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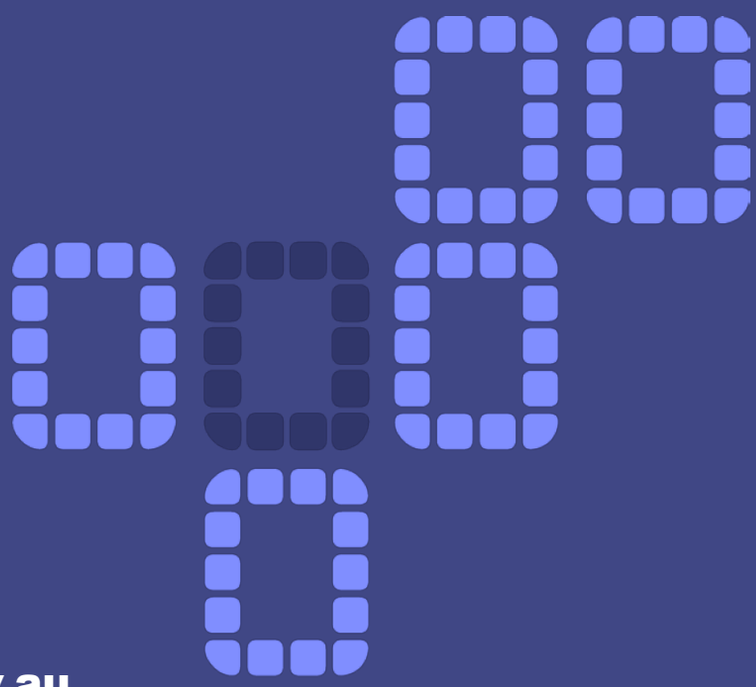
A survey of sexual health knowledge in migrants from West Africa

Communicable Disease Control Directorate



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REPORT

A survey of sexual health knowledge in migrants from West Africa

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Literature Review

A literature review on HIV/AIDS in Women in Sub-Saharan Africa indicated that most African people have heard of HIV/AIDS, but there is still widespread misunderstanding about how HIV is spread, the consequences of infection, and how to protect against infection. The most vulnerable groups are poorly educated women, those from rural backgrounds, and women who are economically dependent on men.

Eight West African women were trained to survey members of the Perth-based West African community on a range of health issues, including hygiene, sexual health, exercise, diet, and barriers to seeking help for medical and psychological problems. Eight undergraduate psychology students from Murdoch University were also trained to administer the survey to Australian women. The survey was administered to 51 West African women who had migrated to Australia between six months and five years ago, and to 100 Australian women. Each West African woman was matched as closely as possible with an Australian woman for age and education. However, only an approximate match was possible for education because of low levels of education in some of the West African women.

Key findings to emerge from the survey were:

- misconceptions about the spread and methods of protecting against sexually transmitted infections and HIV in West African women
- a negative attitude toward condom use in West African women
- psychological and social barriers to seeking medical and psychological assistance for a range of common medical and psychological problems in West African women, including sexually transmitted infections
- mean body mass index in the overweight range, more barriers to exercise, and greater misconceptions about the nutritional value of certain foods in West African women
- less smoking and alcohol consumption in West African women
- greater attention to general and personal hygiene in West African women.

Knowledge about sexual health issues was poorest in the least educated West African women, but even many of the more highly educated women had misconceptions about how HIV is spread, how to protect against HIV, and the effectiveness of condoms in protecting against sexually transmitted infections and HIV. Moreover, many of the well-educated West African women had negative attitudes toward condom use. These findings suggest that sexual health knowledge and practice has not changed greatly in West African women during the period since their arrival in Australia.

The West African community was informed of the survey findings in a Forum on 3rd February, 2007. A poll of attendees indicated an interest in finding out more about health issues, including sexual health. Thus, the West African community may be receptive to an educational programme on sexual health issues, now that awareness of these issues is high. Since social and cultural taboos in the West African community prevent open discussions about sexual health, any focus on improving sexual health knowledge must, as a necessity, be implemented with great sensitivity and be dovetailed onto an initiative with a principal focus that is acceptable to the community. Thus, embedding a sexual health programme within a peer-education intervention that also targets healthy eating, exercise, coping with stress, and overcoming barriers to help may enhance participation in the programme, and promote acceptance of new beliefs about sexual health issues.

Introduction

Women in sub-Saharan countries are considered to be one of the most vulnerable populations in the world for HIV (see figure 1 for a map of sub-Saharan Africa). Three quarters (76%, or 13.2 million) of all the HIV positive women in the world live in sub-Saharan Africa (UNAIDS, 2006a). Women in sub-Saharan Africa also make up 59% of the adults living with HIV, and almost three quarters (74%) of young people aged 15 – 24 years living with HIV are female (UNAIDS, 2006a). While women in many parts of the world have a longer life expectancy than men, in four countries of sub-Saharan Africa – Kenya, Malawi, Zambia and Zimbabwe – the life expectancy of women has been driven to lower than that of men as a result of AIDS (UNAIDS, 2006a). A wide range of biological, economic, and socio-cultural factors make African women vulnerable to HIV infection. African women and girls typically have less access to education and health information, suffer inequality in marriage and sexual relations, are economically dependent on their male partners, and are part of cultural traditions that reinforce gender inequalities (Aniekwu, 2002; UNAIDS, 2006b). Additionally, women in general are physiologically more vulnerable to HIV infection than men.

Figure 1. Countries the make up the sub-Saharan region in Africa.
Source: Canadian International Development Agency website
http://www.acdi-cida.gc.ca/cidaweb/acdicida.nsf/En/Home

African Women and their Vulnerability to HIV/AIDS

Biological Vulnerability

Unprotected vaginal intercourse increases the risk of HIV-infection by up to 2 – 4 times for women compared to men (WHO, 2000). The greater mucosal surface area of the vagina provides more opportunity for infection from semen, which has a much higher concentration of HIV than vaginal fluids and can remain in the vagina for hours after unprotected intercourse (WHO, 2000). Women are also more vulnerable to other sexually transmitted infections (STIs), which can increase the risk of HIV infection by up to 10 times (WHO, 2003). HIV risk for women in Dar es Salaam, Tanzania, was found to be higher among women who had current STIs (Kapiga, Lyamuya, Lwihula & Hunter, 1998). As symptoms of STIs are harder to detect in women, they often go untreated. Because of the strong link between the presence of STIs and increased risk of HIV infection, the World Health Organisation has targeted the control of STIs as a primary intervention for the prevention of HIV infection (WHO & UNAIDS, 1997).

The cultural practice of 'dry sex' by many women in Africa further increases the risk of HIV-infection. 'Dry sex' is the "removal of vaginal secretions before intercourse" (CDC, 2000, p. 90), which can be done by a variety of methods. Herbs, leaves, powders, douches, tampons, and other substances may be placed inside the vagina to dry, contract, and heat it before intercourse (CDC, 2000; Runganga & Kasule, 1995). However, any practice that dries the vagina increases the likelihood of small abrasions and tears in the vaginal lining (CDC, 2000; Runganga & Kasule, 1995). Sexual contact involving an increased chance of tearing and bleeding is likely to further heighten the opportunity for infection. So in addition to dry sex, rough sex, rape, sex during a woman's menstrual period, or prior genital mutilation are all associated with heightened risks. Young women are also at higher risk because of their immature cervix, minimal vaginal secretions, and the chance of hymen breakage at first intercourse (CDC, 2000; Runganga & Kasule, 1995).

Cultural Traditions and Economic Vulnerability

A woman's economic dependence is closely tied to her lack of power in relationships and sex (UNAIDS, 2006c). African women are traditionally placed in a subordinate role to men. The role of an African woman is to be a housewife, mother, and caregiver. Receiving an education that lasts into secondary school and beyond is not typically a top priority, nor is getting employment beyond running the household (Ackermann & de Klerk, 2002). Because of these factors, women and girls are highly economically dependent on the men in their lives, whether it is their father or older brother if they are still in their parental home, or their boyfriend or husband. As African women traditionally have a subordinate role to men, they are often pressured to do as the men ask, for fear of losing their economic support. Laws in some countries even prevent women from the right to inherit property from their fathers or spouses (Lawson, 1999; UNAIDS, 2006b). In this way, many husbands and fathers, with their economic power, can maintain control over the education, employment, and marriage prospects of their wives and daughters (Ackermann & de Klerk, 2002; WHO, 2003). A nation-wide study of women in Africa found that one in five married women reported that their partner had regularly not provided money for food, rent or bills, whilst having money for other things (Department of Health National Health Information Systems of South Africa (NHIS/SA), Medical Research Council South Africa, Centre for Health Systems Research and Development, University of the Orange Free State, & Macro-International, 1998). This economic abuse was far less likely amongst more educated women.

The more education a woman has, the greater her chances in life and opportunities for employment (UNAIDS, 2006b). Greater education gives a woman more chance at gender equality, and increases the protective factors against HIV infection. In the Ariaal Rendille culture of Northern Kenya, young women typically take part in the cultural pre-marital tradition of 'beading'

(Roth, Fratkin, Ngugi & Glickman, 2001). The newly initiated warriors of the culture are linked to an unmarried girl for a long-term sexual relationship until the warrior's 11-year work period is up, at which point the warrior will marry another girl. Because the warriors are generally much older and have multiple partners, the chance of STIs (including HIV infection) is high. However, educated women and girls in the Ariaal Rendille culture are often exempt from this tradition. Educated women in this culture are given more autonomy and respect than their female peers, have a more active role in their choice of marriage partner, and often wed later. They have also come to believe in premarital virginity, because of the fear that pregnancy may cause them to drop out of school and reduce their opportunities in life. Girls who get pregnant in some African cultures may even be expelled from school (Kiapa-Iwa & Hart, 2004). This also suggests that educated women (in this culture at least) are at less risk of contracting STIs (Roth et al., 2001).

Unfortunately, many factors may hinder or prevent an African woman or girl's education. Lack of money to afford the education, migration of the family due to poor economic conditions, unwanted pregnancy, and marriage are some of the possible reasons (Lawson, 1999; WHO, 2003). However, the illness of a family member due to AIDS may also force a woman or girl out of school and into the home as a caregiver. Women and girls in Africa are expected to take on the role of caregiver when a family member is affected by AIDS (Kabira, Gachukia & Matiangi, 1997). The role of caregiver falls to them because of "their traditional roles as carers and homemakers, deeply engrained social attitudes, and insufficient social services" (UNAIDS, 2006a, p. 90). But caring for AIDS-affected family members is an enormous undertaking and, as a result, opportunities for education and employment can disappear (Kabira et al., 1997; UNAIDS, 2006a). The expectation that a woman or girl will look after other family members with AIDS reduces educational and employment opportunities, increases her economic dependence on others and, in turn, increases her vulnerability to HIV infection.

Lack of control over sexuality

Many African societies have social and cultural taboos about discussing sex, so women often do not feel comfortable seeking information about HIV/AIDS, STIs and condoms, even among health-care professionals (WHO, 2003). This lack of knowledge, and an inability to comfortably access knowledge about sexual and reproductive health, puts African women at greater risk for HIV infection. There is a definite double-standard regarding sex in African cultures (Kabira et al., 1997), as "sex continues to be defined in terms of male desire with women being relatively passive recipients of male passions" (Aniekwu, 2002). African women lack control in sexual matters, and are typically expected to be submissive and leave the initiative and decision making in sexual relations to men (WHO, 2000). They have little opportunity to negotiate safer sex, to control when and how sex occurs, or to control the sexual lives of their partners (Ackermann & de Klerk, 2002; WHO, 2000).

Because of their diminished economic power, women fear abandonment and have to accept violence from the male partner (WHO, 2000). As a result, many women are frightened to bring up the issues of safer sex. They may fear asking their partner to use a condom, as it may suggest that the woman has been unfaithful, that she doubts her partner, or that she is accusing him of having an STI (Ackermann & de Klerk, 2002). This inability to insist on condom use puts many African women at great risk for STIs and HIV infection. While the risk of HIV infection when not using condoms can be minimised when both partners are known to be free of any infection and are monogamous (WHO & UNAIDS, 1997), this is often not the case. The double standard present in many African societies traditionally permits men to have multiple partners and sex outside the relationship, whereas even a suspected affair on the woman's part may result in ostracism and abandonment (Ackermann & de Klerk, 2002; WHO, 2000). Although women may be aware that their partner is not monogamous, they feel powerless to change the situation or insist on condom use. This puts the women at even greater risk of HIV infection. For women who perceive themselves to be at risk for HIV infection, the two most common reasons for this perception are a lack of trust in a male partner

and their knowledge of a partner's promiscuity (Sarker et al., 2005).

Married women and adolescent girls have been identified as populations at risk (UNAIDS, 2006b). For married adolescent girls and young women in Kenya and Zambia, marriage increases the frequency of sexual intercourse, decreases condom use, and minimises their ability to abstain from sex in comparison to their unmarried peers (Clark, 2004). Unfortunately, these married adolescent girls and young women also have higher rates of HIV infection than their peers. Married women are often neglected in HIV/AIDS education campaigns, but they too obviously are a group at risk (Clark, 2004). A study of the sexual behaviour of adolescents in the rural Rakai district, Uganda, revealed that there was no significant difference in the rates of HIV infection between married women and those who just had a boyfriend (Konde-Lule et al., 1997). However, women in both these relationships were at a significantly higher risk compared to those not currently in a relationship. While 86% of the young married women had remained monogamous for at least the previous year, 40% of the young married men had multiple sexual partners in the previous year (Konde-Lule et al., 1997).

Violence against Women

Physical and sexual violence from a partner seems to be accepted to a certain degree in many African cultures (Ackermann & de Klerk, 2002; UNAIDS, 2006b). In the year prior to a nation-wide study of women in South Africa, one in ten women had experienced physical assault, 6% by a current or ex- partner and 4% by someone who was not a partner (NHIS/SA et al., 1998). In many cases violence against women is seen as a private matter and a normal part of a relationship, so women are often without a chance of legal recourse (UNAIDS, 2006b). Intimate partner violence is associated with increased levels of HIV risk behaviour, such as multiple partners, having a non-primary partner, bartering sex for goods or money, and problems with substance use. But even after their own risk behaviour is taken into account, women who have experienced partner violence or are currently involved with an aggressive partner are at increased risk of HIV infection (Dunkle et al., 2004). In a study of women attending a voluntary counselling and testing clinic in Dar es Salaam, Tanzania, women infected with HIV were significantly more likely to have had a physically violent partner at some point in their life than those without HIV (Maman et al., 2002). Women infected with HIV were also significantly more likely to have experienced physical violence, sexual violence, or both, with their current partner.

One in five women attending prenatal and paediatric clinics in Kigali, Rwanda, revealed that they had experienced physical violence from their regular partner (van der Straten et al., 1998). Additionally, one third of the women reported sexual coercion, and one third reported that their partner would get mad at their refusal to have sex. The presence of physical violence may also hinder condom negotiation and use on the part of the female partner (van der Straten et al., 1998). In a study of men and women attending an STI clinic in Cape Town, South Africa, more than 40% of women and 16% of men had been victims of at least one sexual assault, and more that one in five men in the study admitted to perpetrating sexual assault against a woman (Kalichman et al., 2005). As many as one in five men and women (in some cases, up to one in three) supported the view that rape is usually a woman's fault and the result of what she said or did. There was little difference between the answers of men and women. They both "endorsed the view that women are subordinate to men and passive in their relationships with men and that women are often to blame for rape" (Kalichman et al., 2005, p. 304). The idea of rape within a marriage is not even considered by many (WHO, 2003). As reported by Mufune (2005), "[m]en also believe it is ridiculous that a husband might be regarded as having raped his wife – 'one cannot steal what belongs to oneself'… [m]arital rape is clearly an oxymoron to them" (p. 683).

African women with greater economic independence may feel they have more power to negotiate safer sex and condom use, because the potential loss of their partner would not affect their capacity to support themselves or their children (Greig & Koopman, 2003). A trend was also noticed that women who had their own source of income reported less sexual coercion or physical violence from their partner (van der Straten et al., 1998). However, some women feel that they have to use sex as a commodity to survive. Women in a Tanzanian study with a partner more than 12 years older than themselves were at increased risk for HIV infection (Kapiga et al., 2006), and one possible reason for this is the 'Sugar Daddy' relationship (WHO, 2000). Younger women with a poor economic background may seek out relationships with older men who have a stable income (Nzioka, 2004). These men may provide them with gifts or money or general economic support in return for sex (Longfield, Glick, Waithaka & Berman, 2004; UNAIDS, 2006d). Many young women may use the money towards school books, fees and uniforms, to help them stay at school where they know they will get more opportunities in life (WHO, 2003). Older men also seek out younger girls, because they perceive them to be safer with less chance of infection (Ackermann & de Klerk, 2002). But unfortunately for the younger girls, older men are more likely to have STIs, including HIV, so the chance of the girls becoming infected is greatly increased (Nuwaha, Faxelid, Neema & Hojer, 1999; UNAIDS, 2006b). Women are also placed in a weaker position in these relationships, so their ability to negotiate safer sex is diminished (Longfield et al., 2004).

African women may even turn to prostitution as a means of survival after the loss of their husband (the source of economic support) through divorce, widowhood, or other reasons, such as the husband leaving to look for employment prospects elsewhere (Ackermann & de Klerk, 2002; WHO, 2000). For unskilled, unemployed, and minimally educated women who are in a poor economic position with a family to support, selling or bartering sex may be the only viable option to generate an income. But women who sell or barter sex put themselves at great risk of HIV infection, and not just because of frequent exposure to many men whose sexual health history they are unaware of (WHO, 2000). In Africa, sex workers are often expected to reduce their rate of payment if they insist on using a condom (Karim, Karim, Soldan & Zondi, 1995). Even if the sex workers are aware of the risks of not using a condom, the loss of income may be considered too great not to take the risk. Suggesting condom use may also be met with physical violence and rougher sex (Karim et al., 1995).

Knowledge of HIV/AIDS

The "unique social and psychological problems" African women face because of their gender and role in society need to be addressed (Shah & Bradbeer, 2000, p. 282). One of the most important issues to be addressed is ensuring that all African women are educated about HIV and AIDS (UNAIDS, 2006b). If African women are unaware that HIV and AIDS even exist, or that HIV is deadly, incurable, and without a vaccine, then how are they to protect themselves from it? Women not only need to know about the disease, but also need to know about the correct methods of transmission, understand and reject the misconceptions regarding HIV/AIDS, and know the correct methods to protect themselves from infection. The literature reviewed below indicates that although a large proportion of African women have heard of HIV and AIDS, fewer have correct knowledge about how HIV is spread or how to protect themselves from it.

Awareness of HIV/AIDS

There was an almost universal awareness of the existence of HIV and AIDS in the studies reviewed (see table 1). In countries where knowledge of the existence of HIV/AIDS was almost universal, this high level of knowledge was consistent regardless of gender or location. Studies that only recorded a total percentage of participants who had heard of HIV and/or AIDS

typically mentioned that no major difference was found between the male and female participants. Although the majority of studies did not find any great difference (if there was a difference, it was less than 2%) in the percentages of men and women aware of HIV/AIDS, in the studies where differences were noticeable, fewer women knew about HIV/AIDS than men.

In eight of 25 studies, less than 95% of participants had heard of HIV/AIDS. The study of four different target groups from around two large cities in Ethiopia recorded an overall percentage just lower than 95% (Yerdaw Nedi & Enquoselassie, 2002). However, on closer examination of the target groups, more than 95% of urban residents, farmers, and sex workers had awareness of HIV/AIDS. It was only the group of students who brought the average down, as fewer than 90% of them had an awareness of HIV/AIDS (Yerdaw et al., 2002). In two studies, one of high school students in Nigeria, and another of young women in rural areas in Burkina Faso, less than 95% of the young women were aware HIV/AIDS (Obiechina, Diwe & Ikpeze, 2002; Sarker et al., 2005). Although less than 95% of women and men had awareness of AIDS in a nation-wide study conducted in Lesotho, this was the only study where a slightly higher percentage (only 1%) of women had heard of AIDS than men (MOHSW Lesotho et al., 2005).

In the nationally representative surveys conducted in Ethiopia, Mali, and Nigeria, 97 – 98% of the men had heard of AIDS, but only 86-90% of women had heard of AIDS (CSA Ethiopia & ORC Macro, 2006; MOH Mali et al., 2001; NPC Nigeria & ORC Macro, 2004). The difference between the men and women in those three studies ranged from 7 – 11%! This represents a huge number of women who have not even heard of AIDS, compared to an almost universal awareness amongst the men. The gender difference was also present in the national survey conducted in Madagascar, and in the study of the rural traditionalist Ariaal Rendille culture in Northern Kenya. Both studies recorded levels of awareness at or below 90%. But in both studies, a higher percentage of men than women had heard of AIDS. Between 88 – 90% of men had heard of AIDS, compared to only 79 – 80% of women (INSTAT & ORC Macro, 2005; Roth et al., 2001). The large difference in the percentages of women and men who have not even heard of HIV/AIDS indicates the need for education programs that target women specifically.

The nation-wide surveys provide in-depth information about the percentage of women aware of AIDS in urban and rural areas, and awareness of AIDS in women from different educational backgrounds. Countries which had a high level of awareness (at least 90%) amongst women in urban and rural locations, were Eritrea (NSEO Eritrea & ORC Macro, 2003), Ghana (GSS et al., 2004), Kenya (CBS Kenya et al. , 2004), Lesotho (MOHSW Lesotho et al., 2005), Namibia (MOHSS Namibia, 2003), Rwanda (INSR Rwanda & ORC Macro, 2006), South Africa (NHIS/SA et al., 1998), Tanzania (TACAIDS et al., 2005), and Uganda (MOH Uganda & ORC Macro, 2006). The same countries, excluding Lesotho, also had a high percentage of women (at least 90%) who were aware of AIDS, regardless of whether they had no education or secondary education and above. Despite the high levels of knowledge, there was always a higher percentage of women from urban areas and with secondary education and above who had awareness of AIDS, compared to women from rural areas and with no education.

Table 1. Percentage of males (m) and females (f) who had heard of HIV and/or AIDS

Authors	Year	N	Demographics	% knew of HIV/AIDS		
				Total	m	f
Alene, Wheeler & Grosskurth	2004	260	Two rural high schools in **Ethiopia**	99% (#)	-	-
CBS Kenya, MOH Kenya & ORC Macro	2004	12493	Nationally representative sample survey, **Kenya**	-	99% (#)	99% (#)
Cherie, Mitkie, Ismail & Berhane	2005	901	Adolescents attending high school in Addis Ababa, capital city of **Ethiopia**	100% (*#)	-	-
CSA Ethiopia & ORC Macro	2006	20103	Nationally representative sample survey, **Ethiopia**	-	97% (#)	90% (#)
CSO Zimbabwe & Macro International	2000	8516	Nationally representative sample survey, **Zimbabwe**	Nearly all (#)	-	-
DNS Guinea & ORC Macro	2006	11128	Nationally representative sample survey, **Guinea**	-	99% (*#)	97% (*#)
GSS, NMIMR & ORC Macro	2004	10706	Nationally representative sample survey, **Ghana**	-	99% (#)	98% (#)
INS Cameroon & ORC Macro	2004	15936	Nationally representative sample survey, **Cameroon**	-	99% (*#)	98% (*#)
INSR Rwanda & ORC Macro	2006	15734	Nationally representative sample survey, **Rwanda**	-	99.9% (#)	99.9% (#)
INSTAT & ORC Macro	2005	10381	Nationally representative sample survey, **Madagascar**	-	88% (#)	79% (#)
Mbizvo, Msuya, Hussain, Chirenje & Stray-Pedersen	2003	393	Women attending primary healthcare clinics in Harare, capital of **Zimbabwe**	-	-	100% (#)
MOH Mali et al.	2001	16254	Nationally representative sample survey, **Mali**	-	98% (#)	90% (#)
MOH Uganda & ORC Macro	2006	19656	Nationally representative sample survey, **Uganda**	-	99% (#)	99% (#)
MOHSS Namibia	2003	9709	Nationally representative sample survey, **Namibia**	-	99% (#)	98% (#)
MOHSW Lesotho, BOS & ORC Macro	2005	9591	Nationally representative sample survey, **Lesotho**	-	93% (#)	94% (#)
Negash, Gebre, Benti & Bejiga	2003	359	Community-based study in Gambella town, **Ethiopia**	95.5% (*#)	-	-
NHIS/SA et al.	1998	11735	Nationally representative survey of women only, **South Africa**	-	-	97% (#)
NPC Nigeria & ORC Macro	2004	9713	Nationally representative sample survey, **Nigeria**	-	97% (#)	86% (#)
NSEO Eritrea & ORC Macro	2003	8754	Nationally representative survey of women only, **Eritrea**	-	-	96% (#)
NSO Malawi & ORC Macro	2005	14812	Nationally representative sample survey, **Malawi**	Nearly all (*#)	-	-
Obiechina et al.	2002	983	Adolescent female high school students at Onitsha, **Nigeria**	-	-	93.6% (*#)
Roth et al.	2001	282	Rural traditionalist Ariaal Rendille culture, Northern **Kenya**	-	90% (*#)	80% (*#)
Sarker et al.	2005	300	Young women in rural areas, **Burkina Faso**	-	-	91% (*#)
Smith	2003	863	Young rural-urban migrants in **Nigeria**	99% (*#)	-	-
TACAIDS, NBS & ORC Macro	2005	12964	Nationally representative sample survey, **Tanzania**	-	99% (#)	99% (#)
Yerdaw et al.	2002	2278	Four target groups from two large cities in **Ethiopia**	93% (*#)	-	-
		1106	Students (secondary & tertiary)	89%	-	-
		528	Urban resident	98%	-	-
		263	Farmer	96%	-	-
		381	Sex worker	98%	-	-

* = heard of HIV; # = had heard of AIDS; *# = heard of HIV/AIDS.

The nation-wide surveys from Nigeria and Ethiopia revealed strong differences between women living in urban and rural areas. In Nigeria, 95% of women living in urban areas were aware of AIDS, compared to only 82% of women living in rural areas (NPC Nigeria & ORC Macro, 2004). Ethiopia also had a huge difference, with an almost universal awareness of AIDS from women in urban areas compared to only 88% of women in rural areas (CSA Ethiopia & ORC Macro, 2006). Ethiopia also showed some of the strongest differences in awareness of AIDS across its regions. There was a striking lack of knowledge in the Somali, Gambela, and Benishangul-Gumuz regions of Ethiopia. The Somali region had the lowest levels of awareness, as only 50% of women and 64% of men had heard of AIDS – and this lack of knowledge was obvious across all HIV/AIDS knowledge domains. In the Gambella region, 63% of women and 88% of men had heard of AIDS, and in the Benishangul-Gumuz region, 68% of women and 95% of men knew about AIDS. This massive difference between the awareness levels of men and women in these areas obviously needs addressing (CSA Ethiopia & ORC Macro, 2006).

HIV/AIDS awareness clearly varied across levels of education for women in Lesotho, Nigeria, and Ethiopia. In Lesotho, 100% of women with secondary education and above had heard of AIDS, but this level of awareness declined with the level of education, so that only 80% of women without any education knew about AIDS (MOHSW Lesotho et al., 2005). Again, in Ethiopia there was an almost a universal awareness of AIDS (99.8%) in women with secondary education and above compared to women with no education (86%) (CSA Ethiopia & ORC Macro, 2006). All women in the Nigerian study with higher than secondary education were aware of AIDS, compared to only 78% of women who had no education (NPC Nigeria & ORC Macro, 2004). Why levels of education are linked with levels of awareness of HIV/AIDS in some countries, but not others, is important to determine, and may possibly be due to where and how HIV/AIDS information is distributed.

Basic Knowledge of HIV/AIDS

African women need to not only have heard of HIV/AIDS, but also understand the consequences of HIV infection. They need to know that HIV leads to AIDS, that AIDS is deadly, and that currently there is no cure or vaccine for it. They also need to be aware that even healthy people can have HIV/AIDS. Quite a high proportion of participants across the studies incorrectly believed that a cure existed for AIDS. In many studies, approximately a quarter of the participants believed there was a cure for AIDS (Cherie et al., 2005; Ibe, 2005; Kalichman & Simbayi, 2003; Simbayi et al., 2005). In other studies, less than one in ten participants believed there was a cure (Alene et al., 2004; Yerdaw et al., 2002). Interestingly, in a study of the sexual health knowledge of male and female Nigerian inner-city high school students, sexually experienced adolescents were more likely to incorrectly report that AIDS was curable (30%) compared to others (17%) (Araoye & Adegoke, 1996). A survey of adolescents attending high schools in Addis Ababa, the capital city of Ethiopia, revealed that one-third thought there was a *vaccine* for AIDS (Cherie et al., 2005). There is also a widespread myth that having sex with a virgin can cure AIDS (UNAIDS, 2006d). For instance, one in five (21%) of the male respondents in a study of youth living in a Black South African township believed that AIDS could be cured by having sexual relations with a virgin (Simbayi et al., 2005). This myth must be destroyed, because it places many young girls and women at risk of infection, whether by consensual sex or rape (UNAIDS, 2006d).

Some studies revealed quite low levels of basic knowledge of HIV/AIDS. A survey conducted in Bida Emirate of Niger State, Nigeria, to determine the sexual health knowledge of 1200 women of reproductive age indicated that the majority of the women (90.9%) had no or low (elementary level) education only (Yahaya, 2002). When the women were asked to describe what they knew of HIV/AIDS, a huge majority of them (84.8%) had no idea, and the rest described it as being a deadly disease (15.0%) (Yahaya, 2002). Only 69% of young women surveyed in the rural areas of Burkina Faso were aware that AIDS was deadly (Sarker et al., 2005), and a study of the rural traditionalist Ariaal Rendille culture in Northern Kenya found that significantly fewer women (64%) than men

(84%) named 'wasting' as a symptom of AIDS (Roth et al., 2001). Despite women with tertiary education generally having a higher level of knowledge regarding HIV/AIDS (UNAIDS, 2006b), a survey of first year university students in Nigeria revealed that only 22.8% could define HIV and 71.9% could define AIDS (Ibe, 2005). However, 93% of them were aware that HIV causes AIDS (Ibe, 2005). In a similar study of male and female Nigerian high school students living in a city, only half knew that HIV was the cause of AIDS (Araoye & Adegoke, 1996).

The knowledge that even healthy people can have HIV/AIDS varies across studies. High numbers of participants (84%) in a community-based study in Gambella, Ethiopia (Negash et al., 2003) and a survey of adolescents (93%) in two rural high schools in north western Ethiopia (Alene et al., 2004) knew that even healthy looking people could have HIV/AIDS. However, surveys of 300 women from rural areas in Burkina Faso found that only a third (31%) of women were aware of this (Sarker et al., 2005). Gender, location, and educational differences all appear to influence whether people know that healthy looking people can have HIV/AIDS. In the nation-wide surveys conducted in various sub-Sahara African countries the difference between men and women who knew that even healthy looking people can have HIV/AIDS varied between 4 to 20% (NSEO Eritrea & ORC Macro, 2003; GSS et al., 2004; CBS Kenya et al., 2004; MOHSW Lesotho et al., 2005; MOHSS Namibia, 2003; INSR Rwanda & ORC Macro, 2006; NHIS/SA et al., 1998; TACAIDS et al., 2005; MOH Uganda & ORC Macro; 2006; CSA Ethiopia & ORC Macro, 2006; NPC Nigeria & ORC Macro, 2004). In most of the national surveys, a higher percentage of men than women knew this. However, Lesotho is the exception, as 75% of women compared to 69% of men knew that a healthy looking person could have AIDS (MOHSW Lesotho et al., 2005).

Huge differences in knowledge also exist between the women of different countries, between urban and rural women, and between women who have secondary education and above and those who have none (see Table 2). Overall, greater percentages of women from urban areas and women with secondary education knew that even healthy looking people can have HIV/AIDS. It is vital that women know they cannot judge whether or not to protect themselves from HIV infection based only on how someone appears (UNICEF, UNAIDS, & WHO, 2002).

***Table 2.* Percentage of females who were aware that even healthy looking people can have HIV/AIDS**

		Residency		Level of Education	
	Country	**Urban**	**Rural**	**Secondary+**	**None**
CBS Kenya, MOH Kenya & ORC Macro (2004)	Kenya	91%	83%	96.5%	57%
CSA Ethiopia & ORC Macro (2006)	Ethiopia	79%	44.5%	84%	41%
GSS, NMIMR & ORC Macro (2004)	Ghana	87%	73%	95%	66%
INSR Rwanda & ORC Macro (2006)	Rwanda	94%	82%	98%	73%
MOH Uganda & ORC Macro (2006)	Uganda	90%	71%	90%	61%
MOHSS Namibia (2003)	Namibia	89%	78%	95%	59%
MOHSW Lesotho, BOS & ORC Macro (2005)	Lesotho	91%	70%	99.5%	45%
NHIS/SA et al. (1998)	South Africa	61%	44%	76%	38%
NPC Nigeria & ORC Macro (2006)	Nigeria	69%	45%	92%	40%
NSEO Eritrea & ORC Macro (2003)	Eritrea	88.5%	66%	95%	61%
TACAIDS, NBS & ORC Macro (2005)	Tanzania	88%	73%	97%	60%

Knowledge of correct modes of transmission

There was a high level of awareness across the studies reviewed that unsafe sex was a mode of HIV transmission. More than 95% of urban residents (99%), farmers (96%), and sex workers (99.5%) from around two cities in Ethiopia (Yerdaw et al., 2002) were aware of this, as were the students (97%) from two rural high schools in Ethiopia (Alene et al., 2004). However, only 94% of the student population around two Ethiopian cities knew that unsafe sex was a mode of HIV transmission (Yerdaw et al., 2002). Young rural-urban migrants in Nigeria (85 – 88%) (Smith, 2003), a community-based sample from Gambella town, Ethiopia (80%) (Negash et al., 2003), and young women from rural areas in Burkina Faso (77%) (Sarker et al., 2005) had lower levels of knowledge. A study of male and female Nigerian high school students living in a city found that the students who had AIDS education at school (42%) were more likely to correctly identify modes of transmission (58% – 83%) compared to those who did not receive this education (53% – 78%) (Araoye & Adegoke, 1996). Sexually active adolescents also had more awareness of sexual transmission of HIV (89%) than those who weren't sexually active (76%) (Araoye & Adegoke, 1996). All adolescents attending high schools in Addis Ababa, Ethiopia, who took part in the survey knew at least three correct means of HIV/AIDS transmission and three correct methods of prevention (Cherie et al., 2005). Because unsafe sex is the most common method of HIV transmission (WHO, 2000), it is vital that there is a universal awareness of this not only amongst women, but amongst men as well. Women have a greater biological vulnerability to HIV infection via sexual intercourse than men, so it is most important that they do not take risks (WHO, 2000). But as African men are traditionally in the dominant position regarding sexual matters in a relationship, it is important that they are aware of the risks and will agree to protective measures (Ackermann & de Klerk, 2002).

Knowledge of other modes of transmission varied across the studies. Awareness that injecting equipment (needles, syringes, etc) that has not been sterilised is another possible method of transmission was high amongst urban residents (96%), sex workers (96%) and students (92%) from around two Ethiopian cities (Yerdaw et al., 2002), and among students from two rural high schools in Ethiopia (92%) (Alene et al., 2004). A fairly high percentage of farmers (87.5%) were aware of this mode of transmission (Yerdaw et al., 2002). First year university students in Nigeria correctly reported that contact with bodily fluids (98.2%) and sharing injection needles (84.2%) were methods of transmission (Ibe, 2005). But shockingly, less than two thirds (61%) of young rural-urban migrants in Nigeria (Smith, 2003) and only one in ten (13%) people from a community based study in Ethiopia (Negash et al., 2003) knew that injecting equipment which had not been sterilised is a possible mode of transmission.

An unsafe blood transfusion, where the blood has not been screened to ensure it is not contaminated by HIV, is another possible mode of transmission for HIV. Again, knowledge from the population groups around two cities in Ethiopia was fairly high, with most urban residents (97%), sex workers (97%), students (95%) and farmers (87%) aware of this method (Yerdaw et al., 2002). Knowledge of this transmission method from the community-based study was not as high, as just under two thirds of participants were aware that unsafe blood transfusions are a method of HIV infection (Negash et al., 2003). While these two methods of transmission may not be of concern to many African women (unless they are drug users, or regularly attend health services that do not sterilise their equipment or screen blood), this knowledge is still important. These two methods of transmission are *very* effective, so if a person should come into contact with either of them, they need to know the risks involved (WHO, 2000).

Overall levels of awareness of correct modes of transmission varied across three South African studies. Men and women in a black South African township had fairly good HIV/AIDS knowledge overall, with 83% of participants giving correct answers on a test on the methods of HIV/AIDS transmission (Kalichman & Simbayi, 2003). Simbayi et al. (2005) examined the HIV/AIDS-

related knowledge of *youth* living in a black South African township, and an average of 81% correct responses were given by the participants. However, very low levels of HIV knowledge were found amongst *rural* residents in South Africa after they had received a diagnosis of AIDS (Mabunda, 2004). The participants (*N*=13) were attending support groups for HIV/AIDS, and were unemployed, had minimal education (none had completed high school), and were diagnosed because they were already showing signs of AIDS. They knew little about HIV/AIDS except for the information they had received from the mass media and word of mouth. All had heard of HIV/AIDS before their diagnosis, but did not know the basic facts until they were educated about them in the support group meetings (Mabunda, 2004).

Mother-to-child transmission of HIV is another important method of HIV transmission that females particularly need to be aware of. Mother-to-child transmission is the major means of HIV infection in children, as up to 40% of children born to HIV positive women will become infected themselves, unless the mother is undergoing preventative treatment (WHO, 2000). It is thought that of the children infected via mother-to-child transmission, two thirds of children are infected during pregnancy and delivery, and one third during breastfeeding (WHO, 2000). It is important that men and women are aware of mother-to-child transmission for several reasons. If a couple is attempting to have a baby, it is important to test for HIV infection because if one of the couple is infected, then they need to assess whether they still want to try for a baby. If they still want a baby, they will need to assess the risk of the other partner becoming infected and the chances of a baby becoming infected with HIV (WHO, 2000). Many women are diagnosed as HIV-positive when they are pregnant, so awareness of mother-to-child transmission may compel them to seek treatment during pregnancy. Knowledge of mother-to-child transmission will make them aware of methods that can reduce the risk of mother-to-child transmission, such as a non-vaginal delivery and by not breastfeeding (WHO, 2000).

Knowledge of mother-to-child transmission is very inconsistent across the studies. In the nationally-representative studies that assessed the percentage of people aware of mother-to-child transmission of HIV via breastfeeding (see table 3), there was no clear difference in knowledge between the genders. In all other assessments of HIV/AIDS knowledge, males were consistently more aware of the correct information. But in regards to mother-to-child transmission, neither gender dominated. In five out of the nine countries (Kenya, Uganda, Lesotho, Malawi, and Tanzania), more females were aware that HIV can be transmitted from mother to child via breastfeeding than males. More males in four of the countries (Ethiopia, Ghana, Rwanda, and Nigeria), were aware of this mode of transmission than females. Differences between males and females varied from 2 – 10%.

Awareness of this method of transmission varies across studies. More than three quarters of women from Rwanda and Malawi, and men from Ghana and Rwanda, were aware of mother-to-child transmission of HIV. More than six in ten females from Ghana and Eritrea, males from Malawi, and males and females from Kenya, Ethiopia, Lesotho, and Tanzania, knew of mother-to-child transmission. But less than six in ten men and women from Uganda and Nigeria had heard of this form of transmission. The differences in awareness between women with secondary education and above and women with no education were also very strong. Between 69 to 90% of women with secondary education and above had heard of mother-to-child transmission, but only 29 to 77% of women with no education had heard of it. Two other studies revealed quite low levels of mother-to-child transmission knowledge. Less than one third (32%) of first year university students in a Nigerian study knew of mother-to-child transmission (Ibe, 2005), and only 0.9% of *Table 3.*

Percentage of participants who knew of mother-to-child transmission of HIV, via breastfeeding

		Gender		Education level Female	
	Country	Male	Female	Secondary+	None
CBS Kenya, MOH Kenya & ORC Macro (2004)	Kenya	68%	72%	80%	51%
CSA Ethiopia & ORC Macro (2006)	Ethiopia	74.5%	69%	90%	61%
GSS, NMIMR & ORC Macro (2004)	Ghana	75%	73%	87%	56%
INSR Rwanda & ORC Macro (2006)	Rwanda	82%	80%	87%	77%
MOH Uganda & ORC Macro (2006)	Uganda	55%	57.5%	69%	50%
MOHSW Lesotho, BOS & ORC Macro (2005)	Lesotho	67%	74%	77%	63%
NPC Nigeria & ORC Macro (2006)	Nigeria	56%	46%	76%	29%
NSEO Eritrea & ORC Macro (2003)	Eritrea	-	70%	74.5%	63%
NSO Malawi & ORC Macro (2005)	Malawi	67%	75%	-	-
TACAIDS, NBS & ORC Macro (2005)	Tanzania	63%	69%	82%	59%

participants in the community-based survey in Ethiopia knew of this mode of transmission. This high variation in knowledge of mother-to-child transmission needs to be addressed in education programs aimed at both sexes.

Myths about the spread of HIV

In addition to knowing about the correct ways that HIV can be transmitted, and how to prevent the chances of transmission, it is also important to reject incorrect beliefs about transmission. Three common misconceptions are that HIV can be transmitted by mosquito bites, by sharing food with another person who has HIV, or by supernatural means. In the nation-wide surveys of men and women in sub-Saharan African countries, differences were present between the genders; however these differences were minor (in the order of 0-16%).

Overall, a high proportion of women had misconceptions about methods of HIV transmission (see table 4). As would be expected, women from rural areas and women with no education had the lowest knowledge levels when compared to those from urban areas and with at least secondary education. However, women from Rwanda appear to be an exception, as their knowledge levels were high across all demographics when compared with other countries (INSR Rwanda & ORC Macro, 2006). Rwandan women exhibited the highest levels of awareness that mosquitoes, sharing food, and the supernatural were not methods of HIV transmission. These high levels of awareness occurred regardless of urban/rural location or education level.

Knowledge that mosquitoes cannot infect a person with HIV was quite low across the nation-wide studies (see table 4). When the percentages of women who knew that HIV could not be transmitted by mosquitoes were compared in terms of their education levels, the difference between women who had no education and women with secondary education and above was astonishing! If women from Rwanda were excluded from the

Table 4. Percentage of females who correctly answered that HIV *cannot* be transmitted by mosquitoes, by sharing food, or by supernatural means

		Residency		Education level	
	Country	Urban	Rural	Secondary+	None
Mosquitoes					
CBS Kenya, MOH Kenya & ORC Macro (2004)	Kenya	75%	56%	83%	25%
CSA Ethiopia & ORC Macro (2006)	Ethiopia	71%	42%	83%	37%
GSS, NMIMR & ORC Macro (2004)	Ghana	65%	46%	86%	43%
INSR Rwanda & ORC Macro (2006)	Rwanda	88%	80%	93%	72%
MOH Uganda & ORC Macro (2006)	Uganda	67%	54%	74%	46%
MOHSW Lesotho, BOS & ORC Macro (2005)	Lesotho	54.5%	40%	78%	25%
NHIS/SA et al. (1998)	South Africa	49%	39%	-	-
NPC Nigeria & ORC Macro (2006)	Nigeria	50%	30%	75%	28%
TACAIDS, NBS & ORC Macro (2005)	Tanzania	82%	72%	91%	61%
Sharing Food					
CSA Ethiopia & ORC Macro (2006)	Ethiopia	90%	58%	96%	53%
GSS, NMIMR & ORC Macro (2004)	Ghana	82%	62%	92%	55%
INSR Rwanda & ORC Macro (2006)	Rwanda	95%	88%	97%	81%
MOH Uganda & ORC Macro (2006)	Uganda	86%	75%	90%	66.5%
MOHSW Lesotho, BOS & ORC Macro (2005)	Lesotho	76.5%	52%	92.5%	26%
NHIS/SA et al. (1998)	South Africa	78.5%	58%	-	-
NPC Nigeria & ORC Macro (2006)	Nigeria	59%	37.5%	87%	33%
Supernatural means					
CSA Ethiopia & ORC Macro (2006)	Ethiopia	91%	66%	96%	62%
GSS, NMIMR & ORC Macro (2004)	Ghana	51%	42%	71%	42%
INSR Rwanda & ORC Macro (2006)	Rwanda	95%	91%	96%	87.5%
MOH Uganda & ORC Macro (2006)	Uganda	92%	83%	94%	72%
MOHSW Lesotho, BOS & ORC Macro (2005)	Lesotho	88.5%	77%	93%	54%
NPC Nigeria & ORC Macro (2006)	Nigeria	51%	34%	69%	32%
TACAIDS, NBS & ORC Macro (2005)	Tanzania	87%	82.5%	93%	72%

comparison (because they exhibit the highest levels of knowledge regardless of residency or education), three-quarters of women and above (74 – 91%) with at least secondary school education knew that HIV could not be transmitted by mosquitoes, compared with one-quarter to less than two-thirds of women with no education (25 – 61%). Differences were also present when urban and rural women were compared; but a lot of uncertainty was present in both groups. If Rwanda is excluded from the analysis, urban women (49 – 82%) still have a lot of uncertainty about whether mosquitoes can transmit HIV; however, their knowledge is slightly better than rural women (30 – 72%). It is important to note that 'avoiding mosquitoes' as a method of prevention was the item that not only had the lowest percentage of correct responses for women in the nation-wide South African study, but was also the item that had the highest percentage of "don't know" responses, with 15.9% of urban women and 20.5% of rural women uncertain of the correct answer (NHIS/SA et al., 1998). However, a study of young rural women from Burkina Faso revealed quite high awareness that mosquitoes cannot transfer HIV. Out of the 300 women who participated, only six women (2%) incorrectly believed that HIV can be transmitted via mosquitoes or sharing food (Sarker et al., 2005)!

The nation-wide studies revealed that with the exception of women from Nigeria, urban women and women with secondary education from six other countries have a high level of knowledge that HIV cannot be transmitted by sharing food with someone who is infected (see table 4). More than three quarters (76 – 95%) of urban women and more than nine in ten (90 – 97%) of women with at least secondary education knew that sharing food is not a method of HIV transmission, but only 59% of urban women and 87% of secondary-educated women from Nigeria knew this. With the exception of Rwanda, there was a huge gap in knowledge between women with secondary education and above, and women with no education within each country. For example, 92.5% of secondary-educated women in Lesotho were aware that HIV could not be transmitted by sharing food, but only 26% of the women with no education were aware of this! There were also large differences between urban and rural women, but they were not as strong as differences in education levels.

Women from Ghana and Nigeria exhibited the lowest levels of knowledge that HIV cannot be transmitted via supernatural means across the nation-wide studies (see table 4). While urban women (87 – 95%) and secondary-educated women (93 – 96%) from the other five countries (Ethiopia, Rwanda, Uganda, Lesotho and Tanzania) had an almost universal awareness that HIV cannot be caused by supernatural means, only half (51%) of the women from urban areas and seven in ten (69 – 71%) women who had secondary education from Ghana and Nigeria knew this. The lower knowledge levels for women in Ghana and Nigeria are also noticeable when women from rural areas and women with no education are studied separately. At least two thirds (66 – 91%) of women from rural areas and over half of women with no education (54 – 87.5%) knew that HIV could not be caused by supernatural means, but well under half the women from Ghana (42%) and Nigeria (32 – 34%) from rural areas and with no education knew this. While there were definitely differences between the urban/rural locations and across educational status in each country, the differences were not as large as they were for mosquitoes and sharing food. Differences in location and education levels were the strongest for Ethiopia, as were education levels for Lesotho.

Three separate studies conducted in black South African townships showed quite high levels of misconceptions. Just over one in ten (11%) participants from one community sample (Kalichman & Simbayi, 2004) and nearly one half (43%) of participants from another (Kalichman & Simbayi, 2003) incorrectly believed that AIDS was caused by supernatural means. In a sample of youth from townships, over one-third of participants (39%) believed that spirits and supernatural forces cause AIDS (Simbayi et al., 2005). Three different studies of different population groups in Ethiopia also revealed quite high levels of misconceptions about methods of HIV transmission. Nearly one quarter of students attending high schools in Addis Ababa, Ethiopia, had misconceptions

about methods of transmission. These misconceptions included transmission by mosquito bites, and wearing clothes, sharing food, eating, shaking hands, and sharing toilets with people with HIV/AIDS. No major differences were reported between the responses of the male and female students (Cherie et al., 2005). One quarter (25%) of the participants in a study from rural high schools in Ethiopia believed that mosquitoes can carry the virus (Alene et al., 2004). High numbers of participants reported incorrect modes of transmission, such as by mosquitoes (37.5%), kissing (26%) and saliva transfer (33%), sharing toothbrushes (88%), sharing property (24%) and sharing toilets (22%), from the study of four different target groups living around two large cities in Ethiopia. Farmers in particular, followed by sex workers, reported higher levels of misconceptions (Yerdaw et al., 2002).

Asera, Bagarukayo, Shuey and Barton (1997) examined the letters that were written to a weekly newspaper health advice column ('Dr AMREF') in Kampala, Uganda. Of the 1252 letters (published and unpublished), more than 700 asked questions about sexual health and behaviour, STDs, and HIV/AIDS. A large number of queries focused on methods of transmission, including questions about obscure modes that are linked to everyday activities (such as eating), uncertainty about methods of transmission that have been ruled out (such as mosquito bites), and difficulties in trying to integrate HIV/AIDS facts with suggested behaviour (for example, one letter writer knew HIV was present in saliva, and couldn't understand why authorities said it was safe to kiss). The large number of letters that were querying methods of transmission highlights the uncertainty that many people have, and the need for education programs to explain *why* HIV cannot be transmitted by certain methods.

It is obvious that there is a vast lack of knowledge about incorrect methods of HIV transmission in African communities. Women with secondary education and above by far have the greater knowledge in this area. Urban women have the next highest levels of knowledge, but even a large proportion of them still have misconceptions. The percentage of women without any education who reject those three common misconceptions is shockingly low. Large percentages of participants in the selection of studies from South Africa and Ethiopia also demonstrate high levels of incorrect beliefs. There needs to be a much higher level of awareness about misconceptions in women across all the demographic domains. Misconceptions about the transmission of HIV can lead to discrimination and stigmatisation against people with HIV/AIDS. Fear about infecting others may also prevent those infected from getting the care and help they need (WHO, 2000). Discrimination against people living with HIV/AIDS can lead to violations of human rights, such as denial of health care, work, education, and so on (UNAIDS, 2005).

Methods of Prevention

Having accurate knowledge of the correct methods to reduce the risk of HIV infection is vital. Because the most common method of HIV transmission is via sexual encounters (WHO, 2000), the three main prevention methods are aimed at reducing this. Abstaining from sex, limiting sex to one faithful uninfected partner, or using condoms are the three recommended methods to reduce the risk of HIV transmission via sexual intercourse. These three methods make up the 'ABC' formula that is used in education campaigns promoted in Africa – Abstain, Be faithful, and use a Condom (UNAIDS, 2006b). African women need to know the importance of these three methods against HIV infection. The studies reveal, however, that many African women are lacking correct knowledge about how to protect themselves.

A higher percentage of men than women in each nation-wide study (see table 5 for a list of the studies) were aware that using condoms every time (64 – 92% of men compared to 40 – 86% of women), limiting sex to one faithful, uninfected partner (76 – 90% versus 60 – 91%), and abstaining from sex (30 – 90% versus 17 – 92.5%) were all methods to reduce the risk of HIV infection. With the

exception of Lesotho Tanzania, and Uganda, a higher percentage of men than women in each country knew about these preventative measures, but generally the differences were small. In Lesotho, more women than men knew about all three methods of prevention, and in Tanzania more women than men knew that limiting sex to one faithful, uninfected partner and abstaining from sex were effective methods. Similarly, in Uganda, more women knew the importance of abstinence as a protective method. More urban women than rural women were aware that using condoms (55 – 92% of urban women compared to 33 – 81% of rural women), limiting sex to a single, faithful, uninfected partner (59 – 96% versus 53 – 90%), and abstaining from sex (42 – 95% versus 30 – 92%) were all ways to reduce the risk of HIV infection. More urban women knew of these risk-reducing methods than rural women. However, Malawi was an interesting exception, as 3% more rural women knew that condoms could reduce the risk of HIV infection, and 1% more rural women knew that limiting sex to one faithful partner can reduce the risk. The gap between women with secondary education and above and women with no education within each country was generally quite large when they were compared on each of the three prevention methods. A much higher proportion of secondary-educated women knew that condoms (60 – 97% of secondary educated women compared to 30 – 74% of women with no education), limiting sex to a faithful, uninfected partner (72 – 98% versus 39.5 – 85%), and abstinence (46.5 – 96% versus 8 – 87%) could reduce the risk of HIV infection. Interestingly in Rwanda, 2% more women with no education compared to women with secondary education knew that abstaining from sex could reduce the risk of HIV.

Women's knowledge of the three methods that can prevent HIV transmission via sexual intercourse varied amongst the nation-wide studies (see table 5). More than three quarters of women from Ghana, Rwanda, Lesotho, South Africa, and Tanzania knew about each of the three methods for HIV prevention. While these five countries represent the highest proportions of knowledgeable women, the knowledge of prevention methods could not be considered universal among women, as there is still a high proportion of women from each of those countries who are unaware of these HIV prevention methods. Knowledge levels were the lowest for women from Ethiopia, Zimbabwe, and Nigeria. Less than two thirds of women in each country knew of each preventative method.

Limiting sex to one faithful, uninfected partner appeared to be the method known by the highest proportion of women in each country to prevent HIV. Only women in Zimbabwe, Namibia and Tanzania recorded higher percentages for other preventative methods (i.e., condoms and abstinence). More than three-quarters of women from each country, except for Ethiopia, Zimbabwe, Nigeria and Malawi, knew of this method. The number of women who knew that condoms or abstaining from sex were also effective methods varied between the countries. In some countries, the majority of women were aware of limiting sex and condom use, but fewer knew about abstinence. For example, over three-quarters of Namibian women knew that condoms and limiting sex were prevention methods, but only a third knew of abstinence! On the other hand, many women in some countries knew about limiting sex and abstaining from sex, but fewer knew about the importance of condoms. Nearly nine in ten women in Uganda knew about the importance of limiting sex to a faithful, uninfected partner, and of abstinence, but only two thirds knew of condoms. Large differences like this were also noticed in women from Kenya, Ethiopia, Malawi, and Tanzania.

***Table 5*. Percentage of females who correctly responded that using condoms, limiting sex to one uninfected, faithful partner, and/or abstaining from sex were all effective methods to reduce the risk of HIV infection via sexual transmission**

	Country	Using condoms every time	Limit sex one uninfected, faithful partner	Abstaining from sex
CBS Kenya, MOH Kenya & ORC Macro (2004)	Kenya	61%	80.5%	79%
CSA Ethiopia & ORC Macro (2006)	Ethiopia	40%	62.5%	62%
CSO Zimbabwe & Macro International	Zimbabwe	66%	63%	17%
DNS Guinea & ORC Macro (2006)	Guinea	71%	88%	68%
GSS, NMIMR & ORC Macro (2004)	Ghana	73%	86%	79%
INSR Rwanda & ORC Macro (2006)	Rwanda	80%	87%	82%
MOH Uganda & ORC Macro (2006)	Uganda	68%	88%	87%
MOHSS Namibia (2003)	Namibia	86%	76%	35%
MOHSW Lesotho, BOS & ORC Macro (2005)	Lesotho	77.5%	82%	78%
NHIS/SA et al. (1998)	South Africa	87%	87%	-
NPC Nigeria & ORC Macro (2006)	Nigeria	45%	60%	-
NSEO Eritrea & ORC Macro (2003)	Eritrea	68%	89%	-
NSO Malawi & ORC Macro (2005)	Malawi	57%	68%	71%
TACAIDS, NBS & ORC Macro (2005)	Tanzania	78.5%	91%	92.5%

Other studies among different demographic groups (that had combined totals for males and females) also revealed mixed levels of knowledge. The most commonly reported HIV prevention methods among 285 first year university students in Nigeria were safe sex with condoms (77.2%), abstinence (38.6%), and use of personal instruments, such as razors (36.8%) (Ibe, 2005). Sexually active adolescents had more information about prevention behaviours for HIV, such as condom use for casual sex (66% vs. 47%), monogamy (63% vs. 44%), and avoiding causal sex (53% vs. 39%). However, the overall percentage of adolescents who knew about these methods was low (Araoye & Adegoke, 1996). The knowledge of preventative measures in young rural-urban migrants in Nigeria was quite low (Smith, 2004a, 2004b). Abstinence (37 – 44%), using condoms (29 – 41%), and limiting sex to one partner (9 – 10%) were known by very few participants, but avoidance of 'immoral sex' (8 – 22%) was another method reported as a way to prevent HIV infection (Smith, 2004a)! Washing after sex is another common misconception. Approximately one quarter of participants in two different studies in black townships in South Africa believed that washing after sex can prevent and protect against AIDS (Simbayi et al., 2005; Kalichman & Simbayi, 2003).

Understanding how to protect oneself against HIV infection is vital. Variation in levels of knowledge for each method across the countries could be the result of different health campaigns within each country. Some countries might emphasise one method more than others, or may fail to mention a certain method altogether. Overall, the number of women who knew about these methods to reduce the risk of HIV infection was low, especially in rural areas and among women with no education. While knowledge does not necessarily match behaviour, if such high numbers of women are unaware of the *importance* of the protective methods, how much emphasis are they going to place on using them?

Attitudes about condom use

Condoms are promoted as one of the primary prevention methods for HIV infection because they can prevent pregnancy *and* reduce the risk of STI and HIV infection. While there are both male and female condoms, female condoms are typically more expensive and have not been promoted as extensively as male condoms (UNAIDS, 2006b; WHO, 2000). Because attitudes towards female condoms have not been examined as extensively as attitudes towards male condoms, this review will be concerned with attitudes towards male condoms unless otherwise stated. Attitudes and beliefs held about condoms can have an effect on their usage by men and women, so it is necessary to be aware of what attitudes exist so that they can be changed through educational campaigns.

There are a wide range of attitudes towards condoms and reasons why they are not used (see table 6). Based on their conversations with sex workers, their clients, and other men in the Mombasa district of Kenya (which has important port, rail, trucking, and tourism industries) during an observational study, field workers compiled a list of *at least 50* reasons why men do not use a condom (Thomsen, Stalker & Toroitich-Ruto, 2004)! These 50 reasons were organised into six main categories: condoms are not pleasurable, condoms are defective, condoms are harmful, condoms are unnecessary, condoms are too hard to use, and external forces prevent their use.

The most common attitude towards condoms was that they were not pleasurable during sex (James, Reddy, Taylor & Jinabhai, 2004; Jegede & Odumosu, 2003; Maharaj & Cleland, 2004; Manuel, 2005; Mufune, 2005; Nuwaha et al., 1999; Prata, Vahidnia & Fraser, 2005; Plummer et al., 2006; Reddy, Meyer-Weitz, van den Borne & Kok, 1999; Simbayi et al., 2005; Sunmola, 2005; Thomsen et al., 2004). While this attitude was held by men and women, far more men than women held this and similar attitudes (see table 6). Between one third and one half of men had these attitudes. Similar attitudes are that condoms take the fun out of sex, they get in the way of sex, they prevent flesh-to-flesh contact, and they reduce intimacy and sexual pleasure. There were also the attitudes that condoms are unnatural (Simbayi et al., 2005), that they are a waste of sperm (Nuwaha et al., 1999; Reddy et al, 1999), and they cause a man to become impotent and lose his virility (Nuwaha et al., 1999; Reddy et al, 1999). A higher percentage of men than women agreed with these attitudes (see table 6).

Table 6. Percentage of women and men in agreement about the common attitudes towards condoms and the use, from selected studies

Attitude	% Women in Agreement	% Men in Agreement
Condoms prevent pregnancy if used correctly	68-83%	69-87%
Condoms reduce the risk of STIs if used correctly	65-88%	74-89%
Condoms reduce the risk of HIV/AIDS	64-83%	72-89%
Condoms are important to use every time	88%	82%
Using condoms shows you care about you & your partner's health	88%	91%
Condoms are safe	71%	75%
Condoms take the fun out of sex/ get in the way of sex	18-36%	30-51%
Condoms reduce intimacy and sexual pleasure	17-34%	35-44%
Condoms are like masturbation	19%	41%
Condoms are a waste of sperm	20%	45%
Condoms cause a man to lose virility	15%	33%
Condoms are unnatural	30%	47%
Using condoms shows you don't trust your partner	23-35%	25-45%
Insisting on using condoms each time will cause partner violence	14%	8%
Partner dislikes condoms	46-50%	47%
Condoms are embarrassing to buy/use	13-19%	8-17%
Condoms break or slip easily	29-50%	33-56%

Attitude	% Women in Agreement	% Men in Agreement
Condoms can harm the body	5-11%	7-9%
Condoms will cause STIs	3%	5%
Using condoms means you have AIDS	8%	14%
Condoms are difficult to access	15.5-23%	15-16%
Overseas condoms are ineffective	9%	19%
Free condoms are unsafe	44%	48%

Sources: James et al., 2004; Maharaj & Cleland, 2004; Mbizvo et al., 2003; Olley & Rotimi, 2003; Prata et al., 2005; Reddy et al., 1999; Simbayi et al., 2005.

There were also the attitudes that suggest that condoms are unsafe. A small percentage of men and women thought that condoms are harmful and can cause health problems (James et al., 2004; Reddy et al, 1999; Sunmola, 2005; Thomsen et al., 2004), and that they can get stuck in a woman's vagina and make her sick or die (Hart et al., 1999; Nuwaha et al., 1999). More men than women also thought that condoms can slip or break easily (so using them is pointless) (Maharaj & Cleland, 2004; Prata et al., 2005; Thomsen et al., 2004), but the percentage both of men and women in agreement with this attitude was high, ranging from at least one in five people to one half of them (see table 6). There was also the common attitude that free condoms are unsafe and unpleasant (Mufune, 2005; Simbayi et al., 2005), held by almost half of the men and women (see table 6), and that the safety of condoms was actually misleading, because of the (incorrect) idea that condoms have tiny holes in them that HIV/AIDS can slip through (Nuwaha et al., 1999; Thomsen et al., 2004). In addition, some men and women held beliefs that condoms were actually dangerous, because Westerners and white people introduced condoms laced with HIV/AIDS to Africa to reduce the population (Mufune, 2005; Nuwaha et al., 1999; Thomsen et al., 2004)!

While more women than men agreed that condoms are important to use every time you have sex (see table 6), there were also many attitudes held about women who carried or used condoms that prevented women from using them. There was the common attitude that women and girls who carried condoms were promiscuous, and those who insisted on their use were too experienced. This attitude was present both in women and men, and prevented many women from attempting to use condoms. The attitude that women and girls who carried or requested the use of condoms were promiscuous was identified in most studies about condom use (Iwuagwu et al., 2000; Jegede & Odumosu, 2003; MacPhail & Campbell, 2001; Maharaj & Cleland, 2004; Manuel, 2005; Nuwaha et al., 1999; Plummer et al., 2006; Smith, 2003; Thomsen et al., 2004). Focus group discussions with 94 Akamba girls aged 15 – 19 years from secondary schools in rural Kenya revealed that they were well aware of the attitudes towards girls who carried condoms (Nzioka, 2004). They mentioned that girls who carried condoms or insisted on their use were labelled as promiscuous or prostitutes (especially by the boys), whereas boys were seen as responsible. The girls who were interviewed explained that premarital sex was highly disapproved of (especially for young women), so carrying condoms was like an admission of having had sex (Nzioka, 2004).

There was also the concern from women that asking to use condoms during sex would lead to violence (Iwuagwu et al., 2000). More women than men thought insistence on condom use would lead to partner violence (see table 6). Many women also feared abandonment if they insisted on the use of a condom. Some reported that men would take "advantage of women's emotions and threaten to discontinue the relationship" if the woman insisted on condom use (Iwuagwu et al., 2000, p. 510). The financial implications of this abandonment may cause many women to conclude that they can't use condoms (Ackermann & de Klerk, 2002; Iwuagwu et al., 2000). Another common attitude was that using condoms, or suggesting the use of condoms, shows that you don't trust your partner (James et al., 2004; MacPhail & Campbell, 2001; Manuel, 2005; Prata et al., 2005; Reddy et al, 1999; Smith, 2003). Some women were also concerned that men may deliberately sabotage the effectiveness of condoms by putting holes in them or slipping them off during sex so

that they may impregnate the woman or infect her (Hart et al., 1999; Iwuagwu et al., 2000; Mufune, 2005). Many men confirmed that they actually did this (Hart et al., 1999). Scarily, one of the reasons not to use a condom reported by several men was that "if you are infected, having unprotected sex with as many other people as possible will allow you to pass the disease onto them and eliminate it from yourself" (Thomsen et al., 2004, p. 432)!

Despite quite high levels of agreement with some of the negative attitudes towards condoms, it is important to note that the highest levels of agreement in African men and women concerned positive attitudes towards condoms (see table 6). It is pleasing to see that high percentages of men and women believe that condoms can protect against pregnancy, STIs, and HIV/AIDS. A high percentage of men and women also believe that condoms are important to use every time, and using them shows that you care about your own and your partner's health. A fairly high percentage of men and women also agree that condoms are safe to use. The negative attitudes and beliefs about the safety of condoms, however, must be addressed if the use of condoms is to increase.

Conclusion

Across all the studies, African males usually had greater knowledge of HIV/AIDS and related topics than African women although in a few studies a large number of males *and* females had an equally good knowledge of HIV/AIDS. Rwanda's nation-wide study, for example, identified large numbers of knowledgeable people, regardless of gender, location, or education level (INSR Rwanda & ORC Macro, 2006). Knowledge of mother-to-child-transmission of HIV (via breastfeeding specifically) was an exception – in half of the studies examined, a greater percentage of males were aware of mother-to-child transmission, but in the other half, a greater percentage of females were aware. Aside from these few exceptions, it was very clear that a smaller proportion of African women were aware of HIV/AIDS and its related topics than African men. The factors that make African women so vulnerable to HIV/AIDS could also account for why African women have poorer knowledge of HIV/AIDS than men. Taboos associated with the discussion of sexuality and sexual health, the submissive role of women in a relationship, and the male control of decision-making regarding sexual relations might explain why African women are not as exposed to HIV/AIDS messages as men.

African women often receive less education than men, generally because it is not as valued to educate a female (UNAIDS, 2006b). Many of the sexual health programs are aimed at adolescents and are conducted through schools (UNAIDS, 2006d). This could also explain why so many more African women with secondary education and above know about HIV/AIDS, compared to those with no education. The greatest gap in knowledge levels exists between women with no education and women with secondary education and above. Lack of knowledge could not just be explained by a lack of *attendance* at school, however, because there generally are other programs in the community, such as mass communication campaigns, that target all women (UNAIDS, 2006d). The lack of knowledge may be explained by low literacy levels. These African women may be exposed to information via other sources, such as in health care centres, but poor reading ability and a poor understanding of how the body works (such as what an immune system is, how the reproductive system works, etc) may drastically reduce their ability to obtain and comprehend the information. Urban women also have better knowledge about HIV/AIDS than their rural counterparts. This could easily be explained by the difficulty in getting education programs to women in remote areas. UNAIDS (2006d) reported that the most common prevention programs and activities in Africa include HIV/AIDS education in schools, peer education for high risk groups (e.g., out-of-school youth, commercial sex workers, drug users), widespread communication campaigns (via the radio, pamphlets, posters, etc) against risky behaviour, HIV testing for pregnant women (plus counselling and treatment if the HIV test result is positive), and free condom distribution. However, it is obvious that more programs tailored to women, especially those with low education levels and those from rural areas, are needed.

It is important to note that in many African countries HIV/AIDS knowledge has not been investigated.

The difficulty in collecting data from African countries with political unrest, oppressive governments, civil war, famine, and so on, may also indicate the difficulties such a country would have with organising and implementing HIV/AIDS education programs for its people. It is very likely that people, especially women, from these countries have much lower knowledge levels than those revealed in the studies reviewed here. People who flee these countries may also be at risk of not obtaining better HIV/AIDS health knowledge once they settle in a new country. Unfamiliarity with the place, culture, health system, and language may prevent the migrants from learning correct HIV/AIDS information. This may occur even in countries such as Australia, whose HIV/AIDS education programs have "long been regarded as one of the best in the world… the Australian Government has demonstrated leadership in HIV/AIDS prevention and health promotion" (UNAIDS, 2006e, p. 2).

The importance of education programs aimed at African women not only within the African countries, but in other nations that receive African migrants, cannot be underestimated. It is obvious from a review of the literature concerning African women and HIV/AIDS knowledge that this is a population with a high proportion of people lacking the correct information. In particular, women from rural areas and with no education lack correct information, and a large proportion of them have misconceptions about HIV/AIDS. While knowledge alone does not necessarily result in appropriate behaviour, a lack of accurate knowledge about correct HIV/AIDS facts and behaviours does not give women a chance to adopt preventative behaviours. Knowledge of HIV/AIDS is the primary step to reducing an epidemic that has drastic consequences for African women.

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Survey findings for sexual health knowledge in matched samples of West African and Australian women

Introduction

As noted in the literature review, most African people have heard of HIV/AIDS, but there is widespread misunderstanding about how HIV is spread, the consequences of infection, and how to protect against infection. The most vulnerable groups are poorly educated women, those from rural backgrounds, and women who are economically dependent on men.

The aim of the study reported below was to investigate sexual health knowledge in West African women who had migrated recently to Perth, Western Australia, in comparison to Australian women of similar age and educational background. An additional aim was to determine whether knowledge about sexual health issues differs between poorly- and well-educated West African women living in Perth.

Method

Subjects

The West African sample consisted of 51 women aged between 20 and 67 years (mean age $\pm$ S.D. 35.0 $\pm$ 10.6 years) who had lived in Australia between six months and five years (mean duration 2.3 $\pm$ 1.3 years). Questionnaires were also administered to 100 Australian women of European descent aged between 18 and 90 years (mean age 43.0 $\pm$ 17.8 years) who had lived in Australia between eight and 90 years (mean duration 36.3 $\pm$ 16.2 years).

Each respondent provided written informed consent for participating. The procedures were approved by the Murdoch University Human Research Ethics Committee.

Procedure

Eight West African women reviewed the questionnaire to ensure that the wording of questions was culture-appropriate, and were trained in questionnaire administration and in issues of confidentiality. Each woman interviewed 6-8 acquaintances and family members from the female West African migrant community in Perth, Western Australia. The first interview by each of the eight interviewers was supervised by the project coordinator to ensure that questions were administered in a standard manner and that answers were recorded correctly.

To collect comparative data from Australian women, eight female undergraduate psychology students were also trained in administration of the questionnaire. They each recruited 12 – 15 female adult acquaintances or family members to participate in the survey. The students were asked to recruit Caucasian women across the full age range, from young adult through to old age, and with different levels of education. The student interviewer explained the nature of items in the questionnaire to the respondent, obtained informed consent, and administered demographic items concerned with age, marital status, occupation, and education. The respondent filled out the remainder of the questionnaire in private, and returned it in a sealed envelope to the student interviewer.

Questions concerned with how HIV is spread, beliefs about what can be done to protect oneself against infection, the effectiveness of condoms in protecting against HIV and other sexually transmitted infections, and attitudes toward condom use were based on items used by Carey and Schroder (2002), Hoff, Green and Davis (2003) and Simbaya et al. (2005). The response categories were “true”, “false” or “unsure”.

The intention was to match each West African woman with an Australian woman of similar age and educational background. Although matching was successful for age, this was not possible for educational background because nine of the West African women had not attended school and another five had attended school for seven years or less. In contrast, all but one of the Australian women had attended school for at least eight years. Therefore, the West African sample was split into those with seven or fewer years of education (the poorly-educated group, *N* =14) and those with eight or more years of education (the well-educated group, *N* = 37). Each member of the well-educated group was then matched with an Australian woman of similar age and educational background. The demographic characteristics of each group are listed in Table 1 (page 35).

Data analysis

Sets of items were assembled for items concerned with transmission of HIV (e.g., by sharing a needle or by having oral sex with someone who has HIV), for myths about how HIV is spread (e.g., by spirits or supernatural forces, or by sharing kitchen utensils with someone who has HIV), for incorrect beliefs about protective factors (e.g., taking antibiotics or a vaccine protects against HIV), the effectiveness of condoms in protecting against infections such as HIV (e.g., sex with a condom means that you are protected from catching a disease), and attitudes toward condom use (e.g., condoms spoil sex, or partners dislike condoms). Responses were recoded into "correct" and "incorrect or unsure" categories, or into "true" and "false or unsure" categories for attitudes toward condom use.

Differences among the three groups (i.e., the matched West African and Australian samples, and the poorly-educated West African sample) were investigated in multivariate analyses of variance. Significant multivariate effects were explored further in univariate analyses of variance with planned contrasts between the matched West African and Australian samples, and between the poorly- and well-educated West African samples.

Results

Knowledge about transmission of HIV

As shown in Table 2 (page 36), most respondents recognized that sharing an injection needle with someone who has HIV, and having sex with more than one partner, increases the likelihood of being infected with HIV. Having oral or anal sex with a HIV-infected person was recognized less frequently as a risk factor for HIV.

Overall, West Africans were better informed than Australians about modes of HIV transmission [Pillai's trace = 0.262; $F(12,160) = 2.01$, $p<0.05$]. This was solely due to greater recognition by West Africans that sexually transmitted infections can increase the risk of HIV infection (Table 2).

Myths about the spread of HIV

The proportion of respondents who held incorrect beliefs about how HIV is spread differed markedly among the three groups [Pillai's trace = 0.779; $F(18,154) = 5.46$, $p<0.001$] (Table 3, page 37). The poorly-educated West Africans were the least-informed group, followed by the well-educated West Africans who, in turn, were less well-informed than the Australians on most items. However, it is noteworthy that around half of the Australian sample thought that HIV could be spread by mosquitoes, and one quarter thought that they could catch HIV by sharing a glass of water with someone who has HIV or by kissing.

Incorrect beliefs about protective factors

West African women held more incorrect beliefs about factors that protect against HIV than Australian women [Pillai's trace = 0.377; $F(16,154) = 2.23$, $p<0.01$] (Table 4, page 38). Nevertheless, 38% of Australian women thought that a natural skin condom works better against HIV than does a latex condom, and 22% of Australian women thought that there is a cure for HIV/AIDS. Similar proportions of poorly-educated and well-educated West African women held incorrect beliefs about factors that protect against HIV.

Effectiveness of condoms

Beliefs about the effectiveness of condoms for protecting against sexually transmitted infections such as HIV differed among the three groups [Pillai's trace = 0.374; $F(10,156) = 3.58$, $p<0.001$] (Table 5, page 39). A smaller proportion of poorly-educated West African women believed that sex without a condom increases the risk of sexually transmitted infection than well-educated West African women. Fewer West African than Australian women believed that condoms are effective at protecting against AIDS/HIV. On the other hand, a greater proportion of West African women believed that a condom provides full protection against infection than Australian women.

Attitudes toward condom use

Australian women generally had more positive views toward condom use than West African women, particularly those with lower levels of education [Pillai's trace = 0.844; $F(24,144) = 3.05$, $p<0.001$] (Table 6, page 40). In particular, the majority of poorly educated West African women thought that buying condoms is embarrassing or shameful, most people who carry condoms are just looking for sex, and that they would feel insulted if their husband or partner suggested using a condom. Moreover, a greater proportion of the West African than Australian women thought that it was difficult to bring up the topic of using condoms, and that if their husband or partner suggested using a condom this would indicate that he was suspicious or concerned about her past sexual behaviour, and/or that he was being responsible. Interestingly, only a minority of respondents thought that condoms spoilt sex. However, about half thought that condoms are unnatural, and the majority thought that partners dislike condoms.

Discussion

The main findings can be summarized as follows. West African and Australian women were well-informed about true modes of transmission of HIV; however, West African women also held many incorrect beliefs about how HIV is transmitted and how to protect against HIV. In addition, many West African women were unsure about the effectiveness of condoms in protecting against sexually transmitted infections such as HIV, and held negative attitudes toward condom use in general. Knowledge about sexual health issues was poorest in the least educated West African women, but even the more highly educated West African women had misconceptions about how HIV is spread, how to protect against HIV, and the effectiveness of condoms in protecting against sexually transmitted infections and HIV. Moreover, even the well-educated West African women had negative attitudes toward condom use. As noted in the Literature Review, myths and misconceptions about HIV are rife throughout sub-Saharan Africa. Unfortunately, the present findings suggest that sexual health knowledge has not changed greatly in West African women since their arrival in Australia six months to five years ago. Without specifically adjusting sexual health messages for new and emerging communities to accommodate cultural sensitivity and conceptual differences underpinned by entrenched cultural belief systems, acculturation processes alone cannot be relied upon to improve sexual health knowledge.

Although most West African women knew about true modes of transmission of HIV, they also held many incorrect beliefs about how the virus is spread and about how to protect against HIV infection. On the face of it some of these beliefs seem reasonable: for example, if HIV is contained in blood, then it could be spread by mosquitoes; or if other illnesses can be spread by contact with a sick person, then why not HIV? These beliefs may be amenable to change in simple educational programmes about HIV/AIDS. However, other beliefs based on folklore and superstition (e.g., HIV/AIDS is caused by spirits or supernatural forces) which are embedded within the culture of origin, may be more difficult to change because beliefs about the veracity of Western medicine would need to be accepted. Presumably beliefs such as these survive in vulnerable populations because of a pervasive fear of infection. Unfortunately, however, many of these erroneous beliefs result in alienation of HIV-infected people from support bases within their community.

Irrespective of their educational background, many of the West African women held false beliefs about how to protect themselves against HIV infection. Alarmingly, some of the women accepted the belief that a person can get rid of HIV/AIDS by having sex with a virgin, thus condoning an extremely dangerous practice. Furthermore, beliefs that there are vaccines or cures for HIV/AIDS may encourage unsafe sexual practices (e.g., sex without a condom), and obviously need to be targeted urgently.

As noted in the Literature Review, social and cultural taboos in many African societies about discussing sex prevent women from seeking information about HIV/AIDS, sexually transmitted infections, or using condoms. They may fear asking their partner to use a condom, as it may suggest that the woman has been unfaithful, that she doubts her partner, or that she is accusing him of having a sexually transmitted infection (Ackermann & de Klerk, 2002). Insisting on condom use may result in violence from the male partner or even abandonment. Poorly educated women who depend upon their male partner for economic survival are particularly vulnerable. This may explain why many West African women, particularly those with poor educational backgrounds, held negative attitudes toward condom use in this study.

The present survey has raised awareness of sexual health issues in the West African migrant community in Western Australia. It is important to capitalize on this heightened awareness to implement culturally-sensitive educational programmes about safe sexual practices within this community and within similar groups of people, many of whom are poorly-educated refugees from impoverished countries. Addressing this issue now may help to limit the spread of sexually transmitted infections both within new and emerging population groups and across the broader West Australian community.

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Table 1: Demographic characteristics

	West Africans (N = 51)		Australians (N = 37)
	Poorly-educated (N = 14)	Well-educated (N = 37)	
Age (years ± S.D.)	37.9 ± 8.4	34.0 ± 11.2	34.1 ± 12.4
Years at school:	1.7 ± 2.7	10.8 ± 1.6	11.3 ± 0.8
Educational level:			
8-12 years at school	0%	49%	51%
Technical college	0%	38%	35%
University	0%	13%	13%
Employment:			
Full-time work	7%	19%	54%
Part-time work	14%	32%	35%
Not working	79%	49%	11%
Married or de facto	36%	46%	32%
Speaks English at home	50%	92%	97%

The Australian women were matched for age and educational background with the well-educated West African women. These two groups were similar in marital status and the proportion who spoke English at home, but fewer of the West African women were employed full-time ($\chi^2(2)=15.2$, $p<0.001$). The poorly- and well-educated West African women were similar in age, employment and marital status, but a smaller proportion of the poorly-educated women spoke English at home ($\chi^2(1)=11.3$, $p<0.001$).

Table 2: Knowledge about transmission of HIV

	Proportion ± S.D. of Correct Responses			F ratio
	Poorly-educated West Africans (N = 14)	Well-educated West Africans (N = 36)	Australians (N = 37)	(2,84 d.f.)
Sexually transmitted infections can cause increased risk for HIV/AIDS (T)	.93 ± .27	.94 ± .23	.70 ± .46 ##	4.78 *
A pregnant woman can give HIV/AIDS to her baby (T)	.86 ± .36	.92 ± .28	.95 ± .23	.53
A person can get HIV by sharing an injection needle with someone who has HIV (T)	1.00 ± .0	.97 ± .17	1.00 ± .0	.70
A woman can get HIV if she has anal sex with a man (T)	.64 ± .50	.67 ± .48	.73 ± .45	.25
Having sex with more than one partner can increase a person's chance of being infected with HIV (T)	1.00 ± .0	.94 ± .23	.89 ± .31	1.00
A person can get HIV from oral sex (T)	.50 ± .52	.42 ± .50	.57 ± .50	.82

Each correct response was coded 1 whereas an incorrect or unsure response was coded 0. Thus, each mean value represents the proportion of respondents within that group who answered the item correctly.

* $p<0.05$ across all three groups; ## $p<0.01$ compared with the mean response in the well-educated West African group.

Table 3: Myths about the spread of HIV

	Proportion ± S.D. of Correct Responses			F ratio
	Poorly-educated West Africans (N = 14)	Well-educated West Africans (N = 36)	Australians (N = 37)	(2,84 d.f.)
HIV/AIDS is caused by spirits or supernatural forces (F)	.36 ± .50 ###	.75 ± .44	.97 ± .16 ##	15.0 ***
You can get HIV/AIDS by touching someone with HIV/AIDS (F)	.43 ± .51 #	.72 ± .45	.89 ± .31	6.55 **
You can get HIV from mosquito bites (F)	.14 ± .36	.25 ± .44	.51 ± .51 #	4.62 *
You can get HIV by sharing kitchen utensils (F)	.29 ± .47	.33 ± .48	.95 ± .23 ###	27.5 ***
You can get HIV from toilets (F)	.14 ± .36 ##	.50 ± .51	.84 ± .37 ###	14.3 ***
Coughing and sneezing spread HIV (F)	.29 ± .47 ##	.64 ± .49	.92 ± .48 ##	13.0 ***
A person can get HIV by sharing a glass of water with someone who has HIV (F)	.29 ± .47	.53 ± .51	.78 ± .42 #	6.54 **
People can get HIV by kissing (F)	.21 ± .43 ##	.61 ± .49	.76 ± .43	7.08 ***
A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV (F)	.14 ± .36 ###	.61 ± .49	.92 ± .28 ###	20.3 ***

Each correct response was coded 1 whereas an incorrect or unsure response was coded 0. Thus, each mean value represents the proportion of respondents within that group who answered the item correctly.
* p<0.05; ** p<0.01; *** p<0.001 across all three groups.
# p<0.05; ## p<0.01; ### p<0.01 compared with the mean response in the well-educated West African group.

Table 4: Incorrect beliefs about factors that protect against HIV

	Proportion ± S.D. of Correct Responses			F ratio
	Poorly-educated West Africans (N = 14)	Well-educated West Africans (N = 35)	Australians (N = 37)	(2,83 d.f.)
A person can get rid of HIV/AIDS by having sex with a virgin (F)	.64 ± .50	.60 ± .50	.97 ± .16 ###	9.11 ***
There is a cure for HIV/AIDS (F)	.50 ± .52	.37 ± .49	.78 ± .42 ###	7.26 ***
Showering or washing ones private parts after sex keeps a person from getting HIV (F)	.71 ± .47	.83 ± .38	.97 ± .16	3.73 *
There is a vaccine that can stop adults from getting HIV (F)	.79 ± .43	.60 ± .50	.86 ± .35 ##	3.55 *
A woman cannot get HIV if she has sex during her monthly period (F)	.64 ± .50	.77 ± .43	.89 ± .31	2.20
A natural skin condom works better against HIV than does a latex condom (F)	.36 ± .50	.37 ± .49	.62 ± .49 #	2.82
A person will not get HIV if he or she is taking antibiotics (F)	.64 ± .50	.77 ± .43	.89 ± .31	2.20
Using vaseline or baby oil with condoms lowers the chance of getting HIV (F)	.50 ± .52	.57 ± .50	.81 ± .40 #	3.45 *

Each correct response was coded 1 whereas an incorrect or unsure response was coded 0. Thus, each mean value represents the proportion of respondents within that group who answered the item correctly.
* $p<0.05$; *** $p<0.001$ across all three groups.
# $p<0.05$; ## $p<0.01$; ### $p<0.01$ compared with the mean response in the well-educated West African group.

Table 5: Effectiveness of condoms

	Proportion ± S.D. of Correct Responses			F ratio
	Poorly-educated West Africans (N = 14)	Well-educated West Africans (N = 36)	Australians (N = 34)	(2,81 d.f.)
There is a women's condom that can help decrease a woman's chance of getting HIV (T)	.35 ± .49	.50 ± .51	.41 ± .50	.50
Condoms are effective at protecting against AIDS/HIV (T)	.50 ± .52	.53 ± .51	.79 ± .41 #	3.43 *
Condoms are effective at protecting against sexually transmitted infections other than AIDS/HIV (T)	.64 ± .50	.61 ± .49	.82 ± .39	2.06
Sex without a condom increases the risk of getting a sexually transmitted infection (T)	.64 ± .50 #	.89 ± .32	.94 ± .24	4.25 *
Sex with a condom means that you are protected from catching a disease (F)	.21 ± .43	.31 ± .47	.62 ± .49 ##	5.37 **

Each correct response was coded 1 whereas an incorrect or unsure response was coded 0. Thus, each mean value represents the proportion of respondents within that group who answered the item correctly.
* $p<0.05$; ** $p<0.01$ across all three groups.
# $p<0.05$; ## $p<0.01$ compared with the mean response in the well-educated West African group.

Table 6: Attitudes toward condom use

	Proportion ± S.D. of Affirmative Responses			F ratio
	Poorly-educated West Africans (N = 13)	Well-educated West Africans (N = 36)	Australians (N = 36)	(2,82 d.f.)
Condoms spoil sex	.23 ± .44	.36 ± .49	.33 ± .48	.36
Condoms are unnatural	.54 ± .52	.58 ± .50	.42 ± .50	1.02
Partners dislike condoms	.62 ± .50	.67 ± .48	.50 ± .51	1.04
Buying condoms is embarrassing or shameful	.85 ± .38 ##	.44 ± .50	.17 ± .38 ##	12.1 ***
Most people who carry condoms are just looking for sex	.69 ± .48 #	.36 ± .49	.08 ± .28 ##	11.3 ***
It is difficult to bring up the topic of using condoms	.77 ± .44	.56 ± .50	.19 ± .40 ###	9.88 ***
If your husband or partner suggested using a condom you would feel:				
Like he cared about me	.69 ± .48	.44 ± .50	.53 ± .51	1.18
Relieved	.85 ± .38	.75 ± .44	.72 ± .45	.39
Insulted	.69 ± .48 #	.39 ± .49	.14 ± .35 #	8.25 ***
Like he was suspicious or concerned about my past sexual behaviour	.38 ± .51	.50 ± .51	.08 ± .28 ###	8.90 ***
Suspicious or concerned about their past sexual behaviour	.38 ± .51	.31 ± .47	.28 ± .45	.25
That he was being responsible	.77 ± .44	.47 ± .51	.25 ± .44 #	6.19 **

Each affirmative response was coded 1 whereas a negative or unsure response was coded 0. Thus, each mean value represents the proportion of respondents within that group who answered the item as being true.
* p<0.05; ** p<0.01 across all three groups.
# p<0.05; ## p<0.01; ### p<0.001 compared with the mean response in the well-educated West African group.

Appendix A: A Survey Instrument

Interviewer's name: _____

DEMOGRAPHIC INFORMATION

Age: _____ years Height: _____cm Weight: _____ kg

1. What is your family position?

Married: ☐ De-Facto: ☐ Divorced: ☐ Single: ☐ Widowed: ☐

2. How many people live in your home? _____

3. What suburb do you live in? _____

4. What is your current accommodation?

Rent ☐ Share ☐ Own ☐ Mortgage ☐

HomesWest ☐ With parents or relatives ☐

5. Are you:

Working Full Time ☐ Working Part Time ☐ Volunteer ☐

Unemployed ☐ Pensioner ☐ Home Duties ☐

Student ☐

6. Is your employment: Casual ☐ Permanent ☐

7. How many years of primary school do you have? _____

How many years of high school do you have? _____

Did you attend an educational institution beyond high school? _____

What completed educational qualifications do you have? _____

_____

8. How many years have you lived in Australia? _____

9. How many years have you spent living in the countryside? _____

How many years have you spent living in towns or cities? _____

10. Do you speak English at home? Yes ☐ No ☐

HYGIENE – ways of taking care of yourself and your family

People sometimes get sick after eating food ('food poisoning').

Do you think that symptoms of food poisoning can include: **(tick one or more boxes)**

☐ Nausea, vomiting and abdominal cramps

☐ Diarrhea

☐ Breathing difficulties

☐ Fever

☐ Headache

Do you think food poisoning can be due to: **(tick one or more boxes)**

☐ Poisons produced by bacteria that grow in food

☐ Chemicals sprayed on crops to kill insects

☐ Too much fat and sugar in processed foods

☐ Eating raw fruit and vegetables

☐ Chemicals added to purify water

☐ Unclean hands, utensils or food

Food Preparation

Please answer each question as "True", "False" or "Unsure".

1. Preparing food in advance increases the risk of food poisoning

   True [ ] False [ ] Unsure [ ]

2. Raw food should always be separated from cooked food

   True [ ] False [ ] Unsure [ ]

3. Improper food storage can make you sick

   True [ ] False [ ] Unsure [ ]

4. Meat should be cooked well done

   True [ ] False [ ] Unsure [ ]

5. If the refrigerator temperature is low does this reduce the risk of food poisoning?

   True [ ] False [ ] Unsure [ ]

6. Leaving cooked meat or chicken at room temperature for over four hours can be dangerous to our health when we eat them

   True [ ] False [ ] Unsure [ ]

7. Refreezing defrosted foods can be dangerous to our health when we eat them

   True [ ] False [ ] Unsure [ ]

8. Washing your hands before handling unwrapped raw or cooked foods reduces the risk of food poisoning

   True [ ] False [ ] Unsure [ ]

9. Washing your hands after going to the toilet reduces the risk of infections

   True [ ] False [ ] Unsure [ ]

10. Washing your hands after touching an animal reduces the risk of infections or illness

    True [ ] False [ ] Unsure [ ]

11. Keeping your food preparation area and utensils clean reduces the risk of food poisoning

    True [ ] False [ ] Unsure [ ]

12. Flies/cockroaches/insects can cause ill health

    True [ ] False [ ] Unsure [ ]

13. Sweet foods can cause holes in the teeth (tooth decay)

    True [ ] False [ ] Unsure [ ]

14. Brushing your teeth regularly prevents tooth decay

    True [ ] False [ ] Unsure [ ]

15. Coughing and sneezing near food spreads disease

    True [ ] False [ ] Unsure [ ]

Buying Food

Please answer each question as "Always", "Often", "Sometimes" or "Never".

1. When you buy packaged food, do you check when the food should be eaten by (the use-by or expiry date)?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

2. Do you read the use-by dates and instructions for storage written on the packaged foods?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

3. Do you wash your hands before eating and before touching foods?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

4. Do you wash fruit that is not peeled before eating it?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

5. After drinking a glass of milk, or adding it to tea or coffee, do you put the milk straight back in the fridge?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

6. If you realize you have left the milk out of the fridge during the night, do you put it in the fridge again?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

7. Do you use soap and water to wash your hands after going to the toilet?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

8. Do you cover food left on the table or in the kitchen to protect it from insects?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

9. Do you kill flies/cockroaches/insects when you see them in the house?

   Always [ ] Often [ ] Sometimes [ ] Never [ ]

10. Do you clean eating utensils/dishes/benches shortly after using them?

    Always [ ] Often [ ] Sometimes [ ] Never [ ]

11. Do you wash your hands after touching an animal?

    Always [ ] Often [ ] Sometimes [ ] Never [ ]

Personal Hygiene

Please answer each question by placing a tick in the appropriate box.

How often do you:

1. Bathe or shower

Less than once a day	[ ]
Once a day	[ ]
Twice a day	[ ]
More than twice a day	[ ]

2. Brush your teeth with toothpaste.

Less than once a day	[ ]
Once a day	[ ]
Twice a day	[ ]
More than twice a day	[ ]

3. Use dental cotton to clean your teeth.

Less than once a day	[ ]
Once a day	[ ]
Twice a day	[ ]
More than twice a day	[ ]

4. Wash your hands with soap and water.

Less than once a day	[ ]
Once a day	[ ]
Twice a day	[ ]
More than twice a day	[ ]

5. Wash your hair.

Everyday	[ ]
Once a week	[ ]
Twice a week	[ ]
Fortnightly	[ ]
Monthly or less	[ ]

Hygiene: General Areas

Please answer each question by ticking the appropriate box.

How often do you:

1. Wash your dishes

   Straight after eating meals [ ]
   The next day [ ]
   When there are no more dishes to use [ ]

2. Clean all your kitchen benches.

   Everyday [ ]
   Once or a few times a week [ ]
   Fortnightly [ ]
   Monthly or less [ ]

3. Clean your bathroom and toilet.

   Everyday [ ]
   Once or a few times a week [ ]
   Fortnightly [ ]
   Monthly or less [ ]

4. Change your bath towel.

   Everyday [ ]
   Once or a few times a week [ ]
   Fortnightly [ ]
   Monthly or less [ ]

5. Change your bed sheets and pillow cases.

   Everyday [ ]
   Once or a few times a week [ ]
   Fortnightly [ ]
   Monthly or less [ ]

6. Mop your kitchen floor.

   Everyday [ ]
   Once or a few times a week [ ]
   Fortnightly [ ]
   Monthly or less [ ]

Physical Health

Please answer each question as “True”, “False” or “Unsure”.

Do you think you can get sick from:

1. Shaking hands with a sick person?

   True [ ] False [ ] Unsure [ ]

2. Touching objects that a sick person has touched?

   True [ ] False [ ] Unsure [ ]

3. Talking closely with a sick person or by having them sneeze or cough on you?

   True [ ] False [ ] Unsure [ ]

4. Sitting more than 1 m (3 feet) away from a sick person?

   True [ ] False [ ] Unsure [ ]

5. Kissing a sick person on the cheek?

   True [ ] False [ ] Unsure [ ]

6. Eating food prepared by a sick person?

   True [ ] False [ ] Unsure [ ]

7. Changing the nappy of a sick child?

   True [ ] False [ ] Unsure [ ]

Please answer each question as “True”, “False” or “Unsure”.

Do you think you can get sick if:

1. You do not eat good food.

   True [ ] False [ ] Unsure [ ]

2. You do not prepare your food well.

   True [ ] False [ ] Unsure [ ]

3. You do not eat a balanced diet.

   True [ ] False [ ] Unsure [ ]

4. You do not take care of yourself.

   True [ ] False [ ] Unsure [ ]

5. You don't exercise.

   True [ ] False [ ] Unsure [ ]

6. You don't sleep well.

   True [ ] False [ ] Unsure [ ]

COPING WITH STRESS

Please tick one or more boxes.

When you feel stressed or feel as though you cannot cope, do you:

- ☐ Over-eat certain foods (e.g., sweet foods or greasy/fried foods)
- ☐ Eat less than usual
- ☐ Drink alcohol
- ☐ Sleep more than usual
- ☐ Sleep less than usual
- ☐ Wake up early
- ☐ Smoke more cigarettes than usual
- ☐ Take over-the-counter or prescribed drugs
- ☐ Take illegal drugs (e.g. marijuana, amphetamines, etc.)

EXERCISE

Please answer each question as "True", "False" or "Unsure".

Do you think exercise helps you:

1. To feel healthy and fit.

   True [ ] False [ ] Unsure [ ]

2. To feel like you've done something good.

   True [ ] False [ ] Unsure [ ]

3. To keep healthy.

   True [ ] False [ ] Unsure [ ]

4. To look good.

   True [ ] False [ ] Unsure [ ]

5. To relax, forget about your worries.

   True [ ] False [ ] Unsure [ ]

6. To control your weight.

   True [ ] False [ ] Unsure [ ]

7. To become slimmer.

   True [ ] False [ ] Unsure [ ]

8. Regular exercise can make bones stronger so that they do not break easily.

   True [ ] False [ ] Unsure [ ]

9. You can exercise even when you are old.

   True [ ] False [ ] Unsure [ ]

10. You need a lot of expensive equipment for exercise.

    True [ ] False [ ] Unsure [ ]

11. Regular exercise can help reduce your risk of having a blocked or burst blood vessel in your brain (a stroke).

    True [ ] False [ ] Unsure [ ]

12. Regular exercise can help prevent blockage of blood vessels in your heart (heart disease).

    True [ ] False [ ] Unsure [ ]

13. Women should not exercise during the first three months of pregnancy.

    True [ ] False [ ] Unsure [ ]

14. Sport is only for fit young people.

    True [ ] False [ ] Unsure [ ]

15. Too much exercise can be dangerous if you are not used to it.

    True [ ] False [ ] Unsure [ ]

16. Exercise must be painful before it does any good.

    True [ ] False [ ] Unsure [ ]

17. Regular exercise is important if you want to lose weight.

    True [ ] False [ ] Unsure [ ]

18. A short walk every day is better than no exercise at all.

    True [ ] False [ ] Unsure [ ]

19. People with heart disease should not exercise.

    True [ ] False [ ] Unsure [ ]

Express Yourself

Please answer each question as “True” or “False”.

1. I do not exercise as much as I should.

   True [ ] False [ ]

I do not exercise more because:

2. I do not enjoy exercise.

   True [ ] False [ ]

3. Parts of my body are always in pain after exercise.

   True [ ] False [ ]

4. I’m too fat to exercise.

   True [ ] False [ ]

5. I have a chronic illness, which prevents me from exercising.

   True [ ] False [ ]

6. I’m too old to exercise.

   True [ ] False [ ]

7. I don’t like sporting activities.

   True [ ] False [ ]

8. I don’t have enough time to exercise.

   True [ ] False [ ]

9. I don’t have enough energy to exercise.

   True [ ] False [ ]

10. There’s no one to exercise with.

    True [ ] False [ ]

11. I don’t have suitable clothes/equipment for exercise.

    True [ ] False [ ]

12. Lack of transport prevents me from exercising.

    True [ ] False [ ]

13. Lack of child care facilities prevents me from exercising.

    True [ ] False [ ]

14. Lack of money prevents me from exercising.

    True [ ] False [ ]

Diet and Health

Please answer each question as "True", "False" or "Unsure".

Do you think that:

1. What you eat can determine whether you get heart disease or cancer.

   True [ ] False [ ] Unsure [ ]

2. There are so many recommendations about what is healthy to eat; it's hard to know what to believe.

   True [ ] False [ ] Unsure [ ]

3. I know that what I eat and drink now are healthy, so there is no reason for me to make a change.

   True [ ] False [ ] Unsure [ ]

4. Some people are born fat and some thin; there is not much you can do to change this.

   True [ ] False [ ] Unsure [ ]

5. When shopping for food it is important to consider whether the food I choose to buy is healthy or not healthy.

   True [ ] False [ ] Unsure [ ]

Please answer each question by placing a tick in the appropriate box.

How often do you have the following foods and drinks?

1. Vegetables.

   ☐ . Not at all
   ☐ Fortnightly or less
   ☐ Once a week
   ☐ Every few days
   ☐ One or more times a day

2. Cakes, biscuits or ice-cream.

   ☐ . Not at all
   ☐ Fortnightly or less
   ☐ Once a week
   ☐ Every few days
   ☐ One or more times a day

3. White bread, white rice or pasta.

- ☐ . Not at all
- ☐ Fortnightly or less
- ☐ Once a week
- ☐ Every few days
- ☐ One or more times a day

4. Wholemeal/grain bread or brown rice.

- ☐ . Not at all
- ☐ Fortnightly or less
- ☐ Once a week
- ☐ Every few days
- ☐ One or more times a day

5. Red meat.

- ☐ . Not at all
- ☐ Fortnightly or less
- ☐ Once a week
- ☐ Every few days
- ☐ One or more times a day

6. Lean cuts of chicken or pork.

- ☐ . Not at all
- ☐ Fortnightly or less
- ☐ Once a week
- ☐ Every few days
- ☐ One or more times a day

7. Oily fish (e.g. Herring, Salmon, Sardines, Pilchards, Trout, Fresh Tuna, Mackerel, Sprats, Swordfish and Kippers).

- ☐ . Not at all
- ☐ Fortnightly or less
- ☐ Once a week
- ☐ Every few days
- ☐ One or more times a day

8. Fruit.

- ☐ . Not at all
- ☐ Fortnightly or less
- ☐ Once a week
- ☐ Every few days
- ☐ One or more times a day

9. Butter, cheese or full-cream milk.

☐ . Not at all
☐ Fortnightly or less
☐ Once a week
☐ Every few days
☐ One or more times a day

10. Fried foods.

☐ . Not at all
☐ Fortnightly or less
☐ Once a week
☐ Every few days
☐ One or more times a day

11. Full-sugar soft drinks.

☐ . Not at all
☐ Fortnightly or less
☐ Once a week
☐ Every few days
☐ One or more times a day

12. Mineral water.

☐ . Not at all
☐ Fortnightly or less
☐ Once a week
☐ Every few days
☐ One or more times a day

13. Black or green tea.

☐ . Not at all
☐ Fortnightly or less
☐ Once a week
☐ Every few days
☐ One or more times a day

14. Coffee.

☐ . Not at all
☐ Fortnightly or less
☐ Once a week
☐ Every few days
☐ One or more times a day

15. Red wine.

- ☐ . Not at all
- ☐ Fortnightly or less
- ☐ Once a week
- ☐ Every few days
- ☐ One or more times a day

Fat provides concentrated source of energy.
Carbohydrate foods are easily converted into energy.
Protein is important for growth of body cells.
Fibre prevents constipation, cancer and heart disease.

Please answer each question by placing a tick in the appropriate box.

Which foods are **high** in the following substances?

1. Vegetables.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

2. Cakes, biscuits and ice-cream.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

3. White bread, white rice and pasta.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

4. Whole meal bread and brown rice.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

5. Red meat.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

6. White meat from chicken and pork.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

7. Oily fish (e.g. Herring, Salmon, Sardines, Pilchards, Trout, Fresh Tuna, Mackerel, Sprats, Swordfish and Kippers).

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

8. Fruit

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

9. Butter, cheese, cream and milk.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

10. Fried foods.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

11. Soft drinks.

- ☐ Fat
- ☐ Carbohydrates
- ☐ Protein
- ☐ Fibre

Please answer each question by placing a tick in the appropriate box.

Do you think health experts recommend that people should be eating more, the same amount, or less of these foods?

1. Vegetables

   ☐ More
   ☐ Same
   ☐ Less
   ☐ Unsure

2. Sugary foods

   ☐ More
   ☐ Same
   ☐ Less
   ☐ Unsure

3. Starchy foods such as white rice or white bread

   ☐ More
   ☐ Same
   ☐ Less
   ☐ Unsure

4. Fatty foods such as chocolate and hamburgers

   ☐ More
   ☐ Same
   ☐ Less
   ☐ Unsure

5. Red meat

   ☐ More
   ☐ Same
   ☐ Less
   ☐ Unsure

6. White meat such as chicken or pork

   ☐ More
   ☐ Same
   ☐ Less
   ☐ Unsure

7. High fibre foods such as wholemeal bread, nuts and beans

   ☐ More
   ☐ Same
   ☐ Less
   ☐ Unsure

8. Fruit

- ☐ More
- ☐ Same
- ☐ Less
- ☐ Unsure

9. Salty foods

- ☐ More
- ☐ Same
- ☐ Less
- ☐ Unsure

10. Oily fish (e.g. Herring, Salmon, Sardines, Pilchards, Trout, Fresh Tuna, Mackerel, Sprats, Swordfish and Kippers).

- ☐ More
- ☐ Same
- ☐ Less
- ☐ Unsure

11. Fried foods

- ☐ More
- ☐ Same
- ☐ Less
- ☐ Unsure

12. Olive oil

- ☐ More
- ☐ Same
- ☐ Less
- ☐ Unsure

13. Full fat milk, cream, butter or cheese.

- ☐ More
- ☐ Same
- ☐ Less
- ☐ Unsure

Health: Smoking

1. Have you smoked at least 100 cigarettes in your entire life?

- ☐ Yes
- ☐ No

If “no”, please go to the next page

2. Do you now smoke cigarettes?

   ☐ Everyday
   ☐ Some days
   ☐ Not at all

3. How old were you when you first started smoking regularly? _____ years

4. If you have quit smoking, how long is it since you quit? _____ years

5. In the past 12 months, has a doctor, nurse or other health professional advised you to quit smoking?

   ☐ Yes
   ☐ No

6. During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?

   ☐ Yes
   ☐ No

Physical Health Problems

Please answer each question as "True", "False" or "Unsure".

1. Eating animal fat increases the risk of blood vessels in your heart becoming blocked (heart disease).

   True [ ] False [ ] Unsure [ ]

2. Smoking increases the risk of heart disease.

   True [ ] False [ ] Unsure [ ]

3. Stress increases the risk of heart disease.

   True [ ] False [ ] Unsure [ ]

4. Drinking too much alcohol increases the risk of heart disease.

   True [ ] False [ ] Unsure [ ]

5. Exercise increases the risk of high blood pressure.

   True [ ] False [ ] Unsure [ ]

6. Eating salt increases the risk of high blood pressure.

   True [ ] False [ ] Unsure [ ]

7. Stress increases the risk of high blood pressure.

   True [ ] False [ ] Unsure [ ]

8. Smoking increases the risk of lung cancer.

   True [ ] False [ ] Unsure [ ]

9. Smoking increases the risk of infertility and problems with monthly periods.

   True [ ] False [ ] Unsure [ ]

10. Smoking increases the risk of head and neck cancer.

    True [ ] False [ ] Unsure [ ]

11. Smoking increases the risk of asthma and lung infections that make you cough and wheeze.

    True [ ] False [ ] Unsure [ ]

12. Drinking black or green tea decreases the risk of bowel cancer

    True [ ] False [ ] Unsure [ ]

13. Sitting in a smoky room increases the risk of lung infections, heart disease and cancer.

    True [ ] False [ ] Unsure [ ]

REPRODUCTION AND SEXUAL HEALTH QUESTIONS

SEXUALLY TRANSMITTED INFECTION (STI)

Please answer each of the questions as "True", "False" or "Unsure".

Do you think that:

1. Sexually transmitted infections can only be spread when symptoms are present.

   True [ ] False [ ] Unsure [ ]

2. If someone you were seeing had a sexually transmitted infection would you know?

   True [ ] False [ ] Unsure [ ]

3. The chance of getting a sexually transmitted infection increases with the number of partners you have.

   True [ ] False [ ] Unsure [ ]

4. Sexually transmitted infections are annoying but they don't have any serious effects on a person's health.

   True [ ] False [ ] Unsure [ ]

5. It is difficult to bring up the topic of sexually transmitted infections with a partner.

   True [ ] False [ ] Unsure [ ]

6. Some sexually transmitted infections can cause problems with fertility (difficulties having children).

   True [ ] False [ ] Unsure [ ]

7. Sexually transmitted infections can cause increased risk for HIV/AIDS.

   True [ ] False [ ] Unsure [ ]

8. You can get a sexually transmitted infection by kissing.

   True [ ] False [ ] Unsure [ ]

9. You can get a sexually transmitted infection by cuddling and touching.

   True [ ] False [ ] Unsure [ ]

10. Men can give sexually transmitted infections to women.

    True [ ] False [ ] Unsure [ ]

11. Women can give sexually transmitted infections to men.

    True [ ] False [ ] Unsure [ ]

HIV/AIDS

Do you think that:

1. Men can give HIV/AIDS to women.

   True [ ] False [ ] Unsure [ ]

2. Men can give HIV/AIDS to men.

   True [ ] False [ ] Unsure [ ]

3. Women can give HIV/AIDS to men.

   True [ ] False [ ] Unsure [ ]

4. Women can give HIV/AIDS to women.

True [ ] False [ ] Unsure [ ]

5. HIV/AIDS is caused by spirits or supernatural forces.

True [ ] False [ ] Unsure [ ]

6. A person can get rid of HIV/AIDS by having sex with a virgin.

True [ ] False [ ] Unsure [ ]

7. A pregnant woman can give HIV/AIDS to her baby.

True [ ] False [ ] Unsure [ ]

8. You can get HIV/AIDS by touching someone with HIV/AIDS.

True [ ] False [ ] Unsure [ ]

9. There is a cure for HIV/AIDS.

True [ ] False [ ] Unsure [ ]

10. You can get HIV from mosquito bites.

True [ ] False [ ] Unsure [ ]

11. You can get HIV by sharing kitchen utensils.

True [ ] False [ ] Unsure [ ]

12. You can get HIV from toilets.

True [ ] False [ ] Unsure [ ]

13. You can get HIV from swimming pools.

True [ ] False [ ] Unsure [ ]

14. Coughing and sneezing spread HIV.

True [ ] False [ ] Unsure [ ]

15. A person can get HIV by sharing a glass of water with someone who has HIV.

True [ ] False [ ] Unsure [ ]

16. A person can get HIV by sharing an injection needle with someone who has HIV.

True [ ] False [ ] Unsure [ ]

17. A woman can get HIV if she has anal sex with a man.

    True [ ] False [ ] Unsure [ ]

18. Showering or washing ones private parts after sex keeps a person from getting HIV.

    True [ ] False [ ] Unsure [ ]

19. All pregnant women infected with HIV will have babies born with AIDS.

    True [ ] False [ ] Unsure [ ]

20. People who have been infected with HIV quickly show signs of being infected.

    True [ ] False [ ] Unsure [ ]

21. There is a vaccine that can stop adults from getting HIV.

True [ ] False [ ] Unsure [ ]

22. People can get HIV by kissing.

True [ ] False [ ] Unsure [ ]

23. A woman cannot get HIV if she has sex during her monthly period.

True [ ] False [ ] Unsure [ ]

24. There is a women's condom that can help decrease a woman's chance of getting HIV.

True [ ] False [ ] Unsure [ ]

25. A natural skin condom works better against HIV than does a latex condom.

True [ ] False [ ] Unsure [ ]

26. A person will not get HIV if he or she is taking antibiotics.

True [ ] False [ ] Unsure [ ]

27. Having sex with more than one partner can increase a person's chance of being infected with HIV.

True [ ] False [ ] Unsure [ ]

28. Taking a test for HIV one week after having sex will tell a person if she or he has HIV.

True [ ] False [ ] Unsure [ ]

29. Taking a test for HIV one week after having sex will tell a person if she or he has HIV.

True [ ] False [ ] Unsure [ ]

30. A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV.

True [ ] False [ ] Unsure [ ]

31. A person can get HIV from oral sex.

True [ ] False [ ] Unsure [ ]

32. Using Vaseline or baby oil with condoms lowers the chance of getting HIV.

True [ ] False [ ] Unsure [ ]

PROTECTION OF SEXUAL HEALTH

Do you think that?

1. Condoms are easy to get.

   True [ ] False [ ] Unsure [ ]

2. Condoms spoil sex.

   True [ ] False [ ] Unsure [ ]

3. Condoms are effective at protecting against AIDS/HIV.

   True [ ] False [ ] Unsure [ ]

4. Condoms are effective at protecting against sexually transmitted infections other than AIDS/HIV.

   True [ ] False [ ] Unsure [ ]

5. Condoms are unnatural.

   True [ ] False [ ] Unsure [ ]

6. Partners dislike condoms.

   True [ ] False [ ] Unsure [ ]

7. It is no problem to have sex without a condom some of the time.

   True [ ] False [ ] Unsure [ ]

8. You would not have sex if you did not have a condom?

   True [ ] False [ ] Unsure [ ]

9. You don’t need to use condoms unless you have a lot of sexual partners.

   True [ ] False [ ] Unsure [ ]

10. Buying condoms is embarrassing or shameful.

    True [ ] False [ ] Unsure [ ]

11. Most people who carry condoms are just looking for sex.

    True [ ] False [ ] Unsure [ ]

12. It is difficult to bring up the topic of using condoms.

    True [ ] False [ ] Unsure [ ]

13. Sex without a condom increases the risk of getting a sexually transmitted infection.

True [ ] False [ ] Unsure [ ]

14. Sex with a condom means that you are protected from catching a disease.

True [ ] False [ ] Unsure [ ]

Please place a tick in one or more of the boxes.

If your husband or partner suggested using a condom you would feel:

- ☐ Like he cared about me
- ☐ Relieved
- ☐ Insulted
- ☐ Like he was suspicious or concerned about my past sexual behaviour
- ☐ Suspicious or concerned about their past sexual behaviour
- ☐ That he was being responsible

Please place one or more ticks in each of the columns.

	Current sources of knowledge about behaviours that increase the risk of a sexually transmitted infection	**Preferred future** sources of knowledge about behaviours that increase the risk of a sexually transmitted infection
Magazines or newspapers		
Television		
Internet		
Radio		
General practitioner (doctor)		
Alternative therapist		
Traditional healer		
School		
Sexual health clinic		
Community meeting		
Family member(s)		
Friends		
Pamphlets in waiting rooms		
Pamphlets in shopping centres		
Mailed pamphlets		
Community health nurse		
Women's group		
Telephone hotline		
Other (please specify)		

Other suggestions for preferred future sources of knowledge about sexual health:

Please answer each question.

How many times in the **past 6 months** have you gone for treatment to:

1. A medical practitioner (GP)

   ☐ Not at all
   ☐ Once or twice
   ☐ More than twice

2. A hospital clinic.

   ☐ Not at all
   ☐ Once or twice
   ☐ More than twice

3. A psychologist or counselor.

   ☐ Not at all
   ☐ Once or twice
   ☐ More than twice

4. A dentist.

   ☐ Not at all
   ☐ Once or twice
   ☐ More than twice

5. A self-help group.

   ☐ Not at all
   ☐ Once or twice
   ☐ More than twice

6. A traditional healer or alternative medicine healer.

   ☐ Not at all
   ☐ Once or twice
   ☐ More than twice

Please place a tick in one or more of the boxes in each column. Who would you approach for help if you thought you had?

	A skin infection	A chest or bowel infection	A sexually transmitted infection	Heart disease or high blood pressure	Chronic tiredness, lack of energy, pain or headaches	Ongoing stress or feeling that you could not cope
A medical practitioner (GP)						
A hospital clinic						
A psychologist or counselor						
A social worker or welfare worker						
A member of a self-help group						
A family member or a friend						
A traditional/alternative healer						
A religious leader						
A community elder						
Someone else (specify)						
No one						

Please place a tick in one or more of the boxes in each column.
What would stop you from seeking help for the following types of problem?

	A skin infection	**A chest or bowel infection**	**A sexually transmitted infection**	**Heart disease or high blood pressure**	**Chronic tiredness, lack of energy, pain or headaches**	**Ongoing stress or feeling that you could not cope**
Feeling you can cope with this type of problem alone						
Thinking this type of problem gets better by itself						
Feeling embarrassed or ashamed to talk to anyone about it						
Thinking you wouldn't know where to go or who to talk to						
Feeling afraid of what your family or friends might think						
Thinking you might lose your job						
Thinking there is no time						
Thinking you don't have enough money						
Feeling afraid of the treatment or taking medication						
Thinking it takes too long						
Feeling afraid of being hospitalized						
Thinking how to get there and how long you have to travel.						
Feeling afraid of being judged by the person you seek help from						
Thinking no one could help you with this type of problem						

Appendix B: frequency data for each survey question

The 52 West African respondents were matched as closely as possible with Australian women for age and education. The age match was close whereas the match for education was only approximate because of the low level of education in some West African women. Nevertheless, as noted below, the number who completed 12 years of school was similar in the two samples.

DEMOGRAPHIC INFORMATION

	group	N	Mean	Std. Deviation	t-test
age	African	51	35.02	10.574	.76
	Australian	51	36.88	14.075	
Height	African	51	162.12	11.627	1.63
	Australian	50	165.42	8.507	
Weight	African	51	76.41	13.890	3.41 ***
	Australian	51	67.08	13.775	
BMI	African	51	29.29	5.585	4.64 ***
	Australian	50	24.53	4.678	
School years	African	51	8.51	4.730	4.17 ***
	Australian	51	11.35	1.180	
People in home	African	51	4.31	1.995	3.71 ***
	Australian	51	3.04	1.428	

	group	N	Mean	Std. Deviation	t-test
Years living in Australia	African	51	2.284	1.3351	16.75 ***
	Australian	51	33.529	13.2519	
Years living in the countryside	African	51	12.15	12.571	3.97 ***
	Australian	51	4.14	7.080	
Years living in towns or cities	African	51	18.55	13.699	4.17 ***
	Australian	51	30.47	15.500	

	African (N=51)	Australian (N=51)	Chi-Square
Married or defacto	43%	41%	
Divorced or separated	4%	14%	15.06 **
Single	31%	45%	
Widowed	22%	0%	
Work full-time	16%	53%	15.70 ***
Work part-time	28%	41%	2.13
Casual work	20%	24%	.23
Permanent work	20%	73%	28.77 ***
Unemployed	6%	0%	3.09
Pensioner	4%	4%	.00
Home duties	12%	8%	.44
Student	39%	14%	8.51 **
Completed year 12 at school	43%	59%	2.51
Speak English at home	80%	98%	8.25 **
Rent or share accomodation	100%	32%	
Live with parents or relatives	0%	36%	52.28 ***
Home owned or mortaged	0%	32%	

3. What suburb do you live in? _____

HYGIENE – ways of taking care of yourself and your family
Food Preparation

Please answer each question as "True", "False" or "Unsure".

1. Preparing food in advance increases the risk of food poisoning

	True	False	Unsure	Chi-Square
Africans (N=51)	43%	43%	14%	3.52
Australians (N=51)	57%	25%	18%	

2. Raw food should always be separated from cooked food

	True	False	Unsure	Chi-Square
Africans (N=51)	94%	6%	0%	6.00 *
Australians (N=51)	78%	16%	18%	

3. Improper food storage can make you sick

	True	False	Unsure	Chi-Square
Africans (N=51)	100%	0%	0%	1.01
Australians (N=51)	98%	0%	2%	

4. Meat should be cooked well done

	True	False	Unsure	Chi-Square
Africans (N=51)	92% #	0%	8%	49.66 ***
Australians (N=51)	29%	65% #	6%	

5. If the refrigerator temperature is low does this reduce the risk of food poisoning?

	True	False	Unsure	Chi-Square
Africans (N=51)	20%	65%	16%	5.12
Australians (N=51)	39%	45%	16%	

6. Leaving cooked meat or chicken at room temperature for over four hours can be dangerous to our health when we eat them

	True	False	Unsure	Chi-Square
Africans (N=51)	69%	22%	10%	8.23 *
Australians (N=51)	90%	4%	6%	

7. Refreezing defrosted foods can be dangerous to our health when we eat them

	True	False	Unsure	Chi-Square
Africans (N=51)	49%	35% #	16%	20.53 ***
Australians (N=51)	90%	6%	4%	

8. Washing your hands before handling unwrapped raw or cooked foods reduces the risk of food poisoning

	True	False	Unsure	Chi-Square
Africans (N=51)	92%	8%	0%	4.39
Australians (N=51)	82%	10%	8%	

9. Washing your hands after going to the toilet reduces the risk of infections

	True	False	Unsure	Chi-Square
Africans (N=51)	100%	0%	0%	.00
Australians (N=51)	100%	0%	0%	

10. Washing your hands after touching an animal reduces the risk of infections or illness

	True	False	Unsure	Chi-Square
Africans (N=51)	98%	1%	0%	2.00
Australians (N=51)	98%	0%	1%	

11. Keeping your food preparation area and utensils clean reduces the risk of food poisoning

	True	False	Unsure	Chi-Square
Africans (N=51)	94%	6%	0%	3.09
Australians (N=51)	100%	0%	0%	

12. Flies/cockroaches/insects can cause ill health

	True	False	Unsure	Chi-Square
Africans (N=51)	100%	0%	0%	4.16
Australians (N=51)	92%	2%	6%	

13. Sweet foods can cause holes in the teeth (tooth decay)

	True	False	Unsure	Chi-Square
Africans (N=51)	98%	2%	0%	2.04
Australians (N=51)	94%	2%	4%	

14. Brushing your teeth regularly prevents tooth decay

	True	False	Unsure	Chi-Square
Africans (N=51)	98%	2%	0%	2.00
Australians (N=51)	98%	0%	2%	

15. Coughing and sneezing near food spreads disease

	True	False	Unsure	Chi-Square
Africans (N=51)	100%	0%	0%	3.09
Australians (N=51)	94%	2%	2%	

Buying Food

Please answer each question as “Always”, “Often”, “Sometimes” or “Never”.

1. When you buy packaged food, do you check when the food should be eaten by (the use-by or expiry date)?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	4%	16%	8%	73%	1.41
Australians (N=51)	0%	22%	24%	55%	

2. Do you read the use-by dates and instructions for storage written on the packaged foods?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	6%	18%	6%	71%	.12
Australians (N=51)	0%	26%	26%	49%	

3. Do you wash your hands before eating and before touching foods?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	0%	4%	4%	92%	4.28 ***
Australians (N=51)	0%	14%	33%	53%	

4. Do you wash fruit that is not peeled before eating it?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	0%	6%	6%	88%	4.56 ***
Australians (N=51)	0%	31%	24%	45%	

5. After drinking a glass of milk, or adding it to tea or coffee, do you put the milk straight back in the fridge?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	0%	10%	6%	84%	.17
Australians (N=51)	0%	4%	26%	71%	

6. If you realize you have left the milk out of the fridge during the night, do you put it in the fridge again?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	41 %	26%	8%	26%	2.21 *
Australians (N=51)	59%	24%	12%	6%	

7. Do you use soap and water to wash your hands after going to the toilet?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	0%	0%	0%	100%	3.66 ***
Australians (N=51)	0%	10%	14%	77%	

8. Do you cover food left on the table or in the kitchen to protect it from insects?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	0%	2%	2%	96%	5.34 ***
Australians (N=51)	2%	8%	43%	47%	

9. Do you kill flies/cockroaches/insects when you see them in the house?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	6%	14%	0%	80%	1.03
Australians (N=51)	0%	4%	31%	65%	

11. Do you wash your hands after touching an animal?

	Never	Sometimes	Often	Always	Mann-Whitney U
Africans (N=51)	0%	4%	4%	88%	3.27 ***
Australians (N=51)	0%	18%	24%	59%	

Personal Hygiene

How often do you:	African (N=51)	Australian (N=51)	Mann-Whitney U
Bathe or shower			
Less than once a day	2%	0%	
Once a day	12%	75%	5.95 ***
Twice a day	82%	26%	
More than twice a day	4%	0%	
Brush your teeth with toothpaste			
Less than once a day	0%	2%	
Once a day	8%	18%	.18
Twice a day	84%	73%	
More than twice a day	8%	8%	
Use dental cotton to clean your teeth			
Less than once a day	49%	69%	
Once a day	26%	24%	
Twice a day	16%	2%	2.25 *
More than twice a day	10%	6%	
Wash your hands with soap and water			
Less than once a day	10%	0%	
Once a day	4%	0%	
Twice a day	6%	6%	2.18 *
More than twice a day	80%	94%	
Wash your hair			
Everyday	6%	31%	
Once a week	35%	14%	
Twice a week	12%	53%	3.44 ***
Fortnightly	29%	0%	
Monthly or less	18%	2%	

Hygiene: General Areas

How often do you:	African (N=51)	Australian (N=51)	Mann-Whitney U
Wash your dishes			
Straight after eating meals	94%	78%	
The next day	2%	18%	2.20 *
When there are no more dishes to use	4%	4%	
Clean all your kitchen benches			
Everyday	77%	82%	
Once or a few times a week	22%	18%	.77
Fortnightly	2%	0%	
Monthly or less	0%	0%	
Clean your bathroom and toilet			
Everyday	37%	6%	
Once or a few times a week	59%	78%	4.02 ***
Fortnightly	4%	12%	
Monthly or less	0%	4%	
Change your bath towel			
Everyday	18%	6%	
Once or a few times a week	63%	80%	.46
Fortnightly	14%	12%	
Monthly or less	6%	2%	
Change your bed sheets and pillow cases			
Everyday	2%	0%	
Once or a few times a week	86%	57%	3.62 ***
Fortnightly	10%	33%	
Monthly or less	2%	10%	
Mop your kitchen floor			
Everyday	73%	0%	
Once or a few times a week	26%	57%	7.68 ***
Fortnightly	2%	31%	
Monthly or less	0%	12%	

Physical Health

Do you think you can get sick from:

1. Shaking hands with a sick person?

	True	False	Unsure	Chi-Square
Africans (N=51)	45%	43%	12%	.37
Australians (N=51)	51%	39%	10%	

2. Touching objects that a sick person has touched?

	True	False	Unsure	Chi-Square
Africans (N=51)	41%	35%	24%	.63
Australians (N=51)	47%	35%	18%	

3. Talking closely with a sick person or by having them sneeze or cough on you?

	True	False	Unsure	Chi-Square
Africans (N=51)	88%	6%	3%	.00
Australians (N=50)	88%	6%	3%	

4. Sitting more than 1 m (3 feet) away from a sick person?

	True	False	Unsure	Chi-Square
Africans (N=51)	33%	37%	29%	1.99
Australians (N=51)	37%	45%	18%	

5. Kissing a sick person on the cheek?

	True	False	Unsure	Chi-Square
Africans (N=51)	51%	33%	16%	4.13
Australians (N=51)	31%	49%	20%	

6. Eating food prepared by a sick person?

	True	False	Unsure	Chi-Square
Africans (N=51)	39%	39%	22%	2.21
Australians (N=51)	49%	26%	26%	

7. Changing the nappy of a sick child?

	True	False	Unsure	Chi-Square
Africans (N=51)	28%	55%	18%	.21
Australians (N=51)	31%	51%	18%	

Do you think you can get sick if:

1. You do not eat good food.

	True	False	Unsure	Chi-Square
Africans (N=51)	90%	10%	0%	3.10
Australians (N=51)	84%	10%	6%	

2. You do not prepare your food well.

	True	False	Unsure	Chi-Square
Africans (N=51)	92%	6%	2%	.00
Australians (N=51)	92%	6%	2%	

3. You do not eat a balanced diet.

	True	False	Unsure	Chi-Square
Africans (N=51)	86%	8%	6%	.39
Australians (N=51)	90%	6%	4%	

4. You do not take care of yourself.

	True	False	Unsure	Chi-Square
Africans (N=51)	94%	6%	0%	.15
Australians (N=51)	92%	8%	0%	

5. You don't exercise.

	True	False	Unsure	Chi-Square
Africans (N=51)	75%	18%	8%	.16
Australians (N=51)	77%	18%	6%	

6. You don't sleep well.

	True	False	Unsure	Chi-Square
Africans (N=51)	96%	0%	4%	5.59
Australians (N=51)	84%	10%	6%	

COPING WITH STRESS

When you feel stressed or feel as though you cannot cope, do you:	African (N=51)	Australian (N=51)	Chi-Square
Over-eat certain foods (e.g., sweet foods or greasy/fried foods)	12%	59%	24.73 ***
Eat less than usual	84%	33%	27.36 ***
Drink alcohol	0%	37%	23.35 ***
Sleep more than usual	8%	28%	6.75 **
Sleep less than usual	84%	55%	10.43 ***
Wake up early	71%	29%	17.29 ***
Smoke more cigarettes than usual	2%	24%	10.67 ***
Take over-the-counter or prescribed drugs	0%	6%	3.09
Take illegal drugs (e.g. marijuana, amphetamines, etc.)	0%	8%	4.16 *

EXERCISE

Do you think exercise helps you:

1. To feel healthy and fit.

	True	False	Unsure	Chi-Square
Africans (N=51)	98%	0%	2%	1.01
Australians (N=51)	100%	0%	0%	

2. To feel like you've done something good.

	True	False	Unsure	Chi-Square
Africans (N=51)	96%	2%	2%	1.04
Australians (N=51)	92%	2%	6%	

3. To keep healthy.

	True	False	Unsure	Chi-Square
Africans (N=51)	98%	0%	2%	1.01
Australians (N=51)	100%	0%	0%	

4. To look good.

	True	False	Unsure	Chi-Square
Africans (N=51)	96%	0%	4%	3.01
Australians (N=51)	98%	2%	0%	

5. To relax, forget about your worries.

	True	False	Unsure	Chi-Square
Africans (N=51)	61%	18%	22%	5.33
Australians (N=51)	75%	20%	6%	

6. To control your weight.

	True	False	Unsure	Chi-Square
Africans (N=51)	90%	6%	4%	5.26
Australians (N=51)	100%	0%	0%	

7. To become slimmer.

	True	False	Unsure	Chi-Square
Africans (N=51)	92%	2%	6%	3.09
Australians (N=51)	98%	2%	0%	

8. Regular exercise can make bones stronger so that they do not break easily.

	True	False	Unsure	Chi-Square
Africans (N=51)	71%	6%	24%	6.86 *
Australians (N=51)	82%	12%	6%	

9. You can exercise even when you are old.

	True	False	Unsure	Chi-Square
Africans (N=51)	88%	6%	6%	4.26
Australians (N=51)	98%	2%	0%	

10. You need a lot of expensive equipment for exercise.

	True	False	Unsure	Chi-Square
Africans (N=51)	29% #	61%	10%	21.71 ***
Australians (N=51)	2%	98%	0%	

11. Regular exercise can help reduce your risk of having a blocked or burst blood vessel in your brain (a stroke).

	True	False	Unsure	Chi-Square
Africans (N=51)	71%	4%	26%	.83
Australians (N=51)	71%	8%	22%	

12. Regular exercise can help prevent blockage of blood vessels in your heart (heart disease).

	True	False	Unsure	Chi-Square
Africans (N=51)	67%	6%	28%	4.04
Australians (N=51)	82%	6%	12%	

13. Women should not exercise during the first three months of pregnancy.

	True	False	Unsure	Chi-Square
Africans (N=51)	59% #	12%	29%	44.66 ***
Australians (N=51)	8%	75% #	18%	

14. Sport is only for fit young people.

	True	False	Unsure	Chi-Square
Africans (N=51)	14%	80%	6%	11.09 **
Australians (N=51)	0%	100%	0%	

15. Too much exercise can be dangerous if you are not used to it.

	True	False	Unsure	Chi-Square
Africans (N=51)	59%	14%	28%	11.72 **
Australians (N=51)	88%	6%	6%	

16. Exercise must be painful before it does any good.

	True	False	Unsure	Chi-Square
Africans (N=51)	59% #	20%	22%	52.21 ***
Australians (N=51)	4%	90% #	6%	

17. Regular exercise is important if you want to lose weight.

	True	False	Unsure	Chi-Square
Africans (N=51)	98%	0%	2%	1.01
Australians (N=51)	100%	0%	0%	

18. A short walk every day is better than no exercise at all.

	True	False	Unsure	Chi-Square
Africans (N=51)	98%	2%	0%	1.01
Australians (N=51)	100%	0%	0%	

19. People with heart disease should not exercise.

	True	False	Unsure	Chi-Square
Africans (N=51)	53% #	18%	29%	56.89 ***
Australians (N=51)	0%	90% #	10%	

Express Yourself

1. I do not exercise as much as I should.

	True	Chi-Square
Africans (N=51)	88%	2.43
Australians (N=51)	77%	

I do not exercise more because:	African (N=51)	Australian (N=51)	Chi-Square
I do not enjoy exercise	24%	24%	.00
Parts of my body are always in pain after exercise	63%	26%	14.36 ***
I'm too fat to exercise	20%	2%	8.25 **
I have a chronic illness, which prevents me from exercising	18%	10%	1.36
I'm too old to exercise	8%	0%	4.16 *
I don't like sporting activities	20%	24%	.23
I don't have enough time to exercise	67%	47%	4.00 *
I don't have enough energy to exercise	20%	33%	2.47
There's no one to exercise with	26%	29%	.20
don't have suitable clothes/ equipment for exercise	28%	10%	5.24 *
Lack of transport prevents me from exercising	22%	2%	9.44 **
Lack of child care facilities prevents me from exercising	10%	2%	2.83
Lack of money prevents me from exercising	29%	14%	3.71

Diet and Health

Do you think that:

1. What you eat can determine whether you get heart disease or cancer.

	True	False	Unsure	Chi-Square
Africans (N=51)	53%	10%	37%	8.17 *
Australians (N=51)	78%	8%	14%	

2. There are so many recommendations about what is healthy to eat; it's hard to know what to believe.

	True	False	Unsure	Chi-Square
Africans (N=51)	77%	4%	20%	12.07 **
Australians (N=51)	65%	28% #	8%	

3. I know that what I eat and drink now are healthy, so there is no reason for me to make a change.

	True	False	Unsure	Chi-Square
Africans (N=51)	49%	43%	8%	4.84
Australians (N=51)	29%	65%	6%	

4. Some people are born fat and some thin; there is not much you can do to change this.

	True	False	Unsure	Chi-Square
Africans (N=51)	59% #	37%	4%	44.26 ***
Australians (N=51)	0%	98% #	2%	

5. When shopping for food it is important to consider whether the food I choose to buy is healthy or not healthy.

	True	False	Unsure	Chi-Square
Africans (N=51)	94%	2%	4%	2.04
Australians (N=51)	98%	2%	0%	

How often do you have the following foods and drinks?	Not at all	Every two weeks or less	Once a week	Every few days	One or more times a day	Mann-Whitney U
Vegetables						
Africans (N=51)	0%	20%	8%	39%	33%	3.40 ***
Australians (N=51)	0%	2%	2%	35%	61%	
Cakes, biscuits or ice-cream						
Africans (N=51)	12%	22%	28%	26%	14%	.85
Australians (N=51)	4%	24%	22%	43%	8%	
White bread, white rice or pasta						
Africans (N=51)	2%	8%	26%	24%	41%	1.00
Australians (N=51)	4%	12%	20%	37%	28%	
Wholemeal/grain bread or brown rice						
Africans (N=51)	16%	12%	18%	26%	29%	1.07
Australians (N=51)	18%	18%	24%	18%	24%	
Red meat						
Africans (N=51)	4%	14%	24%	31%	28%	1.34
Australians (N=51)	6%	16%	18%	57%	4%	
Lean cuts of chicken or pork						
Africans (N=51)	6%	28%	26%	31%	10%	2.71 **
Australians (N=51)	4%	8%	15%	65%	8%	
Oily fish						
Africans (N=51)	10%	29%	26%	29%	6%	1.92
Australians (N=51)	18%	33%	31%	18%	0%	
Fruit						
Africans (N=51)	0%	14%	10%	24%	53%	.85
Australians (N=51)	2%	12%	14%	29%	43%	
Butter, cheese or full-cream milk						
Africans (N=51)	6%	22%	14%	33%	26%	1.51
Australians (N=51)	8%	8%	20%	22%	43%	
Fried foods						
Africans (N=51)	8%	28%	31%	24%	10%	1.10
Australians (N=51)	12%	28%	39%	18%	4%	
Full-sugar soft drinks						
Africans (N=51)	14%	31%	28%	10%	18%	2.68 **
Australians (N=51)	45%	18%	16%	16%	6%	
Mineral water						
Africans (N=51)	28%	31%	12%	16%	14%	1.83
Australians (N=51)	55%	16%	2%	8%	20%	
Black or green tea						
Africans (N=51)	35%	20%	10%	12%	24%	.12
Australians (N=51)	37%	16%	0%	26%	22%	
Coffee						
Africans (N=51)	61%	10%	14%	12%	4%	6.13 ***
Australians (N=51)	12%	12%	6%	16%	55%	
Red wine						
Africans (N=51)	94%	4%	2%	0%	0%	4.93 ***
Australians (N=51)	51%	20%	4%	20%	6%	

Fat provides concentrated source of energy.

Carbohydrate foods are easily converted into energy.

Protein is important for growth of body cells.

Fibre prevents constipation, cancer and heart disease.

Which foods are high in the following substances?	Africans (N=51)	Australians (N=51)	Chi-Square
Vegetables			
carbohydrates	8%	22%	3.83 *
fibre	57%	73%	2.75
Cakes, biscuits or ice-cream			
fat	65%	92%	11.36 ***
carbohydrates	26%	35%	1.16
White bread, white rice or pasta			
carbohydrates	77%	94%	6.33 *
Wholemeal/grain bread or brown rice			
carbohydrates	39%	4%	1.43
protein	28%	51%	11.93 ***
fibre	41%	84%	20.30 ***
Red meat			
fat	2%	26%	11.92 ***
protein	96%	94%	.21
Lean cuts of chicken or pork			
fat	63%	16%	23.69 ***
protein	35%	96%	41.80 ***
Oily fish			
fat	39%	39%	.00
protein	57%	82%	7.83 **
Fruit			
carbohydrates	14%	35%	6.41 *
fibre	67%	72%	.34
Butter, cheese or full-cream milk			
fat	92%	92%	.00
protein	10%	20%	1.95
Fried foods			
fat	78%	86%	1.08
protein	12%	4%	2.17
Full-sugar soft drinks			
carbohydrates	28%	61%	11.49 ***

Do you think health experts recommend that people should be eating more, the same amount, or less of these foods?	Less	Same	More	Unsure	Chi-Square
Vegetables					
Africans (N=51)	2%	4%	92%	2%	2.43
Australians (N=51)	0%	2%	98%	0%	
Sugary foods					
Africans (N=51)	98%	0%	0%	2%	..00
Australians (N=51)	98%	0%	0%	2%	
Starchy foods such as white rice or white bread					
Africans (N=51)	73%	12%	14%	2%	3.09
Australians (N=51)	82%	12%	4%	2%	
Fatty foods such as chocolate and hamburgers					
Africans (N=51)	94%	2%	2%	2%	2.04
Australians (N=51)	98%	0%	0%	2%	
Red meat					
Africans (N=51)	6%	18%	74%	2%	9.94 *
Australians (N=51)	12%	41%	43%	4%	
White meat such as chicken or pork					
Africans (N=51)	65% #	18%	14%	4%	43.20 ***
Australians (N=51)	4%	41%	51% #	4%	
High fibre foods such as wholemeal bread, nuts and beans					
Africans (N=51)	14%	6%	73%	8%	12.33 **
Australians (N=51)	0%	8%	92%	0%	
Fruit					
Africans (N=51)	0%	2%	98%	0%	.34
Australians (N=51)	0%	4%	96%	0%	
Salty foods					
Africans (N=51)	94%	4%	0%	2%	1.68
Australians (N=51)	92%	8%	0%	0%	
Oily fish					
Africans (N=51)	53% #	10%	29%	8%	29.38 ***
Australians (N=51)	10%	22%	69% #	0%	
Fried foods					
Africans (N=51)	84%	6%	8%	2%	6.53
Australians (N=51)	98%	2%	0%	0%	
Olive oil					
Africans (N=51)	33%	16%	26%	26%	21.47 ***
Australians (N=51)	12%	41%	43%	4%	
Full fat milk, cream, butter or cheese					
Africans (N=51)	78%	12%	8%	2%	1.91
Australians (N=51)	84%	12%	2%	2%	

Health: Smoking

Have you smoked at least 100 cigarettes in your entire life?

	Yes	Chi-Square
Africans (N=51)	2%	35.12 ***
Australians (N=51)	55%	

Physical Health Problems

1. Eating animal fat increases the risk of blood vessels in your heart becoming blocked (heart disease).

	True	False	Unsure	Chi-Square
Africans (N=51)	65%	14%	22%	4.46
Australians (N=50)	82%	10%	8%	

2. Smoking increases the risk of heart disease.

	True	False	Unsure	Chi-Square
Africans (N=51)	98%	0%	2%	.00
Australians (N=51)	98%	0%	2%	

3. Stress increases the risk of heart disease.

	True	False	Unsure	Chi-Square
Africans (N=51)	86%	0%	14%	1.86
Australians (N=51)	90%	2%	8%	

4. Drinking too much alcohol increases the risk of heart disease.

	True	False	Unsure	Chi-Square
Africans (N=51)	94%	0%	6%	1.60
Australians (N=51)	88%	2%	10%	

5. Exercise increases the risk of high blood pressure.

	True	False	Unsure	Chi-Square
Africans (N=51)	24%	49%	28%	16.64 ***
Australians (N=51)	4%	86%	10%	

6. Eating salt increases the risk of high blood pressure.

	True	False	Unsure	Chi-Square
Africans (N=51)	75%	4%	22%	5.33
Australians (N=51)	90%	4%	6%	

7. Stress increases the risk of high blood pressure.

	True	False	Unsure	Chi-Square
Africans (N=51)	92%	2%	6%	1.04
Australians (N=51)	96%	2%	2%	

8. Smoking increases the risk of lung cancer.

	True	False	Unsure	Chi-Square
Africans (N=51)	100%	0%	0%	.00
Australians (N=51)	100%	0%	0%	

9. Smoking increases the risk of infertility and problems with monthly periods.

	True	False	Unsure	Chi-Square
Africans (N=51)	59%	6%	35%	2.42
Australians (N=51)	73%	6%	22%	

10. Smoking increases the risk of head and neck cancer.

	True	False	Unsure	Chi-Square
Africans (N=51)	59%	0%	41%	1.56
Australians (N=51)	65%	2%	33%	

11. Smoking increases the risk of asthma and lung infections that make you cough and wheeze.

	True	False	Unsure	Chi-Square
Africans (N=51)	96%	0%	4%	.34
Australians (N=51)	98%	0%	2%	

12. Drinking black or green tea decreases the risk of bowel cancer

	True	False	Unsure	Chi-Square
Africans (N=51)	14%	10%	77%	15.85 ***
Australians (N=51)	49% #	2%	49%	

13. Sitting in a smoky room increases the risk of lung infections, heart disease and cancer.

	True	False	Unsure	Chi-Square
Africans (N=51)	75%	2%	24%	7.56 *
Australians (N=51)	94%	0%	6%	

REPRODUCTION AND SEXUAL HEALTH QUESTIONS

SEXUALLY TRANSMITTED INFECTION (STI)

Do you think that:

1. Sexually transmitted infections can only be spread when symptoms are present.

	True	False	Unsure	Chi-Square
Africans (N=50)	24%	56%	20%	6.00 *
Australians (N=51)	14%	78%	8%	

2. If someone you were seeing had a sexually transmitted infection would you know?

	True	False	Unsure	Chi-Square
Africans (N=50)	14%	66%	20%	2.95
Australians (N=51)	12%	53%	35%	

3. The chance of getting a sexually transmitted infection increases with the number of partners you have.

	True	False	Unsure	Chi-Square
Africans (N=50)	86%	10%	4%	1.45
Australians (N=51)	92%	4%	4%	

4. Sexually transmitted infections are annoying but they don't have any serious effects on a person's health.

	True	False	Unsure	Chi-Square
Africans (N=50)	8%	84%	8%	2.86
Australians (N=51)	4%	94%	2%	

5. It is difficult to bring up the topic of sexually transmitted infections with a partner.

	True	False	Unsure	Chi-Square
Africans (N=50)	66%	28%	6%	6.05 *
Australians (N=51)	45%	35%	20%	

6. Some sexually transmitted infections can cause problems with fertility (difficulties having children).

	True	False	Unsure	Chi-Square
Africans (N=50)	96%	2%	2%	1.00
Australians (N=51)	92%	2%	6%	

7. Sexually transmitted infections can cause increased risk for HIV/AIDS.

	True	False	Unsure	Chi-Square
Africans (N=50)	94%	2%	4%	6.19 *
Australians (N=51)	77%	6%	18%	

8. You can get a sexually transmitted infection by kissing.

	True	False	Unsure	Chi-Square
Africans (N=50)	28%	50%	22%	7.63 *
Australians (N=51)	29%	67%	4%	

9. You can get a sexually transmitted infection by cuddling and touching.

	True	False	Unsure	Chi-Square
Africans (N=50)	26%	52%	22%	10.77 **
Australians (N=51)	8%	82%	10%	

10. Men can give sexually transmitted infections to women.

	True	False	Unsure	Chi-Square
Africans (N=50)	98%	2%	0%	2.00
Australians (N=51)	98%	0%	2%	

11. Women can give sexually transmitted infections to men.

	True	False	Unsure	Chi-Square
Africans (N=50)	98%	2%	0%	2.00
Australians (N=51)	98%	0%	2%	

HIV/AIDS

Do you think that:

1. Men can give HIV/AIDS to women.

	True	False	Unsure	Chi-Square
Africans (N=50)	100%	0%	0%	.99
Australians (N=51)	98%	2%	0%	

2. Men can give HIV/AIDS to men.

	True	False	Unsure	Chi-Square
Africans (N=50)	80%	4%	16%	8.55 *
Australians (N=51)	98%	0%	2%	

3. Women can give HIV/AIDS to men.

	True	False	Unsure	Chi-Square
Africans (N=50)	100%	0%	0%	3.03
Australians (N=51)	94%	4%	2%	

4. Women can give HIV/AIDS to women.

	True	False	Unsure	Chi-Square
Africans (N=50)	72%	6%	22%	3.45
Australians (N=51)	78%	12%	10%	

5. HIV/AIDS is caused by spirits or supernatural forces.

	True	False	Unsure	Chi-Square
Africans (N=50)	14%	64%	22% #	19.44 ***
Australians (N=51)	2%	98%	0%	

6. A person can get rid of HIV/AIDS by having sex with a virgin.

	True	False	Unsure	Chi-Square
Africans (N=50)	4%	62%	34% #	21.04 ***
Australians (N=51)	4%	96%	0%	

7. A pregnant woman can give HIV/AIDS to her baby.

	True	False	Unsure	Chi-Square
Africans (N=50)	90%	0%	10%	5.70
Australians (N=51)	92%	6%	2%	

8. You can get HIV/AIDS by touching someone with HIV/AIDS.

	True	False	Unsure	Chi-Square
Africans (N=50)	20%	64%	16%	9.87 **
Australians (N=51)	6%	90%	4%	

9. There is a cure for HIV/AIDS.

	True	False	Unsure	Chi-Square
Africans (N=50)	20%	40%	40% #	25.61 ***
Australians (N=51)	4%	88% #	9%	

10. You can get HIV from mosquito bites.

	True	False	Unsure	Chi-Square
Africans (N=50)	52% #	22%	26%	18.33 ***
Australians (N=51)	16%	59% #	26%	

11. You can get HIV by sharing kitchen utensils.

	True	False	Unsure	Chi-Square
Africans (N=50)	36% #	32%	32%	36.92 ***
Australians (N=51)	2%	90% #	8%	

12. You can get HIV from toilets.

	True	False	Unsure	Chi-Square
Africans (N=50)	36% #	40%	24%	14.15 ***
Australians (N=51)	8%	73%	20%	

13. You can get HIV from swimming pools.

	True	False	Unsure	Chi-Square
Africans (N=50)	28% #	46%	26%	16.35 ***
Australians (N=51)	4%	82%	14%	

14. Coughing and sneezing spread HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	24%	54%	22%	16.65 ***
Australians (N=51)	4%	90%	6%	

15. A person can get HIV by sharing a glass of water with someone who has HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	26%	46%	28%	7.65 *
Australians (N=51)	16%	73%	12%	

16. A person can get HIV by sharing an injection needle with someone who has HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	98%	0%	2%	2.99
Australians (N=51)	96%	4%	0%	

17. A woman can get HIV if she has anal sex with a man.

	True	False	Unsure	Chi-Square
Africans (N=50)	66%	10%	24%	2.68
Australians (N=51)	75%	14%	12%	

18. Showering or washing ones private parts after sex keeps a person from getting HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	8%	80%	12%	5.72
Australians (N=51)	0%	94%	6%	

19. All pregnant women infected with HIV will have babies born with AIDS.

	True	False	Unsure	Chi-Square
Africans (N=50)	59% #	12%	29%	31.98 ***
Australians (N=51)	12%	61% #	28%	

20. People who have been infected with HIV quickly show signs of being infected.

	True	False	Unsure	Chi-Square
Africans (N=50)	22% #	62%	16%	15.58 ***
Australians (N=51)	2%	94%	4%	

21. There is a vaccine that can stop adults from getting HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	4%	65%	31%	5.43
Australians (N=51)	4%	84%	12%	

22. People can get HIV by kissing.

	True	False	Unsure	Chi-Square
Africans (N=50)	24%	50%	26%	8.62 *
Australians (N=51)	16%	77%	8%	

23. A woman cannot get HIV if she has sex during her monthly period.

	True	False	Unsure	Chi-Square
Africans (N=50)	10%	74%	16%	3.54
Australians (N=51)	6%	88%	6%	

24. There is a women’s condom that can help decrease a woman’s chance of getting HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	46%	18%	36%	5.75
Australians (N=51)	28%	37%	35%	

25. A natural skin condom works better against HIV than does a latex condom.

	True	False	Unsure	Chi-Square
Africans (N=50)	18%	38%	44%	8.58 *
Australians (N=51)	2%	58%	40%	

26. A person will not get HIV if he or she is taking antibiotics.

	True	False	Unsure	Chi-Square
Africans (N=50)	6%	74%	20%	.28
Australians (N=50)	6%	78%	16%	

27. Having sex with more than one partner can increase a person's chance of being infected with HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	96%	4%	0%	3.37
Australians (N=50)	88%	6%	0%	

28. Taking a test for HIV one week after having sex will tell a person if she or he has HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	36%	40%	24%	9.59 **
Australians (N=50)	10%	54%	36%	

30. A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	30% #	48%	22%	19.11 ***
Australians (N=50)	2%	86%	12%	

31. A person can get HIV from oral sex.

	True	False	Unsure	Chi-Square
Africans (N=50)	44%	22%	34%	1.00
Australians (N=50)	54%	18%	28%	

32. Using Vaseline or baby oil with condoms lowers the chance of getting HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	6%	56%	38%	7.66 *
Australians (N=50)	6%	80%	14%	

PROTECTION OF SEXUAL HEALTH

Do you think that?

1. Condoms are easy to get.

	True	False	Unsure	Chi-Square
Africans (N=50)	84%	4%	12%	8.70 *
Australians (N=50)	100%	0%	0%	

2. Condoms spoil sex.

	True	False	Unsure	Chi-Square
Africans (N=50)	32%	30%	38% #	11.62 **
Australians (N=49)	35%	55%	10%	

3. Condoms are effective at protecting against AIDS/HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	52%	24%	24%	6.11 *
Australians (N=49)	76%	10%	14%	

4. Condoms are effective at protecting against sexually transmitted infections other than AIDS/ HIV.

	True	False	Unsure	Chi-Square
Africans (N=50)	62%	16%	22%	7.26 *
Australians (N=48)	85%	8%	6%	

5. Condoms are unnatural.

	True	False	Unsure	Chi-Square
Africans (N=50)	56%	12%	32%	13.52 ***
Australians (N=49)	39%	45% #	16%	

6. Partners dislike condoms.

	True	False	Unsure	Chi-Square
Africans (N=50)	64%	10%	26%	8.78 *
Australians (N=49)	45%	35%	20%	

7. It is no problem to have sex without a condom some of the time.

	True	False	Unsure	Chi-Square
Africans (N=50)	38%	44%	18%	12.28 **
Australians (N=49)	18%	78%	4%	

8. You would not have sex if you did not have a condom?

	True	False	Unsure	Chi-Square
Africans (N=50)	30%	54%	16%	3.00
Australians (N=49)	47%	41%	12%	

9. You don’t need to use condoms unless you have a lot of sexual partners.

	True	False	Unsure	Chi-Square
Africans (N=49)	51% #	33%	16%	33.72 ***
Australians (N=49)	8%	90% #	2%	

10. Buying condoms is embarrassing or shameful.

	True	False	Unsure	Chi-Square
Africans (N=50)	54% #	22%	24% #	43.39 ***
Australians (N=49)	10%	88% #	2%	

11. Most people who carry condoms are just looking for sex.

	True	False	Unsure	Chi-Square
Africans (N=50)	44% #	30%	26%	34.20 ***
Australians (N=49)	6%	88% #	6%	

12. It is difficult to bring up the topic of using condoms.

	True	False	Unsure	Chi-Square
Africans (N=50)	60% #	16%	24%	30.95 ***
Australians (N=49)	20%	71% #	8%	

13. Sex without a condom increases the risk of getting a sexually transmitted infection.

	True	False	Unsure	Chi-Square
Africans (N=50)	82%	6%	12%	6.60 *
Australians (N=49)	96%	4%	0%	

14. Sex with a condom means that you are protected from catching a disease.

	True	False	Unsure	Chi-Square
Africans (N=50)	72%	8%	20%	31.55 ***
Australians (N=49)	39%	59% #	2%	

If your husband or partner suggested using a condom you would feel:	Africans (N=49)	Australians (N=50)	Chi-Square
Like he cared about me	49%	38%	1.21
Relieved	22%	24%	.03
Insulted	47%	12%	14.59 ***
Like he was suspicious or concerned about my past sexual behaviour	47%	12%	14.59 ***
Suspicious or concerned about their past sexual behaviour	33%	26%	.53
That he was being responsible	45%	74%	8.70 **

Please place one or more ticks in each of the columns.

	Current sources of knowledge about behaviours that increase the risk of a sexually transmitted infection		**Preferred future** sources of knowledge about behaviours that increase the risk of a sexually transmitted infection	
	African	**Australian**	**African**	**Australian**
Magazines or newspapers	68%	80%	49%	57%
Television	69%	71%	55%	49%
Internet	61%	46%	47%	41%
Radio	47%	37%	37%	33%
General practitioner (doctor)	51%	61%	37%	53%
Alternative therapist	12%	4%	10%	14%
Traditional healer	14%	4%	20%	8%
School	67% **	39%	49%	37%
Sexual health clinic	55%	47%	37%	37%
Community meeting	37% ***	2%	37% **	12%
Family member(s)	35%	39%	28%	33%
Friends	53%	59%	45%	35%
Pamphlets in waiting rooms	45%	65% *	31%	49%
Pamphlets in shopping centres	29%	18%	26%	18%
Mailed pamphlets	22%	18%	24%	27%
Community health nurse	41%	27%	37%	20%
Women's group	57% ***	25%	49%	33%
Telephone hotline	26%	25%	20%	25%

Chi-Square test statistically significant: * p<0.05; ** p<0.01; *** p<0.001

How many times in the **past 6 months** have you gone for treatment to:

1. A medical practitioner (GP)

	Not al all	**Once or twice**	**More than twice**	**Mann-Whitney U**
Africans (N=51)	14%	24%	63%	2.58 **
Australians (N=51)	14%	55%	31%	

2. A hospital clinic.

	Not al all	**Once or twice**	**More than twice**	**Mann-Whitney U**
Africans (N=51)	41%	20%	39%	4.43 ***
Australians (N=51)	82%	12%	6%	

3. A psychologist or counselor.

	Not al all	Once or twice	More than twice	Mann-Whitney U
Africans (N=51)	63%	18%	20%	2.39 *
Australians (N=51)	84%	8%	8%	

4. A dentist.

	Not al all	Once or twice	More than twice	Mann-Whitney U
Africans (N=51)	71%	16%	14%	.65
Australians (N=51)	63%	26%	12%	

5. A self-help group.

	Not al all	Once or twice	More than twice	Mann-Whitney U
Africans (N=51)	75%	12%	14%	3.43 ***
Australians (N=50)	98%	2%	0%	

6. A traditional healer or alternative medicine healer.

	Not al all	Once or twice	More than twice	Mann-Whitney U
Africans (N=51)	94%	4%	2%	1.31
Australians (N=50)	86%	14%	0%	

Who would you approach for help if you thought you had:

	A skin infection		A chest or bowel infection		A sexually transmitted infection		Heart disease or high blood pressure		Chronic tiredness, lack of energy, pain or headaches		Ongoing stress or feeling that you could not cope	
	African	Aust.	African	Aust.	African	Aust.	African	Aust.	African	Aust.	African	Aust.
A medical practitioner (GP)	100%	100%	96%	100%	94%	98%	96%	100%	92%	86%	73%	63%
A hospital clinic	63% ***	10%	69% ***	16%	67% ***	18%	73% ***	20%	63% ***	12%	37% ***	6%
A psychologist or counselor	10%	2%	10% *	0%	10% *	0%	8% *	0%	24% *	6%	51%	41%
A social worker or welfare worker	14% **	0%	12% *	2%	12% *	0%	12% *	0%	22% ***	0%	51% ***	8%
A member of a self-help group	16% **	0%	10% *	0%	10% *	0%	6%	0%	10%	4%	31% ***	2%
A family member or a friend	20%	21%	16%	12%	10%	8%	16%	16%	18%	22%	59%	45%
A traditional/ alternative healer	14%	10%	10%	8%	10%	2%	8%	4%	10%	14%	20% *	6%
A religious leader	10% *	0%	8% *	0%	10% *	0%	6%	0%	4%	2%	31% ***	6%
A community elder	22% ***	0%	10%	2%	14% **	0%	12% *	0%	12% *	0%	59% ***	0%
Someone else	4%	8%	4%	2%	4%	2%	2%	0%	2%	0%	6%	2%
No one	0%	2%	0%	0%	4%	0%	0%	0%	0%	6%	2%	10%

Chi-Square test statistically significant: * p<0.05; ** p<0.01; *** p<0.001

What would stop you from seeking help for the following types of problem?	A skin infection		A chest or bowel infection		A sexually transmitted infection		Heart disease or high blood pressure		Chronic tiredness, lack of energy, pain or headaches		Ongoing stress or feeling that you could not cope	
	African	Aust.	African	Aust.	African	Aust.	African	Aust.	African	Aust.	African	Aust.
Feeling you can cope with this type of problem alone	26%	57% ***	26%	16%	14%	6%	14%	18%	26%	41%	35%	49%
Thinking this type of problem gets better by itself	14%	61% ***	22%	29%	12%	8%	12%	14%	22%	39%	24%	22%
Feeling embarrassed or ashamed to talk to anyone about it	57% ***	6%	39% ***	10%	67%	54%	26% **	14%	26% ***	2%	24%	12%
Thinking you wouldn't know where to go or who to talk to	22% ***	0%	22% ***	2%	28% *	10%	22% ***	0%	22% ***	2%	26% *	8%
Feeling afraid of what your family or friends might think	37% ***	2%	29% ***	0%	55% *	35%	24% ***	0%	20% **	2%	24%	14%
Thinking you might lose your job	35% ***	0%	16% *	2%	22% **	2%	33% ***	0%	35% ***	2%	26% *	10%
Thinking there is no time	8%	14%	8%	8%	8%	4%	6%	4%	6%	14%	8%	12%
Thinking you don't have enough money	14%	18%	12%	12%	10%	6%	20%	8%	10%	4%	10%	12%
Feeling afraid of the treatment or taking medication	12%	6%	14%	10%	16%	10%	22% *	8%	2%	2%	2%	2%
Thinking it takes too long	8%	6%	10% *	0%	14% *	2%	26% ***	0%	12%	4%	10%	2%
Feeling afraid of being hospitalized	10% *	0%	18%	12%	16%	6%	29% *	10%	14%	6%	6%	6%
Thinking how to get there and how long you have to travel.	14%	6%	10%	2%	10%	2%	6%	4%	12% *	0%	10% *	0%

Feeling afraid of being judged by the person you seek help from	35% ***	4%	26% ***	0%	41%	24%	20% ***	0%	22% **	4%	29% **	8%
Thinking no one could help you with this type of problem	12% *	2%	12% *	0%	20% ***	0%	14% **	0%	22%	16%	35%	26%

Chi-Square test statistically significant: * p<0.05; ** p<0.01; *** p<0.001

Appendix C: poll of training options for West African women

What would you like to learn about in the next part of the project?

(please mark the boxes below – you can choose as many topics as you want)

Reproductive and sexual health:

Pregnancy and childbirth ☐

Sexual health issues ☐

How to look after yourself and your family:

Healthy diet and exercise ☐

Stress and coping ☐

Responses were obtained from 23 attendees at the Forum

What would you like to learn about in the next part of the project?	N (%)
Reproductive and sexual health:	
Pregnancy and childbirth	18 (78%)
Sexual health issues	15 (65%)
How to look after yourself and your family:	
Healthy diet and exercise	20 (87%)
Stress and coping	16 (70%)