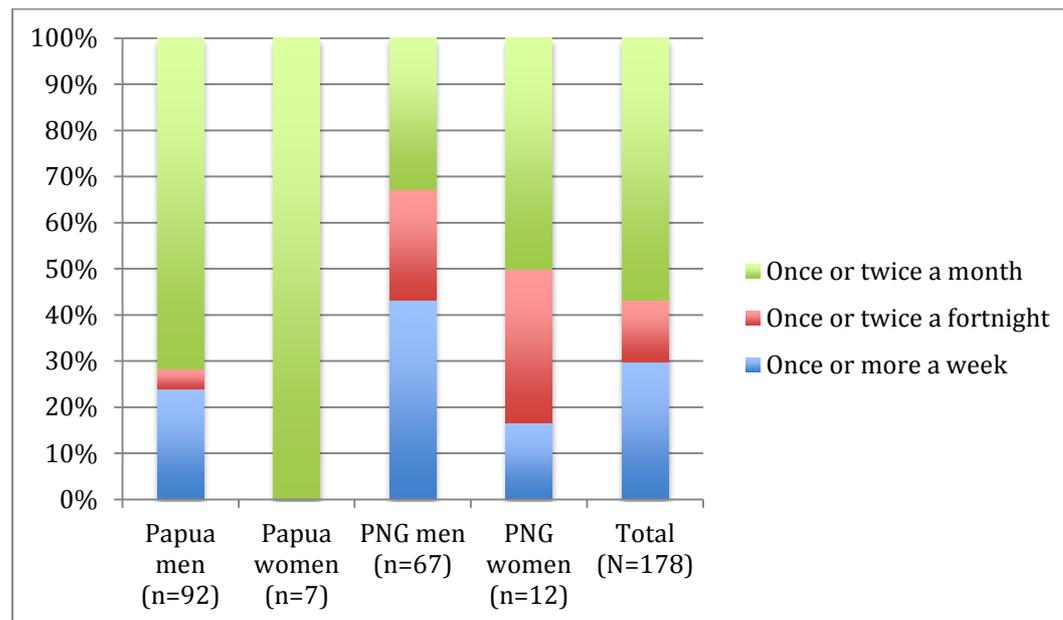


Figure 13: Frequency of alcoholic drink consumption over the last month, by country & gender

Alcohol across the border

Although 178 people had consumed alcohol in the past month, very few had consumed any on this trip across the border, just 43 in total. This included 14 men from Papua (15%), 27 men from PNG (40%) and 2 women from PNG (17%). No women from Papua drank alcohol on the current cross-border trip. An even smaller proportion reported drinking more across the border than they would at home, just 7 Papuan men and 10 men from PNG made this claim.

Alcohol preventing condom use

Of the 178 people who had consumed alcohol in the last 12 months, 46 had been too drunk to use a condom at some point. This was more common in PNG where, of those who had alcohol in the last year, 28 (40%) men and 4 (33%) women reported not using a condom due to being too drunk, while for the Papuan sample these figures were just 14 (15%) and 0 (0%) respectively. More than 70% of people who had been too drunk to use condoms were in their home countries on that occasion and this was similar across both PNG and Papua.

Drug use

Respondents were asked to indicate if they had ever taken any non-medical drugs, to which 21 men (12 from PNG, 9 from Papua) stated that they had, representing 6% of the total sample. Marijuana was the most commonly used drug, used by 14 people. Injecting drug use was lower again with just 3 people

indicating that they had injected drugs or other substances. Only four of the people who used drugs reported being too stoned to use a condom in the past 12 months and this was in their home countries.

Section F. Sex across the border

Sex across the border

Participants were asked if they had had sex on this current trip across the border from which they were returning. Only 40 participants had, including just one female. This female engaged in vaginal and oral sex with two regular partners only. Fifteen Papuan men (10%) and 24 PNG men (30%) had sex across the border. The remainder of this section refers only to these 39 men.

Types of sexual activities

Vaginal intercourse was the most popular activity and was undertaken by most of the 39 participants. More than one third had oral sex with a woman. Men having sex with men rarely occurred and no anal intercourse between two men was reported (Table 7).

Table 7: Types of sexual activity undertaken across the border (men only)*

Activity	Papua n = 15 (%)	PNG n = 24 (%)	Total N = 39 (%)
Vaginal intercourse	13 (87%)	20 (83%)	33 (85%)
Oral sex (woman sucked my penis)	4 (27%)	11 (46%)	15 (38%)
Anal intercourse (with a woman)	0 (0%)	8 (33%)	8 (21%)
Oral sex (I licked a woman's vagina)	0 (0%)	4 (17%)	4 (10%)
Oral sex (I sucked a penis)	1 (7%)	1 (4%)	2 (5%)
Other	1 (7%)	1 (4%)	2 (5%)
Oral sex (man sucked my penis)	0 (0%)	1 (4%)	1 (3%)
Anal intercourse (with a man)	0 (0%)	0 (0%)	0 (0%)

*Respondents could select as many activities as applicable

Type and number partner (s) for all types of sexual activities

Participants were asked to indicate the types of partners with whom they had any kind of sexual activity on this current cross-border trip. They could select from regular, casual and commercial partners. The majority of men reported having sex with women only. Only two men (one from each country) reported sex with both men and women whilst across the border. Most of the men from Papua had sex with regular partners whilst across the border although almost a third also had commercial sex. The men from PNG mainly had sex with commercial partners across the border but also had regular and casual partners (Table 8).

Table 8: Types and numbers of partners for all types of sexual activities, by country (men only)*

Partner type	Papua n = 15 (%)	PNG n = 23 (%)	Total N = 38 (%)
Regular	12 (80%)	8 (35%)	20 (53%)
Casual	1 (7%)	9 (39%)	10 (26%)
Commercial	4 (27%)	11 (48%)	15 (39%)

*Respondents could choose as many types of partners as applicable.

Approximately 70% of men from Papua had sex with just one partner on their cross-border trip. Conversely, 70% of the men from PNG had more than one partner on this trip, with 40% reported having 3 or more partners (Figure 14).

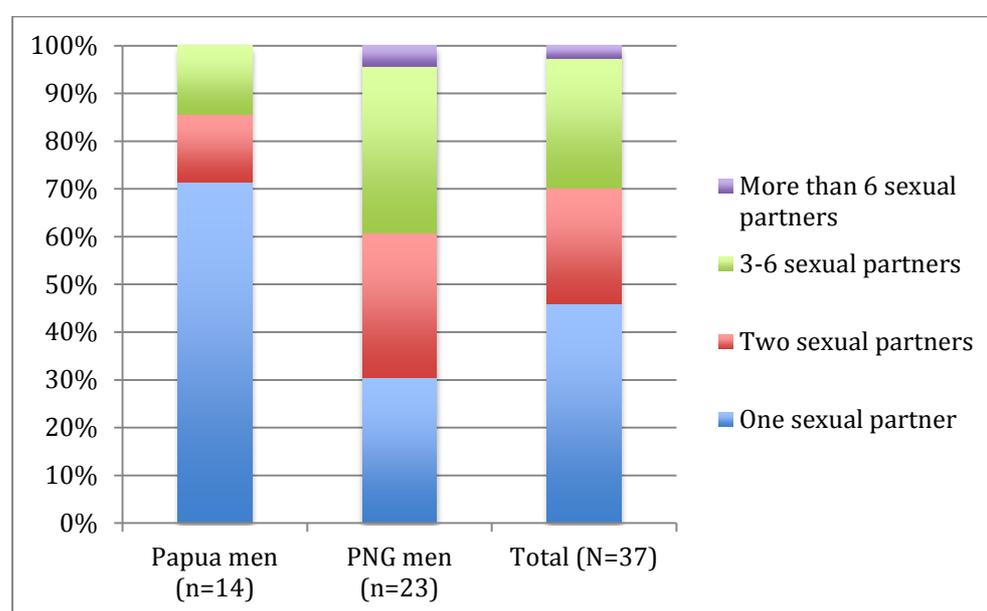


Figure 14: Number of sexual partners during this trip, by country

Types of partners for penetrative sexual intercourse

Participants were asked to indicate the types of female partners with whom they had penetrative sexual intercourse (either vaginal or anal) while across the border - regular, casual or commercial partners. Amongst Papuan men, more than 70% had regular partners only but the picture is much more varied amongst men from PNG, the majority of whom were engaging in casual and commercial sex in addition to sex with regular partners (Figure 15). Numbers of partners were very varied amongst this small portion of the sample. Hence, Table 9 shows the number of people who engaged in intercourse with just one regular partner (i.e. a relatively safe-sex context provided fidelity is maintained) compared with those who had intercourse with multiple, casual or commercial partners as this represents a more risky type of sexual intercourse for HIV transmission if condoms are not always used.

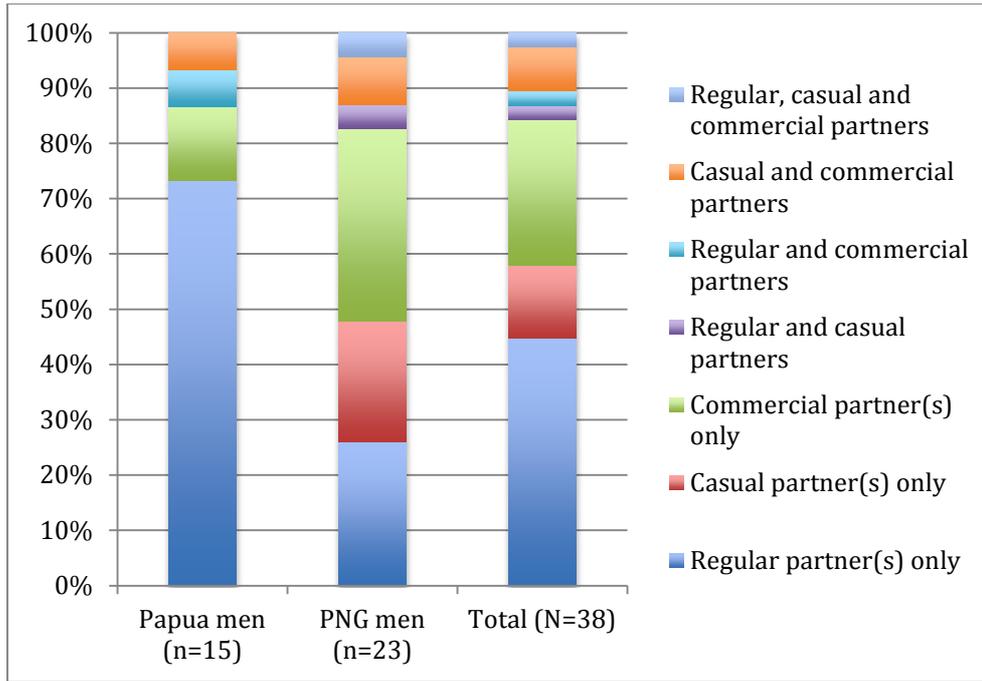


Figure 15: Types of female partners across the border, by country

Table 9: Types of sexual partnerships among men who had sex across the border

Type of sexual partnership	Papua men n = 15 (%)	PNG men n = 23 (%)	Total N = 38 (%)
One regular partner only	9 (60%)	4 (17%)	13 (34%)
Multiple and/or casual and/or commercial partner (s)	6 (40%)	19 (83%)	25 (66%)

Condom use at last sexual intercourse with a female partner

The 39 men who reported sex across the border were asked to indicate if they had used a condom the last time they had vaginal or anal penetrative sex with a variety of partner types (regular, casual and commercial). Denominators are different for each permutation as not everyone had every type of sex with every type of partner. Due to the low number of responses, it is difficult to draw conclusions, however it appears that condom use is low with regular partners yet increasingly adopted amongst casual and commercial partners, which makes epidemiological sense. Of those who had vaginal sex with regular, casual or commercial partners, the proportions who used a condom at this last encounter were 27%, 44% and 79% respectively. Condom use was lower for episodes of anal intercourse.

Reasons for not using condoms with female partners

No anal intercourse between men was reported by the 39 men in this section, hence only reasons for lack of condom use with female partners are explored. The most common reason for not using condoms was the perceived faithfulness of the partner. Not thinking of it or not thinking it necessary were other common reasons. Dislike of condoms and their detrimental effect on pleasure was also cited by a number of respondents. Reasons for not using condoms when having sex across the border are shown in Table 10.

Table 10: Reasons for not using condoms with female partners across the border (men only)*

Reason for not using condoms	Papua n = 13 (%)	PNG n = 20 (%)	Total N = 33 (%)
Partner was faithful	4 (31%)	5 (25%)	9 (27%)
Didn't think of it	3 (23%)	4 (20%)	7 (21%)
Don't like them	3 (23%)	4 (20%)	7 (21%)
Didn't think it necessary	4 (31%)	2 (10%)	6 (18%)
Condoms take away pleasure	1 (8%)	5 (25%)	6 (18%)
Other (not specified)	0 (0%)	5 (25%)	5 (15%)
Not available	0 (0%)	4 (20%)	4 (12%)
Partner objected	0 (0%)	2 (10%)	2 (6%)
Never heard of them	1 (8%)	0 (0%)	1 (3%)
Didn't know how to obtain	1 (8%)	0 (0%)	1 (3%)
Used other methods	0 (0%)	0 (0%)	0 (0%)
Too expensive	0 (0%)	0 (0%)	0 (0%)

*Respondents could select as many reasons as applicable

Section G. Sex in home country

Sex in home country

Overall, 211 people (64%) reported having sex in the last 12 months in their home country. The proportion was highest amongst men from PNG and lowest amongst women from Papua, but there was no statistical difference between countries, $\chi^2(1) = 2.36, p = .13$ (Figure 16).

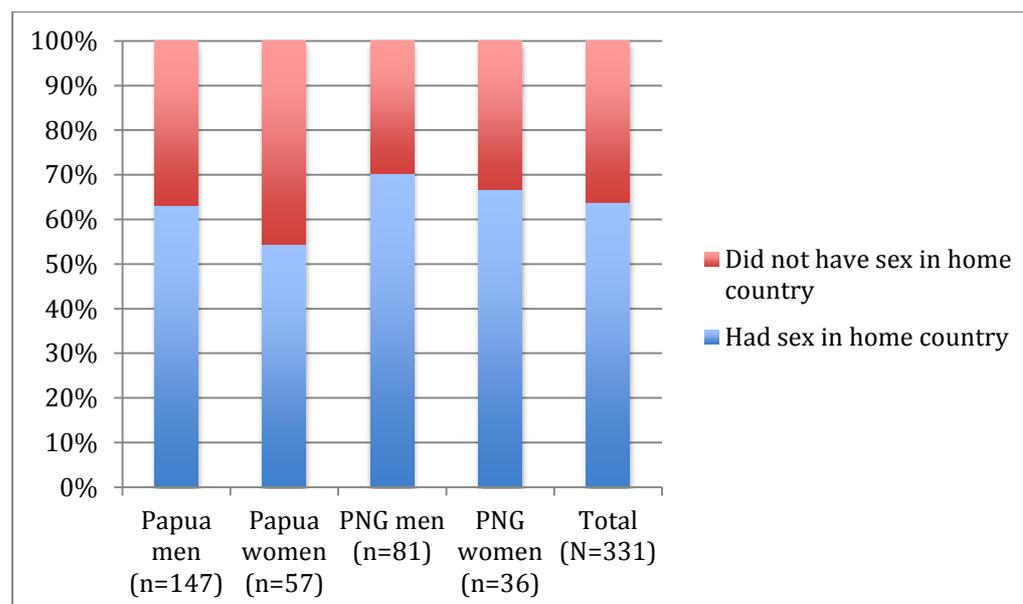


Figure 16: Sex in home country in last 12 months, by country and gender

Types of sexual activity

Vaginal intercourse was by far the most common activity, practised by 88% of the participants. People from PNG practised more oral sex than those from Papua. Virtually no homosexual activities were reported – only one man reported oral sex with a man and no men reported anal intercourse with other men. Similarly, no women reported sex with other women. Tables 11 and 12 below detail the different types of sexual activities undertaken by men and women in both countries.

Table 11: Types of sexual activity in home country in last 12 months (men)*

Activity	Papua n = 99 (%)	PNG n = 57 (%)	Total N = 156 (%)
Vaginal intercourse	90 (90%)	49 (86%)	139 (89%)
Oral sex (woman sucked my penis)	9 (9%)	22 (39%)	31 (20%)
Oral sex (licked woman's vagina)	2 (2%)	4 (7%)	6 (4%)
Anal intercourse (with woman)	4 (4%)	8 (14%)	12 (8%)
Oral sex (with a man)	1 (1%)	0 (0%)	1 (<1%)
Anal intercourse (with man)	0 (0%)	0 (0%)	0 (0%)
Other (not specified)	3 (3%)	1 (2%)	4 (3%)

*Respondents could select as many activities as applicable

Table 12: Types of sexual activity in home country in last 12 months (women)*

Activity	Papua n = 31 (%)	PNG n = 24 (%)	Total N = 55 (%)
Vaginal intercourse	24 (77%)	23 (96%)	47 (85%)
Anal intercourse	4 (13%)	3 (13%)	7 (13%)
Oral sex (man licked my vagina)	1 (3%)	5 (21%)	6 (11%)
Oral sex (sucked a penis)	1 (3%)	4 (17%)	5 (9%)
Oral sex (with a woman)	0 (0%)	0 (0%)	0 (0%)
Other (not specified)	1 (3%)	0 (0%)	1 (2%)

*Respondents could select as many activities as applicable

Types and number of partner (s) for all types of sexual activity

Participants were asked to indicate the types of partners with whom they had any kind of sexual activity over the last 12 months. They could select from regular, casual or commercial partners. Table 13 displays the types of partner by country and gender, which shows that a large majority of people (91%) were having sex with regular partners. Sex with casual partners and commercial partners was not common at all.

Table 13: Types of partners for all types of sexual activity, by country and gender*

Partner type	Papua men n = 99 (%)	Papua women n = 31 (%)	PNG men n = 57 (%)	PNG women n = 24 (%)	Total N = 211 (%)
Regular	93 (94%)	31 (100%)	44 (77%)	24 (100%)	191 (91%)
Casual	10 (10%)	0 (0%)	16 (28%)	3 (13%)	29 (14%)
Commercial	9 (9%)	0 (0%)	5 (9%)	0 (0%)	14 (7%)

*Respondents could select as many types of partner as applicable

In their home countries over the preceding 12 months, most people were having sex with just one partner with multiple sexual partnerships much less common. The exception was the men from PNG of whom less than half had just one sexual partner and 14% had sex with more than six different partners. In addition, 13% of the women from PNG had two or more partners compared to none in Papua (Figure 17).

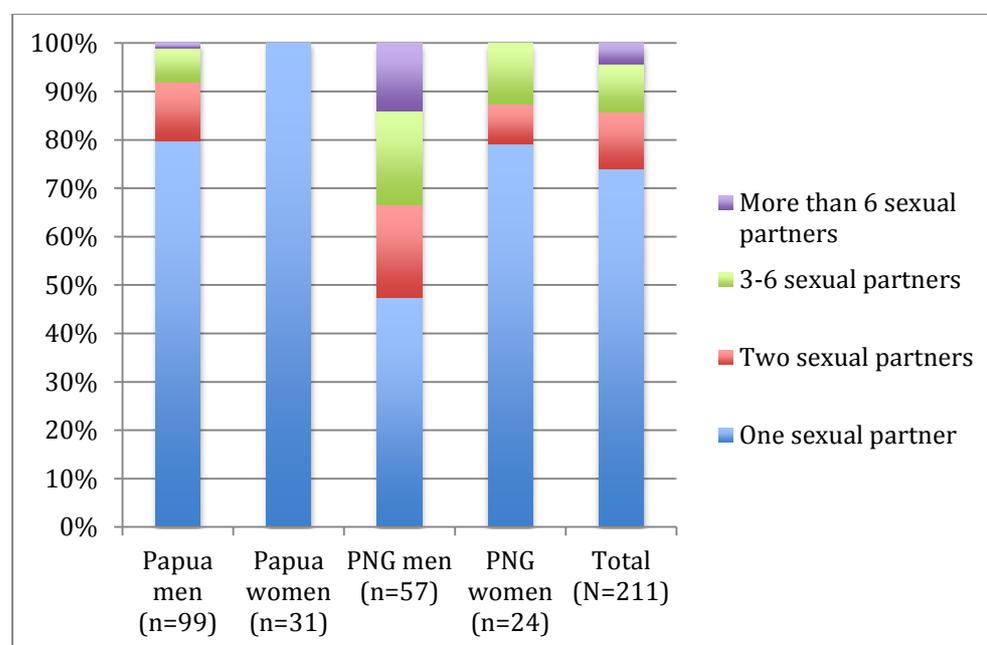


Figure 17: Number of sexual partners in the last 12 months, by country and gender

Types of partners for sexual intercourse

This section refers specifically to partners with whom the respondents had penetrative sexual intercourse (vaginal or anal) i.e. not all types of sexual activity as discussed previously. Figures 18 and 19 show different types of partners for men and women respectively. For men, it shows that more Papuan men than PNG men had sex with regular partner (s) only, although men from both countries had sex with a variety of partner types. For women the situation was very different, with almost all of the women having had penetrative sex with regular partners only. Note that the number of respondents in these analyses is reduced because not everyone who reported participating in sexual activities had penetrative sex.

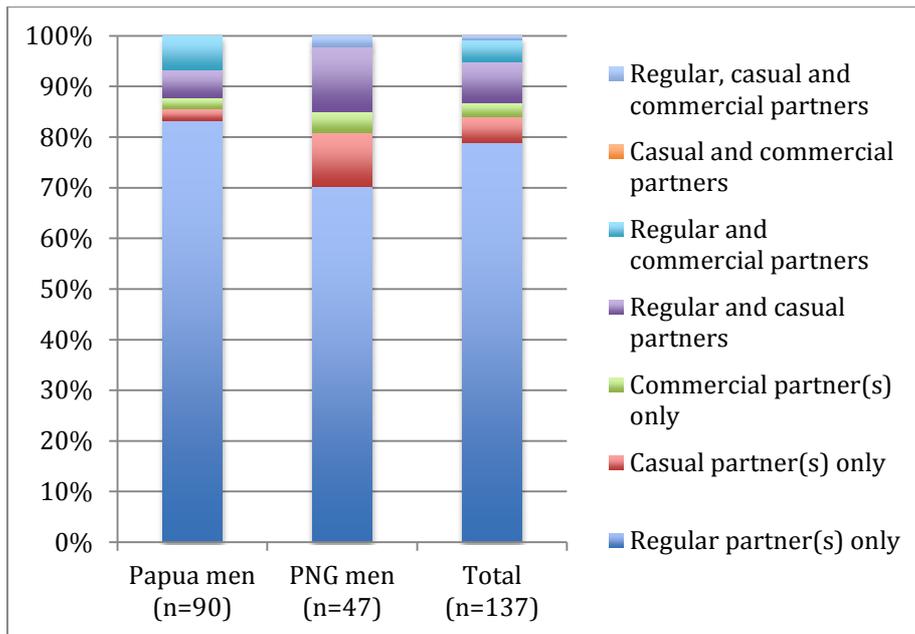


Figure 18: Types of female partners for penetrative sexual intercourse

Papuan men were more likely than PNG men to have one regular partner in their home country (Table 14). Due to the fact that most women were having sex with just one, regular partner, figures comparable to Table 14 for men are not shown.

Table 14: Types of sexual partnership in home country, by country (men only)

Type of sexual partnership	Papua men n = 90 (%)	PNG men n = 47 (%)	Total N = 137 (%)
One regular partner only	64 (71%)	23 (49%)	87 (64%)
Multiple and/or casual and/or commercial partner (s)	26 (29%)	24 (51%)	50 (36%)

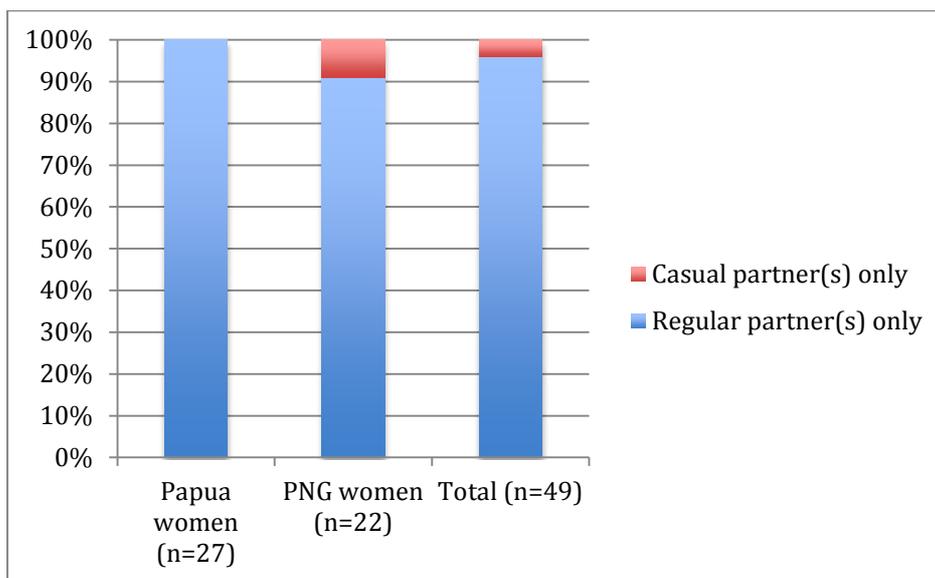


Figure 19: Types of male partners for penetrative sexual intercourse

Condom use at last sexual intercourse with a female partner

Respondents were asked to state if they had used a condom the last time they had vaginal or anal penetrative sex with a variety of partner types. The first set of tables (Table 15 to 20) show the numbers and percentages of people who used a condom with different types of female partners on the last occasion that they had sex, hence the respondents are men only. Denominators are different in each table because not everyone had every type of sex with every type of partner. In general the tables demonstrate little condom use with regular partners. Condom use was greater with casual partners and was highest, but by no means universal with commercial partners. Condom use with casual partners was higher amongst men from PNG compared to men from Papua, but the highest rates of condom use was amongst Papuan men who had anal intercourse with a commercial partner. However, the numbers having intercourse with casual and commercial partners were too small to draw clear conclusions.

Table 15: Condom use at last vaginal intercourse with a regular female partner

	Papua men n = 79 (%)	PNG men n = 41 (%)	Total n = 120 (%)
Used condom at last vaginal intercourse with a regular female partner	13 (16%)	6 (15%)	19 (16%)

Table 16: Condom use at last anal intercourse with a regular female partner

	Papua men n = 38 (%)	PNG men n = 23 (%)	Total n = 61 (%)
Used condom at last anal intercourse with a regular female partner	8 (21%)	1 (4%)	9 (15%)

Table 17: Condom use at last vaginal intercourse with a casual female partner

	Papua men n = 8 (%)	PNG men n = 13 (%)	Total n = 21 (%)
Used condom at last vaginal intercourse with a casual female partner	1 (13%)	8 (62%)	9 (43%)

Table 18: Condom use at last anal intercourse with a casual female partner

	Papua men n = 2 (%)	PNG men n = 8 (%)	Total n = 10 (%)
Used condom at last anal intercourse with a casual female partner	0 (0%)	3 (38%)	3 (30%)

Table 19: Condom use at last vaginal intercourse with a commercial female partner

	Papua men n = 7 (%)	PNG men n = 3 (%)	Total n = 10 (%)
Used condom at last vaginal intercourse with a commercial female partner	4 (57%)	2 (67%)	6 (60%)

Table 20: Condom use at last anal intercourse with a commercial female partner

	Papua men n = 6 (%)	PNG men n = 3 (%)	Total n = 9 (%)
Used condom at last anal intercourse with a commercial female partner	5 (83%)	2 (67%)	7 (78%)

Reasons for not using condoms with female partners

The most common reason for not using condoms was not considering it as necessary, closely followed by having a faithful partner (Table 21).

Table 21: Reasons for not using condoms with female partners, by country*

Reason for not using condoms	Papua men n = 85 (%)	PNG men n = 48 (%)	Total N = 133 (%)
Did not think it was necessary	40 (47%)	4 (8%)	44 (33%)
Partner was faithful	21 (25%)	17 (35%)	38 (29%)
Do not like condoms	19 (22%)	9 (19%)	28 (21%)
Other (unspecified) reasons	10 (12%)	12 (25%)	22 (17%)
Did not think of it	13 (15%)	4 (8%)	17 (13%)
Condoms take away pleasure	3 (4%)	8 (17%)	11 (8%)
Partner objected to using a condom	5 (6%)	5 (10%)	10 (8%)
Never heard of condoms	7 (8%)	2 (4%)	9 (7%)
Do not know how to obtain condoms	9 (11%)	0 (0%)	9 (7%)
Condoms not available	0 (0%)	5 (10%)	5 (4%)
Used other prevention methods	0 (0%)	2 (4%)	2 (1%)
Used other contraception	0 (0%)	1 (2%)	1 (<1%)
Condoms are too expensive	0 (0%)	0 (0%)	0 (0%)

*Respondents could select as many reasons as applicable

Condom use at last sexual intercourse with a male partner

No men reported penetrative intercourse with other men, hence this section refers only to women. Table 22 shows the number and percentage of women who used a condom at last vaginal intercourse with a regular male partner, and as expected, this frequency was very low (Table 22). Very few women were having anal intercourse or casual sex. Of the three women who reported vaginal intercourse with a casual partner, just one used a condom.

Table 22: Condom use at last vaginal intercourse with a regular male partner

	Papua women n = 22 (%)	PNG women n = 19 (%)	Total n = 41 (%)
Used a condom at last vaginal intercourse with a regular male partner	4 (18%)	1 (5%)	5 (12%)

Reasons for not using condoms with male partners

Similarly to the male respondents, the most common reason for women not using condoms was not considering it to be necessary, followed by having a faithful partner. Table 23 shows the reasons for not using condoms with male partners, by country.

Table 23: Reasons for not using condoms with male partners, by country*

Reasons for not using condoms	Papua women n = 22 (%)	PNG women n = 20 (%)	Total n = 42 (%)
Did not think it was necessary	15 (68%)	2 (10%)	17 (40%)
Partner was faithful	3 (14%)	7 (35%)	10 (24%)
Do not like condoms	2 (9%)	6 (30%)	8 (19%)
Partner objected to using condom	0 (0%)	5 (25%)	5 (12%)
Condoms take away pleasure	0 (0%)	5 (25%)	5 (12%)
Never heard of condoms	1 (5%)	3 (15%)	4 (10%)
Do not know how to obtain condoms	1 (5%)	2 (10%)	3 (7%)
Other (unspecified) reasons	0 (0%)	3 (15%)	3 (7%)
Did not think of it	1 (5%)	1 (5%)	2 (5%)
Condoms not available	0 (0%)	2 (10%)	2 (5%)
Used other contraception	0 (0%)	1 (5%)	1 (2%)
Used other prevention	0 (0%)	0 (0%)	0 (0%)
Condoms are too expensive	0 (0%)	0 (0%)	0 (0%)

*Respondents could select as many options as applicable

Section H. Forced sex

Respondents were asked if they had been forced to have sex in the last 12 months. This question was asked because non-consensual sex may incorporate increased risk of HIV transmission as one partner is unable to negotiate safe sex in any way. Of the total sample, 248 (75%) answered this question. Amongst the Papuans, 13% of men and 14% of women had been forced to have sex in the last 12 months. A slightly higher proportion was found in the men from PNG, of whom 22% stated they had been forced to have sex, 14% of PNG women also had this experience. There was no significant difference between countries, $\chi^2(1) = 0.42, p = .84$.

Section J. Sexually transmissible infections (STIs)

Awareness of STIs

People from PNG were more aware of STIs – 66% of people from PNG had heard of such diseases compared with 51% of people from Papua, and this difference was statistically significant, $\chi^2(1) = 7.36, p = .01$. There was no difference in awareness between the genders within each country. People who had not heard of STIs did not continue to answer the rest of the section.

Symptoms of STIs

Respondents selected which symptoms they believed indicative of STIs in men and women (Tables 24 and 25). Just five respondents correctly identified that all of the given options were potential symptoms of STIs for both men and women. Genital discharge was the most recognised STI symptom for both men and women. Papuans were more cognisant of itching as an STI symptom for both genders, whereas people from PNG gave more recognition to burning on urination and the presence of genital ulcers and sores. Anal pain was poorly recognised as a symptom. STI symptoms in men were recognised by a greater proportion than those in women, which is likely a reflection of the greater proportion of men in this sample.

Respondents were also asked if it is possible to have an STI without any symptoms. Amongst people from Papua, 25% were aware that STIs can be symptomless, which was higher amongst those from PNG for whom 63% were aware.

Table 24: Identified symptoms of STIs in women, by country*

Symptom	Papua n = 109 (%)	PNG n = 79 (%)	Total N = 188 (%)
Genital discharge	40 (37%)	43 (54%)	83 (44%)
Itching	50 (46%)	16 (20%)	66 (35%)
Abdominal pain	17 (16%)	28 (35%)	45 (24%)
Genital ulcers/sores	10 (9%)	32 (41%)	42 (22%)
Burning pain on urination	3 (3%)	37 (47%)	40 (21%)
Foul smelling discharge	14 (13%)	17 (22%)	31 (16%)
Swelling in groin area	9 (8%)	14 (18%)	23 (12%)
Pain in anus	1 (1%)	7 (9%)	8 (4%)

*Respondents could select as many options as applicable

Table 25: Identified symptoms of STIs in men, by country*

Symptoms	Papua n = 109 (%)	PNG n = 79 (%)	Total n = 188 (%)
Genital discharge	66 (61%)	45 (57%)	111 (59%)
Itching	49 (45%)	15 (19%)	64 (34%)
Burning pain on urination	12 (11%)	49 (62%)	61 (32%)
Genital ulcers/sores	19 (17%)	37 (47%)	56 (30%)
Swelling in groin area	10 (9%)	20 (25%)	30 (16%)
Pain in anus	2 (2%)	9 (11%)	11 (6%)

*Respondents could select as many options as applicable

Section K. Knowledge and attitudes about HIV

Awareness of HIV

Almost everyone in the sample including men and women had heard of HIV, an average of 96% for both countries. Participants also indicated from which sources they had learned about HIV. The most common sources of information were health services and television, with remarkably similar proportions from each country citing these sources (Table 26). People from PNG identified other sources of media including radio, newspapers/magazines and pamphlets, more often than respondents from Papua.

Table 26: Sources of information about HIV, by country*

Source of information about HIV	Papua n = 205 (%)	PNG n = 112 (%)	Total n = 317 (%)
Health services	119 (58%)	65 (58%)	184 (58%)
Television	91 (44%)	50 (45%)	141 (44%)
Radio	55 (27%)	66 (59%)	121 (38%)
Newspapers and magazines	65 (32%)	52 (46%)	117 (37%)
School	60 (29%)	45 (40%)	105 (33%)
Posters/billboards	62 (30%)	38 (34%)	100 (32%)
Friends/family	56 (27%)	35 (31%)	91 (29%)
Pamphlets	33 (16%)	40 (36%)	73 (23%)
NGOs	35 (17%)	33 (29%)	68 (21%)
Workplace	26 (13%)	22 (20%)	48 (15%)
Other sources (unspecified)	22 (11%)	18 (16%)	40 (13%)

*Respondents could select as many options as applicable

Figures 20a and 20b depict the one source of information from which respondents gained the most knowledge, shown by country. Health services and school were the two most important sources in both countries, accounting for half of the sample. Other sources of note included television amongst the Papuans and 'other sources' amongst those from PNG.

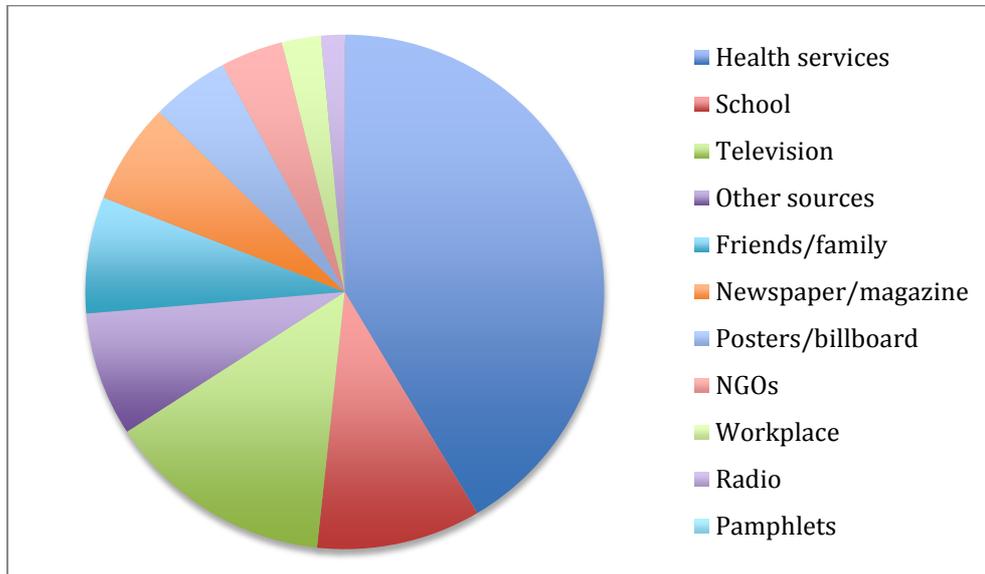


Figure 20a: Most important source of information on HIV, Papua (n = 205)

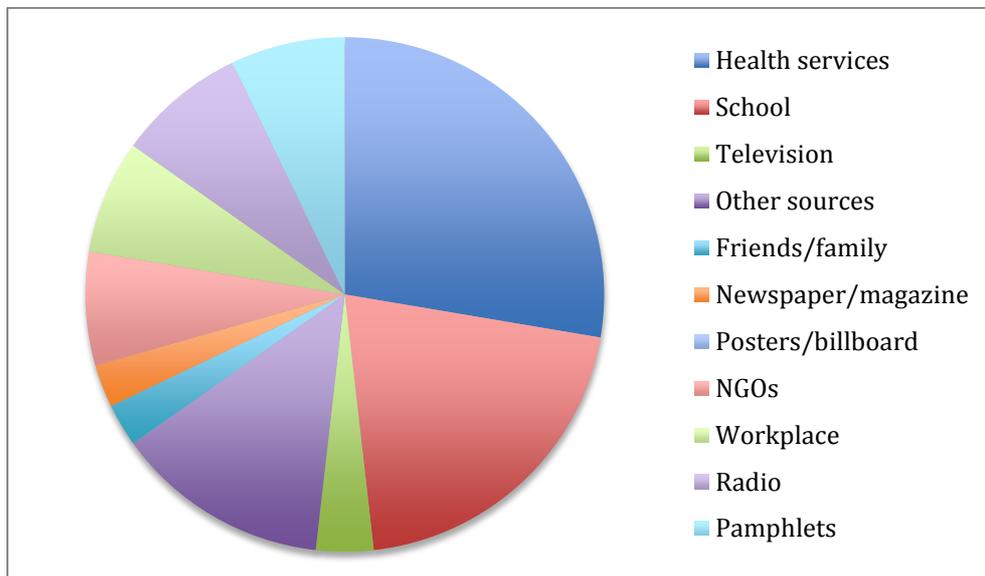


Figure 20b: Most important source of information on HIV, PNG (n = 112)

Proximity to HIV

With the exception of Papuan women, around half of the sample knew someone who was infected with or had died from HIV, and for just under a third this was someone close to them (Figure 21).

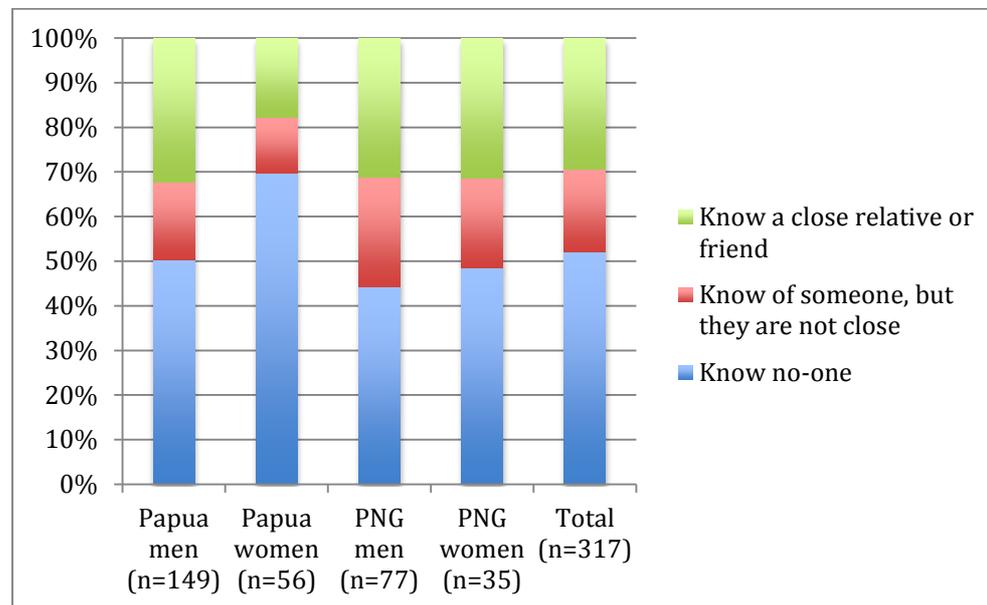


Figure 21: Knowing someone who is infected with or has died from HIV, by country and gender

Perceptions of HIV risk

Overall, 20% of the sample believed that they were at some risk of contracting HIV. However, there was a statistical difference in perceived risk between the two countries, $\chi^2(1) = 4.42, p = .04$. There were 20% of Papuan men and only 5% of Papuan women considered themselves to be at some risk, whereas in PNG these figures were higher, with 31% of men and 14% of women believing they were at some risk of contracting HIV. Not always using condoms and having multiple partners were the main reasons that people considered themselves to be at risk of HIV transmission. Most people cited having just one, faithful partner as the reason that they were not at risk of HIV (Tables 27 and 28).

Table 27: Reasons for being at some risk of contracting HIV, by country*

Reasons for being at some risk of contracting HIV	Papua n = 33 (%)	PNG n = 29 (%)	Total n = 62 (%)
Do not always use condoms	11 (33%)	16 (55%)	27 (44%)
Have had many partners	15 (45%)	9 (31%)	24 (39%)
Partner has other partners	5 (15%)	6 (21%)	11 (18%)
Blood transfusion/unsafe injection	4 (12%)	6 (21%)	10 (16%)
Have had contact with someone who has HIV	0 (0%)	4 (14%)	4 (6%)
Have had sex with someone who has HIV	0 (0%)	1 (3%)	1 (2%)
Used intravenous drugs	0 (0%)	0 (0%)	0 (0%)

*Respondents could select as many options as applicable

Table 28: Reasons for being at no risk of contracting HIV, by country*

Reasons for being at no risk of contracting HIV	Papua n = 172 (%)	PNG n = 83 (%)	Total n = 255 (%)
Have only one sexual partner	99 (58%)	43 (52%)	142 (56%)
Trust my partner	34 (20%)	36 (43%)	70 (27%)
Partner is faithful	38 (22%)	32 (39%)	70 (27%)
Not sexually active	35 (20%)	10 (12%)	45 (18%)
No contact with people who are infected with HIV	14 (8%)	12 (14%)	26 (10%)
Always use condoms	5 (3%)	15 (18%)	20 (8%)
Always use condoms with people I don't know well	4 (2%)	11 (13%)	15 (6%)
Only those with many partners are at risk	3 (2%)	4 (5%)	7 (3%)
Do not use intravenous drugs	4 (2%)	2 (2%)	6 (2%)
No blood transfusions/unsafe injections	3 (2%)	2 (2%)	5 (2%)

*Respondents could select as many options as applicable

Knowledge and attitudes about HIV

A variety of questions sought to determine the participants' knowledge regarding modes of HIV transmission (Figures 22 and 23). The question that was answered correctly by the most participants referred to HIV transmission through a used needle, with more than 80% of respondents in all groups getting this correct. In other areas, knowledge seemed to differ between countries with people from PNG being more aware of ways to protect themselves against sexual transmission of HIV. People from Papua, particularly Papuan women had greater knowledge in the areas of mother-to-child transmission and blood products. Fewer people were aware that there are medications that can be prescribed to treat HIV. The most notable difference in knowledge appeared when participants were asked if someone with HIV can be healthy looking, with 80% of people from PNG stating that they could, compared with less than 50% of Papuans. There were 31 respondents who correctly answered all of the knowledge questions, 16 (8%) from Papua and 15 (13%) from PNG.

In relation to attitudes about HIV, between 60-70% of respondents felt that children with HIV should still be allowed to attend school and indicated they would be willing to care for a relative with HIV (Figure 24). People from PNG were more likely to be willing to work with someone with HIV or buy food from them compared with people from Papua. There were 120 people who indicated having positive attitudes towards people with HIV on all four questions, 71 (35%) from Papua and 49 (44%) from PNG.

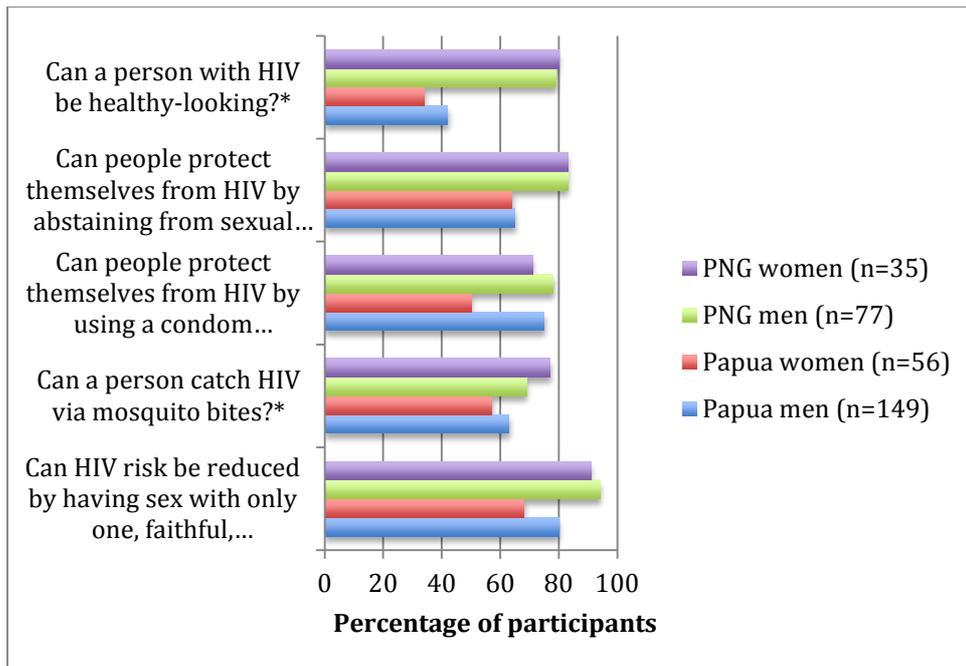


Figure 22: Percentage of participants correctly answering questions about HIV transmission, by country and gender

*GARPR indicators 2014

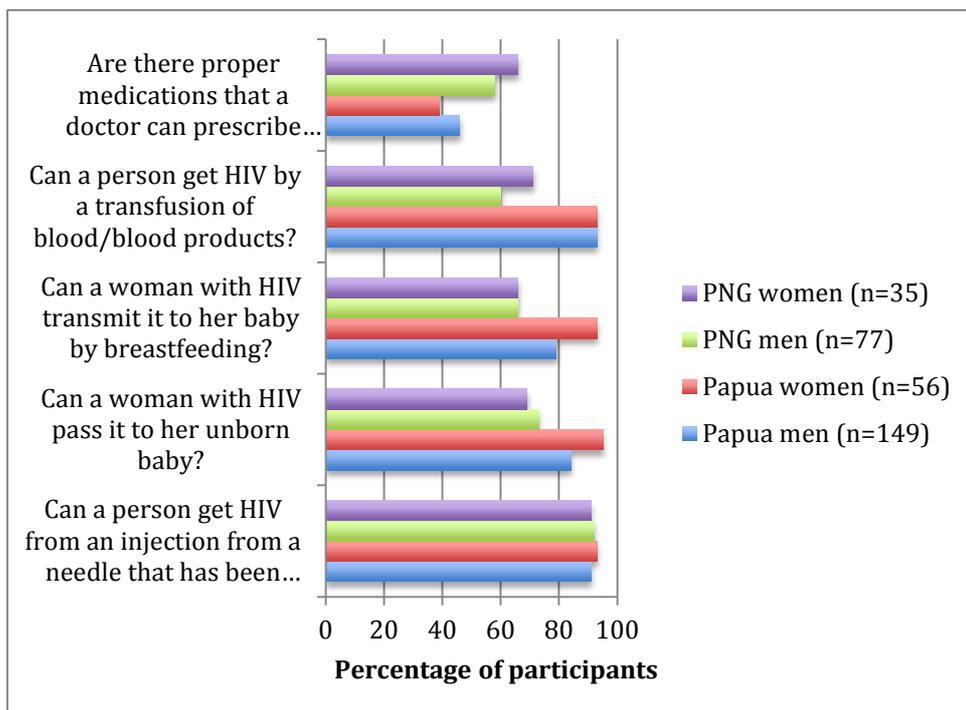


Figure 23: Percentage of participants correctly answering questions about HIV transmission, by country and gender

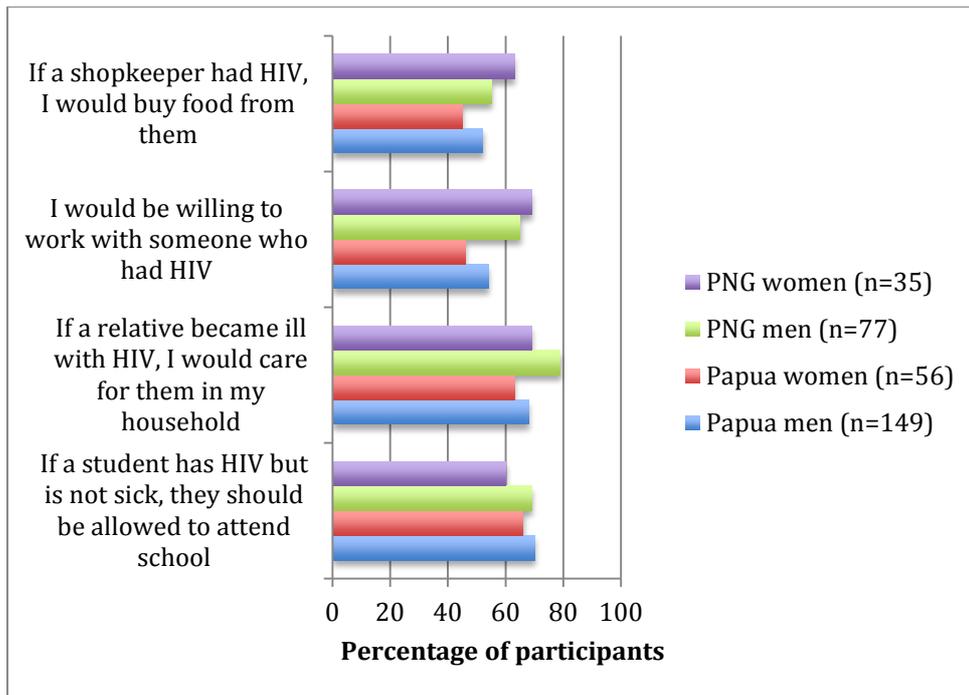


Figure 24: Percentage of participants indicating positive attitudes towards people living with HIV, by country and gender

GARPR indicators

Indicator 1.1

The UNAIDS GARPR (2014) indicator for knowledge about HIV transmission (Indicator 1.1) requires the correct answers to all five of the following questions:

1. Can the risk of HIV transmission be reduced by having sex with only one, faithful, uninfected partner?
2. Can people reduce the risk of HIV by using a condom every time they have sex?
3. Can a person with HIV be healthy-looking?
4. Can a person get HIV from mosquito bites?
5. Can a person get HIV by sharing food with someone who is infected?

(UNAIDS, 2014).

Questions 1, 2, 3 and 4 directly correspond to questions in the survey (marked with an asterisk). Question 5 is substituted with a similar statement from this survey 'If a shopkeeper had HIV, I would buy food from him'. The UNAIDS indicator is directed at 15-24 year olds but this data was analysed for respondents of all ages.

There were 14% of people from Papua who got all five correct (15% of men and 11% of women). All five were correctly answered by 29% of people from PNG (25% of men and 39% of women). Therefore, using this measure, women from PNG had the greatest level of knowledge about HIV transmission.

Indicator 1.3

Indicator 1.3 pertains to multiple sexual partnerships and is the percentage of those 15-49 who had more than one partner in the last 12 months (UNAIDS, 2014). The analysis reported here, however, will include respondents of all ages. Amongst people from Papua, 10% had more than one sexual partner in the preceding 12 months, and this was comprised of men only (13% of men and 0% of women). Having multiple partners was more common in the PNG sample, particularly amongst men – 33% of people from PNG had had more than one partner (42% of men and 14% of women). Proportionately more men from PNG were single than in any other group, which may explain this finding.

Indicator 1.5

Indicator 1.5 refers to the percentage of people 15-49 who received an HIV test in the last 12 months and knew their results. However this analysis includes respondents of all ages. Amongst people from Papua, 19 had been tested within the last 12 months and knew their results, representing 9% of the Papuan sample (8% of Papuan men and 11% of Papuan women). Testing was slightly higher amongst people from PNG, where 24 people had been recently tested and knew their results, equating to 21% of the PNG sample (19% of PNG men and 22% of PNG women).

Section L. Access to services

HIV testing

More than 70% of respondents to this section were aware that they could obtain a confidential test to find out their HIV status. There was no statistical difference between the countries, $\chi^2(1) = 0.81, p = .37$, however this awareness did differ somewhat between women from both countries, with 79% of women from PNG being aware compared to 63% of Papuan women. Amongst the aggregate of men from both countries, 76% knew that such a test was available.

Overall, 124 (37%) people, had had an HIV test. A difference was seen between countries, with more people from PNG than Papua having had an HIV test, $\chi^2(1) = 4.15, p = .04$. This was heavily influenced by the statistical difference between testing in the women, 56% of women from PNG had been tested compared to just 27% of Papuan women, $\chi^2(1) = 6.64, p = .01$. In contrast, there was no difference between rates of testing in men (42% PNG vs 37% Papua), $\chi^2(1) = 0.57, p = .45$.

Amongst those who had been tested, testing was generally carried out on a voluntary basis, although 50% of the women from Papua who were tested reported that the test was required (Figure 25).

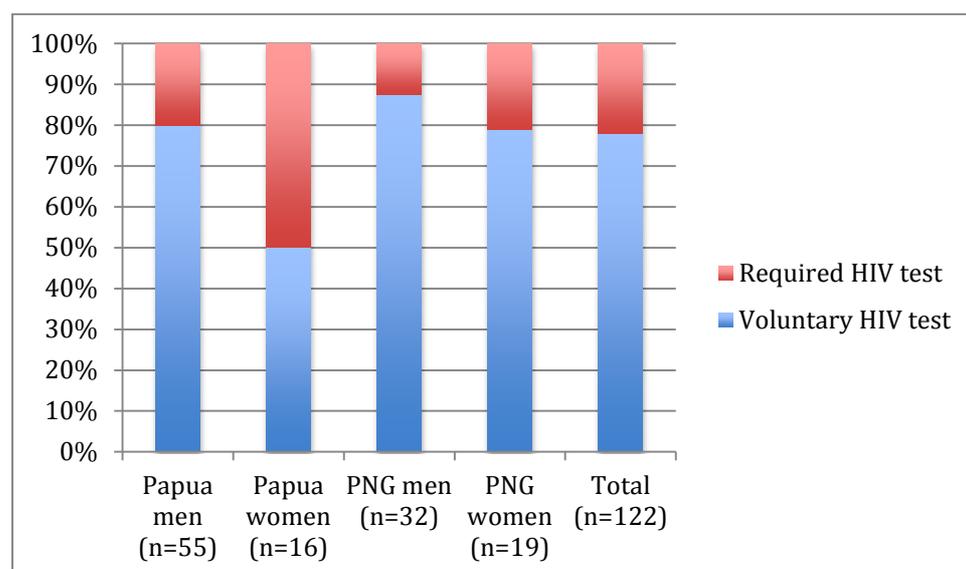


Figure 25: Percentages of voluntary vs required HIV tests, by country and gender

Site of testing

Most people had their HIV test at a hospital with the exception of women from Papua, who mostly had their testing at other, undetermined locations (Figure 26). No Papuan women accessed their test via an antenatal clinic whereas almost 30% of women from PNG did it this way. Those who chose 'other place' as their site of testing did not always specify, but notably, 12 men from Papua stated that they were tested in a village or village hall.

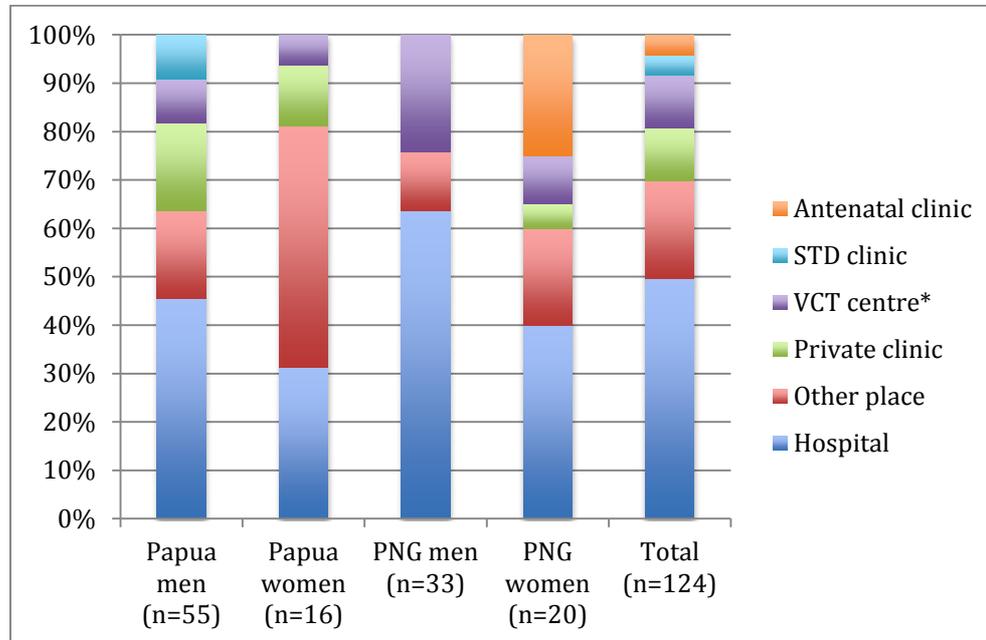


Figure 26: Site of HIV testing, by country and gender

*Voluntary Counselling and Testing centre

For the majority of those who were tested for HIV, this test occurred more than a year ago, with most people being tested 1-2 years ago. People from PNG were more likely than those from Papua to be tested recently (i.e. within the last 6 months) (Figure 27).

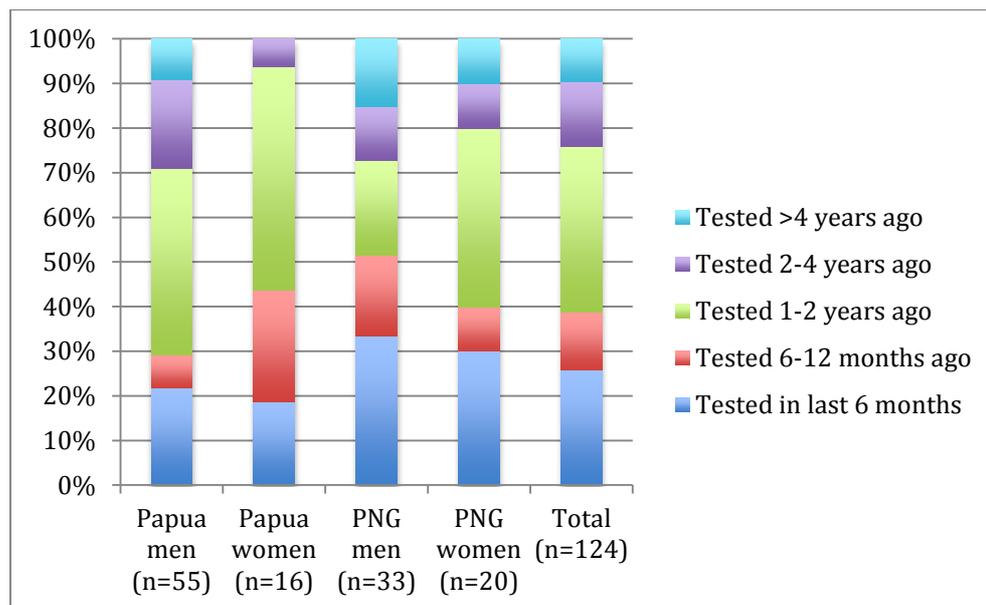


Figure 27: Time since last HIV test, by country and gender

There were no self-reported positive diagnoses of HIV amongst the participants from PNG and most knew the result of their most recent HIV test (three men from PNG representing 9% of PNG men who were tested did not find out their results). Amongst the Papuans, four men and one woman self-reported that they had tested positive for HIV, representing 7% of those tested. This represents 2.3% of the total Papuan sample. In addition, more people from Papua than from PNG did not know the result of their most recent HIV test – 22% of men and 38% of women reported not returning to receive their HIV test result. Only one of the five people who tested HIV positive stated that they were on HIV antiretroviral treatment.

STI services

Hospitals were identified as both a potential and a preferred source of advice and treatment for STIs by the majority of the respondents from both countries. The main difference between the two countries was the greater recognition and preference for private clinics in Papua and conversely, for VCT centres in PNG (Tables 29 & 30).

Table 29: Potential sources of advice & treatment for STIs, by country*

Sources of advice/treatment for STIs	Papua n = 214 (%)	PNG n = 117 (%)	Total N = 331 (%)
Hospital	167 (78%)	92 (79%)	259 (78%)
Private clinic	71 (33%)	19 (16%)	90 (27%)
VCT centre**	19 (9%)	57 (49%)	76 (23%)
Pharmacy	15 (7%)	4 (3%)	19 (6%)
Traditional healer	1 (<1%)	4 (3%)	5 (2%)
Other source	17 (8%)	13 (11%)	30 (9%)

*Respondents could select as many options as applicable

**Voluntary Counselling and Testing Centre

Table 30: Preferred source of assistance for an STI, by country*

Preferred source of assistance for an STI	Papua n = 214 (%)	PNG n = 117 (%)	Total N = 331 (%)
Hospital	180 (84%)	91 (78%)	271 (82%)
Private clinic	79 (37%)	12 (10%)	91 (27%)
VCT centre**	19 (9%)	58 (50%)	77 (23%)
Pharmacy	21 (10%)	3 (3%)	24 (7%)
Traditional healer	0 (0%)	4 (3%)	4 (1%)
Other source	14 (7%)	9 (8%)	23 (7%)

*Respondents could select as many options as applicable

**Voluntary Counselling and Testing Centre

Discussion and recommendations

A total of 331 people completed the survey: 65% were from Papua Province of Indonesia (Papua). Participants from Papua were better educated than participants from PNG. The PNG sample was considerably more mobile. Of the Papuan sample, 30% were Muslim, whereas the entire PNG sample were Christian. Just under half of the PNG men who completed the survey were single, whereas this was true of only 30% of the Papuan men.

Due to the large amount of information collected in the survey, this section will focus only on the key findings.

Patterns of border crossing

Most respondents made infrequent trips across the border, travelling on a monthly basis or less. A small proportion of people made more frequent trips, while around 20% of the sample from PNG traversed the border on almost a daily basis. These travellers cited the same main reasons for travel as the rest of the respondents, suggesting that more frequent trips do not necessarily involve different activities than more occasional trips. Most trips were short, 60% lasted for 1-2 days and 90% lasted a week or less. For the people from Papua, the main reason for cross border trips was to visit family, whereas for people from PNG, overwhelmingly their purpose was to shop. This finding resonates with reports that many people from PNG cross the border in Papua to take advantage of the beneficial exchange rate and increased number of services available (Komisi Penanggulangan AIDS, 2010). These reasons may be relevant to HIV risk as anecdotal reports suggest that people who cross for leisure or business (i.e. the majority of the PNG sample) may be more likely to engage in behaviours that increase HIV transmission risk than those who cross for 'traditional' reasons, like visiting family.

Sexual activity and condom use and at home and across the border

Although 60% of the sample had sex in the last 12 months, very few (12%) had sex on their cross-border trip, however for men from PNG this figure was higher at 30%. In their home country, most men reported having one, regular partner, with small numbers having casual and/or commercial sex. Amongst the few who had sex on the cross-border trip, a greater proportion of men from PNG had casual/commercial sex than they did at home. Additionally, whilst about 50% of PNG men had more than one partner in their home country, approximately 70% of those who had cross-border sex reported having more than one partner. For Papuan men, 70% reported having one partner both at home and on their cross-border trip. The greatest proportion of single people was found amongst men from PNG, which may explain their higher rates of sex with multiple partners and casual/commercial partners. It must also be noted that this was the group with the highest awareness and use of male condoms; hence there is also some mitigation of risk.

The most common sexual practice was vaginal intercourse, with very small numbers having heterosexual anal sex and no men reported having sex with men. Hence, the risk for HIV transmission in this sample mainly centres on vaginal intercourse.

People from PNG were more aware of and had more often used male condoms compared with their Papuan counterparts and this difference was particularly marked amongst women. Accordingly, people from PNG could also obtain condoms more easily and reliably – 71% of PNG men said they could always get condoms when needed vs. 33% of Papuan men, although this access was still not universal. The high proportion of people having sex with one regular partner may explain, in part, some of this lack of knowledge and use of condoms, as it may not be necessary for people in this type of relationship to use condoms. Being in a relationship of course does not guarantee monogamy. There were also a sizeable number of single people who had not seen and/or used a male condom. The most popular place to obtain condoms was health clinics. Of those who could not always obtain condoms, 20% cited a lack of availability as a reason but the majority cited another, unspecified reason – this is an area for further investigation. Cost was not a barrier to condom use, but availability was an issue for some people. Overall, this suggests that there is scope for more education and awareness-raising surrounding condoms and a need to increase condom accessibility.

Amongst women there was very little casual sex and no commercial sex, and most reported having just one partner. Very few women reported using condoms and this is likely to be a reflection of the fact

that most women perceive themselves to be in monogamous relationships, and most women gave this as the reason for not using condoms.

Of the 55 people who had more than one partner in their home country, 16 also had more than one partner across the border. This indicates that at least 17% of the sample had multiple sexual partnerships, a known risk factor for HIV (UNAIDS, 2014).

Recommendation:

Increase awareness/education about condoms and increase condom availability, in both countries but particularly in Papua. This may include building upon and expanding current campaigns, but may also require some novel and/or targeted approaches. Targeting of young, single men (as the group most likely to having multiple partnerships/casual sex), may be the most effective use of resources. This may require innovative approaches, as this group may not regularly attend health services, which appear to be a popular source of information and condoms.

Skin penetration procedures, including penis enhancement and circumcision

More men from PNG than Papua were circumcised and this tended to be at an older age. For PNG, this correlates with the findings of Maclaren et al. (2013). Men from Papua tended to have round penile cuts performed by health professionals; in contrast men from PNG more commonly had straight dorsal cuts, performed outdoors by friends or traditional cutters. Initial infection and bleeding risks are higher when cutting occurs outside of a clinical setting, hence PNG men may be more at risk of these complications. Despite this, the dorsal cut may still provide some protection against HIV transmission but the effectiveness of this is not as well established as that of 'medical' circumcision i.e. the full removal of the foreskin (Gray et al., 2014).

Within this sample, very few men (6%) had artificially enhanced their penis by injection of substances; therefore this is not considered to be significant risk behaviour for this population. Tattoos were much more common, especially amongst people from PNG of whom half had a tattoo. Although just 10% of tattoos were created with previously used equipment, this still represents a risky practice, which could be eliminated by tighter regulation.

Recommendation:

Increase education regarding the risks of penile enhancement techniques and the use of non-sterile equipment for skin penetration procedures. Again, targeting of certain groups may be useful as this practice may be concentrated in particular social groups (Hull & Budhaharsana, 2001). Working with traditional cutters in PNG may help to ensure this tradition is carried out in the safest possible way.

Alcohol and drug use

Fairly infrequent alcohol use (fortnightly or less) was reported by most of the sample; the group who drank the most were men from PNG, of whom 40% drank alcohol once a week or more. Few people consumed alcohol on their cross-border trip, suggesting that in general, people are not commonly drinking on cross-border trips and those that are tend not to drink in excess of their usual habits at home. However, although alcohol consumption levels in general do not appear excessive, around one third of people from PNG who had consumed alcohol in the last year stated that they were, at times, too drunk to use condoms, representing increased risk for HIV transmission. Ensuring optimal education and availability may help to mitigate this risk.

The results demonstrate very little drug use amongst this sample and virtually no injecting drug use. This coupled with the low rates of equipment reuse for tattoos and low levels of penile injections further suggesting that skin penetration procedures are not a major risk factor for HIV transmission amongst this sample. Injecting drug use and excessive alcohol use are not major factors increasing HIV risk in this region at this time. However, HIV in injecting drug users is more prevalent in other parts of Indonesia (UNAIDS, 2013).

Recommendation:

Carefully monitor injecting drug use behaviours in this region in order to quickly identify emergent HIV trends.

Knowledge and attitudes surrounding STIs and HIV

There is a sharp contrast between awareness of STIs and awareness of HIV. Whereas most people had heard of HIV, only half had heard of STIs; the reasons for this are unclear. Nonetheless, these diseases are related in terms of modes of transmission and can be important amplifiers of one another (Centers for Disease Control and Prevention, 2010), hence attention should be given to increasing awareness and knowledge of them both, possibly combining campaigns and programs. Main sources of information regarding HIV were health services and schools, although a range of media were also frequently cited sources in PNG. This is encouraging in that these sources should provide accurate information, but also points to a need to broaden sources of information to cater to people who do not regularly engage with such services, e.g., young, healthy men may not necessarily have cause to visit healthcare providers but would have need of accurate and accessible information on STIs and HIV.

People who considered themselves at some risk of HIV cited valid reasons for this perception, i.e. not always using condoms and having multiple partners. This was more common amongst the men from PNG than any other group, probably as this was the group containing the most people who were single. These people are therefore aware that their behaviour places them at greater risk, and so the next step would be to investigate the factors that prevent knowledge being translated into practice. Being with one faithful partner is why most people think they are not at risk of HIV – this correlates with marital status as most are in some kind of marriage/cohabitation type relationship.

Knowledge of HIV transmission varied, with most people being aware that transmission can occur by reusing needles, and fewest people being aware that there were effective medications for the treatment of HIV. There was also a difference between countries, with people from PNG being more aware of sexual risk practices and people from Papua being more aware of other methods of transmission like via blood or mother-to-child transmission, which points towards potential areas of focus for increased education efforts in each country.

Recommendation:

Increase knowledge of STIs and their relationship to HIV, possibly by combining campaigns and programs. Target avenues used already by young, single people to enhance awareness and education regarding STIs and HIV. A focus for Papua is education on sexual transmission of HIV and for PNG, a focus on information regarding other modes of transmission.

Fund a small, qualitative project investigating barriers to condom use in those who are aware that lack of condom use and multiple partnerships increase HIV risk, yet continue to execute these practices.

Global AIDS Response Progress Reporting (GARPR) Indicators: Papua

Amongst the sample from Papua, 14% attained GARPR Indicator 1.1, which pertains to knowledge about HIV transmission, which correlates almost exactly with the last GARPR submitted by Indonesia in 2012, in which 14.3% of young people correctly answered all 5 questions (National AIDS Commission Indonesia, 2012). Whilst this indicates that knowledge amongst the sample is no worse than in Indonesia generally, the very specific situation in Papua must be considered i.e. the low-level generalised epidemic there vs. a concentrated epidemic amongst certain groups observed in the rest of Indonesia. For Papua, this means that it is even more vital that the general population has adequate knowledge of HIV transmission if this transmission is to be ceased. Intensive up scaling of education is recommended.

Indicator 1.3 measures the percentage of those who had more than one partner in the last 12 months. For this Papuan sample the figure was 10% (all of whom were men, so 13% of Papuan men). This is much higher than the 0.3% reported in 2012 for all of Indonesia, and further supports the position that unsafe sex is the main cause of increased HIV transmission in Papua (National AIDS Commission Indonesia, 2012). Indicator 1.5 (HIV testing rate) was not reported in the 2012 GARPR.

GARPR Indicators: PNG

Amongst respondents from PNG, 29% attained GARPR Indicator 1.1, which is less than the 40.9% reported in the 2014 GARPR for PNG (National Department of Health, PNG, 2014), though this national data was for young people only who may have more access to information from educational establishments. Thirty three percent of respondents from PNG had more than one partner in the

preceding 12 months, which again is higher than that found in the national report where the proportion was just 17.3% (National Department of Health, PNG, 2014). This may indicate that this border region is a site for multiple sexual partnerships and the accompanying increased HIV risk. One mitigating factor is that the men from PNG in this sample used condoms more frequently than any other group in the study. Increasing education is of vital importance, as well as investigation of other factors affecting behaviour.

Indicator 1.5 was not reported in the 2014 GARPR, but 2010 figures for PNG indicate that 5% of the population had an HIV test within the preceding 12 months and knew their result (National AIDS Council PNG, 2010). Twenty one percent of this sample from PNG had been tested and knew their results, which suggests that some of the strategies employed by PNG (i.e. increased testing) are effective.

Access to services

Most people knew that HIV testing was available, but only 35% of Papuans and 46% of the people from PNG had ever had a test. Of those who were tested, most had been tested more than a year ago. It is likely that most people do not feel it necessary to get tested as they are only having sex with one, regular partner.

Hospitals were the preferred provider of care for most, though VCT centres also featured highly amongst people from PNG. It may be possible to replicate their success in Papua, though it is recommended that services broaden to provide information, treatment and testing for all STIs as well as HIV in light of the low knowledge of other STIs.

Conclusion

In general, most of this sample did not exhibit risk factors for HIV transmission: most reported a sexual relationship with one, regular partner and very little injecting drug use or penile injecting behaviours were found. However, a smaller proportion was engaging in unsafe sex, characterised by multiple sexual partners and/or casual and commercial sexual partners. Therefore, at this border area, the main factor influencing increased HIV transmission risk is the practise of unsafe heterosexual sex with multiple partners. These findings correlate with the report of the National AIDS Commission Indonesia (2012) who stated that unsafe sex was the main driver of the generalised epidemic seen in Papua. Although the PNG epidemic is viewed as concentrated in specific groups (National Department of Health PNG, 2014), the fact that there is so much frequent traversing of the border in both directions, and that a small but significant proportion of people are engaging in unsafe sexual practises is concerning for possible escalation of HIV prevalence in this area.

There is definite scope for more education on HIV and other STIs. Other aspects include enhanced service provision, including increased availability of condoms and investigation into other barriers to condom use.

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