

Chapter 22

Reasons for limited sexual behavioural change in the sub-Saharan African AIDS epidemic, and possible future intervention strategies

John C. Caldwell

Health Transition Centre, The Australian National University, Canberra.

Abstract

This final overview draws on the papers selected for this volume and other sources to identify obstacles to sexual behaviour change in the African AIDS epidemic. Limitations to existing interventions and possible new interventions are then discussed. Obstacles to behavioural change are identified as the adherence to the present sexual culture; the refusal of leaders to recognize or come to terms with the situation; the sanguine acceptance of death; the silence about the epidemic and the reasons for this; and the limited number of relationships in which condoms are acceptable. It is argued that the existing sexual culture must be largely accepted and interventions determined within it; that attitudes to death must be accepted or sensitization programs must be aimed at all unnecessary deaths and not solely at AIDS deaths; that the silence must be broken by the leadership; and that priority should be given to ensuring maximum use of condoms where they are most likely to be accepted, in commercial sex and in adolescent relationships. Community-based approaches are encouraged, but, among those aimed at limiting infection, success is anticipated to be most likely among adolescents and possibly sex workers. The major focus of educational programs must be changed. There is already sufficient knowledge of AIDS in most communities, and the limited success of intervention programs in controlling AIDS cannot be ascribed to limited knowledge.

The papers published in this book were selected from a conference which came at the end of twelve years' social and demographic research on the sub-Saharan African AIDS epidemic (see Preface). Those involved in the research program had increasingly identified the central problem in containing the epidemic as being the very limited change in sexual behaviour. Explaining the reasons for this lack of change seemed to be the most promising way for developing better interventions and showing why past interventions had not been more successful. In addition to trying to meet its objectives by presenting analyses of African research, the conference also attempted a comparative approach by presenting African findings with others from Asia, the Pacific and Australia.¹

¹ Because less behavioural research has been undertaken on the AIDS epidemic in Asia and the Pacific, this volume contains only five of the fourteen papers presented on the region, and because the Australian epidemic cannot be easily compared with that of sub-Saharan Africa only one of the five papers presented on this country has been included.

There is a mystery at the heart of the African epidemic, which urgently needs explanation. The epidemic has been recognized now for seventeen years and some countries have been identified since the mid-1980s as having the world's highest levels of the disease. The adult prevalence level was, at the end of 1997, 26 per cent in Zimbabwe, 25 per cent in Botswana, 20 per cent in Namibia and 19 per cent in Zambia (UNAIDS 1998). By 1998 in South Africa it had reached a level of 33 per cent in KwaZulu/Natal (Preston-Whyte, ch. 13)² and 40 per cent in some districts of that province (Varga, ch. 2). Because the average period from infection to death in sub-Saharan Africa is probably no more than nine years (Caldwell 1997: 173-174) and adulthood in most of the AIDS statistics begins at 15 years, the lifetime risk of dying of AIDS is a multiple of the prevalence level: 50 per cent at 15 per cent prevalence, and over 60 per cent at 20 per cent prevalence (Blacker and Zaba 1997). This means that many countries in Southern and East Africa are facing the kind of excess adult mortality levels that the Black Death brought to Europe in the fourteenth century or that young Frenchmen faced in 1914-18 (Caldwell 1997: 169).

Much lower HIV seroprevalence levels and AIDS deaths have led elsewhere to marked changes in sexual behaviour and to an early decline in HIV incidence. In both the Netherlands and Australia such markers of changed anal intercourse as anal syphilis fell by around 90 per cent in the first year that HIV/AIDS was seriously discussed. In Australia, HIV incidence also began a long decline (Dowsett, ch. 19) and similar patterns have been recorded in other developed countries. In northern Thailand the first evidence of the arrival of the AIDS epidemic led to brothels closing as clients' numbers dwindled, even before government interventions were put in place. Furthermore, this occurred at HIV levels that were a fraction of those found in the main AIDS belt of East and Southern Africa (Im-Em, ch. 14).

There is now some evidence of the beginning of sexual behaviour change in Uganda and of declining HIV incidence and prevalence (Konde-Lule 1995; Kilian *et al.* 1999). Research elsewhere in sub-Saharan Africa shows no such change, and that is echoed in the chapters of this book (Amuyunzu-Nyamongo *et al.*, ch. 1; Varga, ch. 2; Malungo, ch. 4; Höjer, ch. 5; Preston-Whyte, ch. 13). At first it was thought possible to explain this lack of change in terms of inadequate information, and to seek to overcome the problem through better and more intensive informational and educational programs. Over time, this explanation has become ever less tenable. The Demographic and Health Survey program had shown that among men, 98 per cent knew of AIDS in 1991-92 in Tanzania and 99 per cent in 1998 in Kenya. For women, levels of knowledge were 93 per cent in Tanzania in 1991-92 and 99 per cent in Zambia in 1992 and in Kenya in 1998. The great majority knew of the dangers of sexual transmission (Ngallaba *et al.* 1993; Gaisie, Cross and Nsemukila 1993; National Council 1999). All reports in this book support that view. None deny Höjer's (ch. 5) conclusion from Kenyan and Zambian studies that there is little evidence that a knowledge of AIDS changes sexual behaviour, or Varga's (ch. 2) that 'most studies suggest a combination of adequate knowledge and continual high-risk behaviour'. Indeed, so deeply has HIV/AIDS information penetrated that most Africans know a good deal more about it than about other sexually transmitted diseases (STDs). In South Africa Varga (ch. 2) reported that many of the youth are tired of hearing the messages.

This does not mean that everyone accepts the whole message. Some have reacted against it, probably often to justify sexual behaviour which they do not intend to change. At its extreme this takes the form of claiming that the whole AIDS informational campaign is based on a fiction (Varga, ch. 2). More often the claim is that there are already cures (Orubuloye and Oguntimehin, ch. 9), or that, for those just infected, there will be by the time they reach the symptomatic stage.

² Chapter references indicate chapters in this book.

Nevertheless, there is now little doubt that the failure or refusal to change from high-risk sexual behaviour is not a result of a lack of knowledge of the disease or its consequences. It was the aim of the meeting reported here, and of the focused research that led to it, to discover why HIV/AIDS knowledge did not yield behavioural change sufficient to limit the epidemic. There is also now little doubt that more intensive or better constructed informational campaigns will not do much better. No national educational campaign is likely to be more intense than the Hadden project in peri-urban areas of KwaZulu/Natal, yet, although the project was painstakingly thorough, and carried out in the midst of an AIDS epidemic of unprecedented magnitude, the final conclusion was that it had yielded a small increase in the use of condoms but no other change in sexual behaviour (Preston-Whyte, ch. 13).

The shape of the problem had been discerned a decade ago, although at that time there was far less evidence of failure of informational programs, and no realization that, in spite of ever more publicity for AIDS, the epidemic would develop in Southern Africa to an extent not experienced even in East Africa. The early knowledge was summarized in 'Underreaction to AIDS in sub-Saharan Africa' (Caldwell, Orubuloye and Caldwell 1992a). That paper identified, as factors associated with the underreaction to the AIDS epidemic at individual, community and national levels, beliefs intact or vestigial, that death causation was multiple and did not rest on a single mechanism (e.g. viral infection would have no effect unless witchcraft or other machinations were determining it would take hold), that the timing of death was predetermined, and that the most certain way of becoming sick was to worry about the possibility and change one's way of life, especially an extroverted pattern of sexual activity. This paper paid insufficient attention to one matter that came increasingly to the fore in the research program, namely a belief, logical in a polygynous society, that males were biologically programmed to need sexual relations with more than one woman, even parallel relationships. That this belief was widespread, perhaps almost universal, and was held almost as strongly by women as men, was reported in Orubuloye, Caldwell and Caldwell (1997).

All research in the area is rendered difficult by the necessity for self-reporting, always suspect, of sexual behaviour (*cf.* Anarfi, ch. 7). But techniques have evolved and some checking is possible (Orubuloye, Caldwell and Caldwell 1992, 1997). At the worst, one would expect reporting misstatements, in this period of ever-increasing AIDS information, and successive interviews or interviews with different samples over time to show a diminution in reported extramarital sexual partners or parallel partners. The fact that this has not happened seems to confirm the lack of behavioural change.

The need for sexual activity

Males are widely described as suddenly needing sex, often with new partners. When men in the hotels and bars of Ado-Ekiti, Nigeria, explained why they suddenly sought sexual relations with one of the young women there, they spoke more often of an urge which could be neither denied nor postponed, rather than of the desire for pleasure (Caldwell, Orubuloye and Caldwell, ch. 10). Varga (ch. 2) reports a young man's attitude as 'If my penis wants it, it must get sex'. Fear of AIDS has not diminished such feelings (Orubuloye and Oguntimehin, ch. 9). Inability to control sexual urges and a blunting of the fear of AIDS is often increased by drinking and drunkenness, a situation aggravated by the fact that so much of the commercial sex is available in bars and hotels. This situation, like drunkenness itself, appears to be particularly acute in East and Southern Africa (Amuyunzu-Nyamongo *et al.*, ch. 1; Mupemba, ch. 12).

Female sex workers are readily available except in the smallest villages. In contrast to the situation in much of Asia (Jenkins, ch. 18), commercial sexual activities pose no

subsequent insurmountable social problems in Africa, and most of the young women involved hope later to buy a business in their home towns and to marry (Orubuloye, Caldwell and Caldwell 1994). But men have transactional relationships with a much wider range of women, often long-term relationships incurring subsequent responsibilities for children. This is because many women need additional economic support, and often physical protection. To achieve this Preston-Whyte (ch. 13) reports that in South Africa they are often willing to accept a considerable level of male violence.

A group in conspicuous danger in sub-Saharan Africa comprises adolescents and young adults, with high seropositive levels appearing among females by 15-19 years of age and among males at 20-24 years, ages at which most Africans are now still unmarried. All studies show that sexual relations are expected as teenage relationships grow stronger. All studies also report a central problem characterizing these relationships: the boys are much less likely than the girls to regard sex as cementing the relationship. Indeed, the boys are often most motivated by the desire to boast to their male friends about the number of their conquests. Girls have no answer to their boyfriends' taunts that a failure to consummate the relationship shows a lack of love (Caldwell and Caldwell 1987: 240; Varga, ch. 2). Varga reports a typical South African adolescent male as explaining: 'Once you have kissed her, that means you are preparing for sex. If she refuses at that point, you must just force her'. Her survey findings showed that 50 per cent of girls had attempted to resist the first advances of their most recent boyfriend, but 71 per cent of these attempts proved unsuccessful. Not that much discussion occurred: 'Partner dynamics were characterized by avoidance of direct communication, with unspoken assumptions about appropriate sexual behaviour and male dominance in most aspects of sexual decision-making'. Indeed, gender-based violence was often seen as a sign of affection. Preston-Whyte (ch. 13) reports that the girls' resistance was undermined by the fact that most of their peers would ridicule them for their failure to hold a boyfriend because they refused sexual relations. This peer pressure often extended to them becoming pregnant, a very different situation from that reported by Caldwell, Orubuloye and Caldwell (1992b) in a provincial town of southern Nigeria and by Amunyunzu-Nyamongo *et al.*, (ch. 1) in Kenya.

A similar situation exists among the street children of Accra, whose lives, protection, accommodation and finances are all frequently related to sex (Anarfi, ch. 7). High levels of sexual activity appear to characterize the adolescent society of Ghana's Central Region even though 80 per cent say there should be no sex before marriage, conflicting with the views of 50 per cent that it is all right in their own group and 80 per cent who will countenance it if marriage is in the offing (Awusabo-Asare *et al.*, ch. 11). Amunyunzu-Nyamongo *et al.* (ch. 1) sought to discover why there was so much early sexual activity in Kenya. They found it was regarded by the young as natural and an expression of love, as well as activity that their peers expected of them if they were normal young people. Indeed, there was little other entertainment. Nevertheless, most girls regarded premarital sexual activity as sinful and most feared pregnancy.

Peer pressure towards sexual activity doubtless exists, although usually less persuasively, among adults, especially in bars or at dances. Mupemba (ch. 12) reports it among drivers in Zimbabwe, and Im-Em (ch. 14) among unmarried young men in Thailand urging others to accompany them to brothels.

Silence

'Underreaction to AIDS...' (Caldwell *et al.* 1992a) had as its central focus the silence with regard to AIDS, and the refusal to discuss it adequately at any level of society. There is little in subsequent research or in reports in this book that modifies these observations. AIDS is

regarded as a strangely different disease, in much the way, only more so, that Western societies have looked upon cancer. In a region where beliefs in witchcraft have great persistence, only two-fifths of southern Nigerians were certain that AIDS did not have a supernatural element (Caldwell *et al.*, ch. 10): 'It was strange, hidden, almost without symptoms, and, above all, it struck down people in the prime of life when they were not supposed to die'. In East Africa the disease is regarded as a 'curse', a term used in its original sense (Amuyunzu-Nyamongo *et al.*, ch. 1). It is widely regarded as a punishment for sexual sin, a view reinforced by Christian and Muslim religious leaders (Orubuloye, Caldwell and Caldwell 1993).

The silence is confirmed by the evidence from funerals, where no one says the death was due to AIDS. In Nigeria, in spite of frequent attendance at funerals, most people could name only one death that they were certain was caused by AIDS, namely that of Fela, the famous musician whose cause of death was revealed in the media (Caldwell *et al.*, ch. 10). In southern Zambia where the annual death rate has climbed to 30 per thousand population, and where probably at least 50 per cent of funerals are occasioned by AIDS deaths, this is admitted by families in only three per cent of cases (Höjer, ch. 5). Admittedly, sexual activity has always been difficult to discuss, especially between the generations. Awusabo-Asare *et al.* (ch. 11) report that young people consider their fathers to be stern and therefore not the people with whom to discuss issues of sexuality. In South Africa mothers will not acknowledge that their daughters are sexually active (Preston-Whyte, ch. 13). Families who do admit to having members with AIDS may be isolated and, it has been reported from South Africa and Tanzania, individuals may be in danger.

The silence from many governments, Uganda being a conspicuous exception, arises both because their subjects are silent and also because they do not want to be exposed as unable to influence sexual behaviour. Indeed, they realize that any full-scale attempt to do so would pit them against young to middle-aged males, the group that most governments fear most. Certainly, there is a grassroots feeling that governments would like to use the AIDS epidemic as an excuse to ally themselves with the churches and other killjoys to limit one of the few popular pleasures; compare the experience in early Nigerian research on sexual behaviour reported in Orubuloye, Caldwell and Caldwell (1991: 63). Meursing (ch. 3) and Amuyunzu-Nyamongo *et al.* (ch. 1) cite Zimbabwe and Kenya respectively as countries that were extraordinarily late to respond to the epidemic. It would be easy for visitors to Thailand, where the adult seropositive level is two per cent, and Zimbabwe, where it is 26 per cent, to conclude from government activity and media reports that the epidemic's level was higher in Thailand.

Attitudes to death

In 'Underreaction to AIDS...' we drew attention to 'an extraordinary stoicism towards death' (Caldwell *et al.* 1992a: 1178). Fear of death was very far from dominating decision-making about life choices. Approaching death was faced with acceptance and courage. Foreign observers throughout Africa expressed astonishment at the contrast with the situation in their own countries.

The 1998-99 research in southern Nigeria fully confirmed this report (Orubuloye and Oguntimehin, ch. 9, Caldwell *et al.*, ch. 10). Only one-fifth of the respondents said that they were afraid of death, even premature death. Most thought it would not come because their time on earth was not yet up. They knew this because their spirits were still high and they still faced life keenly and with vigour, demonstrated in many cases by an adequacy of sexual experience. Half the respondents linked this with concepts of destiny or predestination. Most thought the surest way to death was through worrying about it and devoting too much worry

to its avoidance. Orubuloye and Oguntimehin, in 'Death is pre-ordained, it will come when it is due...' (ch. 9), reported: 'It is also a general belief that it is not necessary to start tracing the cause of death. When and how one dies should not be of significance to anybody'.

Such findings spanned the sub-Saharan African region. Awusabo-Asare *et al.* (ch. 11) reported on Ghana in 'All die be die...', a title taken from a Ghanaian proverb advising that death should be accepted when it comes; they found such acceptance to be general and to be reinforced by the belief that the cause, and apparently the timing, of death were not very important. Amuyunzu-Nyamongo *et al.* (ch. 1) summarized the East African philosophy as 'Everybody will die anyway'. Most feel that death is uncontrollable by human beings.

There is a particular poignancy about adolescent attitudes. Awusabo-Asare *et al.* (ch. 11) argue that the disease particularly hits the young because risk-taking is for them part of identity creation, particularly in conditions of lengthening adolescence. In the circumstances of the Accra street children, doubtless repeated in every city in Africa, Anarfi (ch. 7) points out that their way of life hardly gives, or can give, priority to caution in sexual behaviour. In South Africa, Varga (ch. 2) claims that many of the young see no reason for caution because they already regard themselves as the corrupted and doomed generation.

Part of the reason for many people feeling helpless to change the course of events is a belief that witchcraft or other supernatural forces play at least some part in causing HIV or ensuring that its pathogens take hold. Höjer (ch. 5) reports of a research program in rural Zambia and Kenya that such beliefs were found to be important in shaping reactions to the epidemic. In southern Nigeria only 10 per cent of respondents, with higher levels in the one rural area studied, said the disease was the product of witchcraft, but many more thought there was probably some supernatural element (Caldwell *et al.*, ch. 10). One-quarter believed that the vigorous, healthy person who does not worry about death was unlikely to become infected with AIDS, and around half thought that an AIDS death would not take place unless it had been destined. Awusabo-Asare *et al.* (ch. 11) argue that in Ghana older beliefs in predestination are now being reinforced by the rise of Christian fundamentalism. Indeed it is possible to argue that the African belief in an afterlife justifies risk-taking. This is doubtful. The Nigerian research showed that a considerable proportion of contemporary Africans are doubtful whether there is an afterlife (Orubuloye and Oguntimehin, ch. 9; Caldwell *et al.*, ch. 10). Many who do believe in it conclude that the sexual immorality which resulted in AIDS infection would mean punishment in that existence.

There is also evidence from this world of much more pragmatic attitudes. Höjer (ch. 5), Anarfi (ch. 7), Awusabo-Asare *et al.* (ch. 11) and Mupemba (ch. 12) all argue from research in Kenya, Zambia, Ghana and Zimbabwe, that attitudes have been shaped by high mortality and the fact that death threatens from many other causes. This interpretation can be debated. By the early 1980s, when the AIDS epidemic was first identified, life expectancy at birth was 54-56 years in Ghana, Kenya and Zimbabwe, and around 51 years in Zambia (United Nations 1998). Certainly, in the first three countries hazards to life had declined decisively. A 20-year-old could expect to live to about 65 years. The mortality situation was similar to that in Britain and France near the end of the second decade of the twentieth century when Spanish Influenza struck and their populations did their best to avoid infection (Keyfitz and Flieger 1968). Admittedly, life expectancies have since fallen in East and Southern Africa, in Zimbabwe and Zambia perhaps to 44 and 40 years respectively in 1998 (United Nations 1999) and to 40 and 37 in 1999 (Population Reference Bureau 1999). It is possible to argue that the societies had not fully adjusted to lower mortality and that risk-taking attitudes were formed earlier, for life expectancies were around 40 years in the early 1950s, equivalent to Britain and France around 1870; they may have been as low as 28 years around 1920 (Caldwell 1967:94). One possibility is that the rise in mortality occasioned by AIDS in Eastern and Southern Africa had made people more resigned to death and more careless about

life. Ayiga *et al.* (ch. 6) argue that the opposite has happened in Uganda and that higher mortality has made the society sensitive to the perils around them, this being particularly the case among the educated. That this may indeed be the case is given support by the reported decline in HIV incidence and prevalence in Uganda.

Another possibility is that the AIDS message is wholly or partly disbelieved. 'Underreaction to AIDS...' reported a scepticism about the foreigners' message, which was often regarded as not wholly wrong but hysterically exaggerated (Caldwell *et al.* 1992a: 1171). This attitude is assisted by the long HIV/AIDS latency period. Indeed, Meursing (ch. 3) reports that during this period many Zimbabweans diagnosed as being seropositive fluctuate in their belief that they are infected, presumably because of scepticism either of diagnostic methods or of the existence of the disease itself. Marck (ch. 8) notes that many truck drivers believe the campaigners for sexual change understate the likelihood of an early cure being found.

The risk of AIDS may well be regarded as of little importance compared with other more immediate and assured objectives. Both Varga (ch. 2) and Awusabo-Asare *et al.* (ch. 11) report that this is so in adolescent sex negotiations in societies as far apart as South Africa and Ghana.

The condom solution

Until recently there has been widespread suspicion and hostility to condoms in sub-Saharan Africa. With the coming of the AIDS epidemic this situation has changed faster than might have been anticipated and successive Demographic and Health Surveys invariably show steep rises in use, although from a very low base. Use is almost entirely outside marriage and mostly apparently in commercial sex (Gardner, Blackburn and Upadhyay 1999: 4). Judging by import and retail figures, use is still fairly restricted; social marketing, a major source of condoms in the region, distributed 201 million condoms in 1997, or less than two per adult male (Gardner *et al.* 1999: 20).

There are strong feelings against condom use among African males. It has become almost *de rigueur* to ascribe this mostly to prejudice. Gardner *et al.* (1999:9), referencing intervention and advocacy groups rather than anthropological researchers, summarize: 'Some people have a negative view of condoms because of personal experience with them, but more often the problem is bad reputation, false rumors and myths'. This almost certainly understates the case against condoms. Varga (1997: 81) reports that sex workers in Durban favour condoms precisely because they insert a barrier layer and prevent a feeling of intimacy. In the words of a prostitute, 'Condoms were made to keep flesh apart that isn't supposed to mingle'. This is the male case against their use, and the attitude is particularly strong in a part of the world where it is common for males to insist on female vaginal tightening and drying with the aim of increasing the flesh-to-flesh contact (Brown, Ayowa and Brown 1993; Sandala *et al.* 1995; Orubuloye, Caldwell and Caldwell 1995). Intervention programs might do better to admit the case against condoms but to emphasize that it is overwhelmed by the case for protection against AIDS. This might prove particularly successful amongst males feeling an uncontrollable urge to have sex with prostitutes.

What comes clearly out of all African behavioural research is that condom use is much more likely in fully commercial sex than it is in any longer-term or more intimate relationship; and it is almost unknown in marriage (Varga, ch. 2; Meursing, ch. 3; Orubuloye and Oguntimehin, ch. 9; Caldwell *et al.*, ch. 10; Mupemba, ch. 12). Demanding condom use in anything but the most commercial relationship is regarded as an admission either of risky behaviour elsewhere or of knowing one is seropositive. Prostitutes do not use condoms with their boyfriends because such use is regarded as incompatible with a close relationship and as

an admission that they practise unprotected sex with at least some clients, and few are willing to admit that their boyfriends are mostly those who also have a high-risk sex life. Varga (1997:81) reported that, with the transition of a man from occasional client to boyfriend status, sex workers usually cease using condoms in their relationship.

Adolescents have particular difficulty with condom use. Many do not know where to get them or are apprehensive of approaching providers for them (Awusabo-Asare *et al.*, ch. 11). Girls cannot provide them since such an action suggests to the boys an unwillingness for intimacy and a suspicion of promiscuity (Amuyunzu-Nyamongo *et al.*, ch. 1; Awusabo-Asare *et al.*, ch. 11). Those who pester their boyfriends to use condoms cause annoyance and are ignored (Anarfi, ch. 7). Unprotected sex is a sign of young love, and accordingly boys as well as girls find it difficult to negotiate safe sex (Varga, ch. 2). In South Africa, even unmarried adolescent girls fear that condom use will prevent conception and give rise to the suspicion that they are sterile (Preston-Whyte, ch. 13).

Nevertheless, Marck (ch. 8) concluded from the studies of truck drivers that they are more likely to be induced to use condoms consistently in sex with prostitutes than to give up such activity or to reduce the number of their partners. The greatest hope for a condom solution to the epidemic would be to achieve a very high level of condom use in commercial sex.

Other public health interventions

The African HIV/AIDS epidemic contrasts with epidemics in developed countries in that very few people know their HIV status. With the exception of the Uganda report (Ayiga *et al.*, ch. 6), the research makes it clear that the great majority do not want to know their status and do not want to be tested (Amuyunzu-Nyamongo *et al.*, ch. 1; Varga, ch. 2; Meursing, ch. 3). If they do know that they are seropositive, some people, at least in KwaZulu/Natal, want to spread the infection (Varga, ch. 2). In Zimbabwe, HIV-positive women may refrain from telling their husbands, and, if they do tell them, the husbands are likely to continue conjugal sexual relations and refuse to be tested (Meursing, ch. 3). In South Africa sexual relations will continue because it remains important, or even becomes more important, that the wife should continue to bear children (Preston-Whyte, ch. 13). In Thailand there is a similar reluctance to be tested (Im-Em, ch. 14).

Such reluctance may extend to testing for other STDs. The Accra street children in Accra prefer to wait for symptoms to develop so they can undertake self-medication. Many will not even accept free testing and demand to be paid (Anarfi, ch. 7).

The community initiative solution

It is tempting to think that grassroots community action might succeed in turning back the epidemic when top-down approaches have failed. Certainly the attempt should be made.

Dowsett (ch. 19) demonstrates convincingly that the gay community in Australia was largely responsible for rolling back the epidemic which endangered it. It was able to do this because it had already mobilized a substantial proportion of men who preferred sex with men to recognize themselves as a community with special interests, to take pride in their sexual orientation, to 'come out' by identifying their orientation, and to demand that discriminatory laws and social outcasting be changed. Their considerable success depended partly on changes in outlook in the broader community, but they did a great deal to catalyse and accelerate those changes.

Subsequently, from about 1983, they confronted the AIDS epidemic as something that presented a particular danger to their community. They did not take it that the epidemic

showed that their way of life was wrong or even foolish, but they did countenance such changes in their sexual behaviour as were necessary to lessen the risk of infection. They encouraged the HIV-positive to reveal themselves, much as they had earlier encouraged members of their community to 'come out' with regard to their homosexuality. The changes in sexual behaviour mostly took the form of compliance with condom use except where sexual relationships were confined to a couple, neither of whom was seropositive. There was no large-scale move towards reducing the number of partners or using sexual alternatives to anal penetration, and very marked success in reducing the incidence of new HIV cases can be attributed mostly to condom use.

Dowsett concludes that success depended on 'information about AIDS and knowledge of HIV transmission, the effects of peer education and support, inputs from factors such as self-efficacy or self-esteem, perceptions of risk, availability of and access to condoms, and contacts with the epidemic to contribute to the processes of behavioural change'. What was successful was

something collective, something that noted groups, peers or communities rather than individual activity...It means that any involvement in gay life is [now] also an immersion in HIV/AIDS and in its key concern of developing, sustaining and living with safe sexual practice...The lesson here for all communities fighting HIV/AIDS is to identify that collective action and mutual commitment and those cultural underpinnings as resources to mobilize to the cause of HIV prevention and to care and support for people with AIDS...The gay communities in Australia, as marginalized and stigmatized subcultures, had a strong sense of themselves as collectively effective and responsible for their own survival...

This is a strong and optimistic message. Translating it elsewhere, Dowsett believes that 'This will apply to sex workers, injecting drug users, villages, people with haemophilia and so on'. It might be noted that in the Australian war against AIDS and for the recognition of subcultures, sex workers have developed more of a community feeling but have had only limited success in removing legal restrictions, while drug users have had only minimal success in organizing themselves or removing restrictive and punitive laws.

There is some faltering when addressing cultures like those of sub-Saharan Africa: the 'notion of sexual communities... will not work as well with heterosexual activity, unless there is a strongly developed sense of community among heterosexually active people...Ascertaining the sexual culture of any such community is a central research task for effective health education'. Dowsett is, with good reason as is shown in the reports of Anarfi (ch. 7), Varga (ch. 2) and Höjer (ch. 5), surer of the situation when turning to adolescents:

Young people are developing their own meaningful and complex sexual cultures right under our very noses. We often cannot see these cultures or will not recognize their legitimacy. If we are to reach our young people with safe sex messages, then we must work with the cultural resources young people themselves provide... the engine for stopping the epidemic lies in community.

I have set out this stance at length because it is so much at odds with the current approaches to the African AIDS epidemic, approaches which have not been conspicuously successful. Just how relevant it is to the sub-Saharan African situation I leave to the overview.

Overview

In the main AIDS belt of East and Southern Africa is found about one-thirtieth of the world's population but around half of all HIV/AIDS cases. The epidemic dates back over two decades

but only in one country, Uganda, do we have reasonably clear evidence of a decline in national incidence or prevalence levels. In fact in most of these countries levels continue to rise, reaching unprecedented and unpredicted heights in Southern Africa where national levels among adults reach 25 per cent, implying that a majority of people will die of the disease and up to 20 years will be wiped off life expectancy at birth. Elsewhere such levels have only been known among subnational groups, such as, in the industrialized countries, homosexuals and intravenous drug users. Among many of the developed world's gay communities the epidemic is now largely under control.

In contrast to these communities, the sub-Saharan African epidemic is very largely a heterosexual one as is shown by the near-parity by sex in the infected population. There are some features of the African epidemic that were more clearly seen in the conference when contrasted with the Asian epidemic.

The sexual culture of sub-Saharan Africa puts the society taken as a whole more at risk of both traditional STDs and AIDS than the sexual culture of the ancient agrarian societies of Asia. In the latter, in order to preserve parents' plans for the inheritance of privately controlled land and for the marriage of their children into appropriate social classes, there has been for aeons a fierce control over female premarital and extramarital sexual activity, much of the control being expressed in and enhanced by the world religions which developed in the region (Goody 1976; Caldwell, Caldwell and Quiggin 1989, 1991). In sub-Saharan Africa, communal land, the absence of daughter inheritance, and religions which stressed fertility rather than virginity meant a less fanatical stress on female sexual propriety. Sexually straying wives or betrothed daughters might still be in danger, and might even be killed, but such punishments were often haphazard and the transgressions were regarded more as crimes against property and were not subject to religious damnation. There is some debate over the exact situation in traditional society (but see Caldwell, Caldwell and Orubuloye 1992), but such a system led in modern times to one where women have a substantial amount of autonomy, there is sufficient evenness in the treatment of boys and girls to achieve parity by sex in child mortality, sex workers can regard prostitution as merely part of their life cycle, and there is a good deal of premarital and extramarital sexual activity. The conference papers on one of the ancient agrarian societies, Bangladesh, describe a situation where most women are in purdah, prostitutes are outcast for life, there are lower levels of non-marital sex, and most male premarital or extramarital sexuality finds its outlet in brothels (Caldwell and Pieris, ch. 16; Bloem *et al.*, ch. 17; Jenkins, ch. 18). The Asian situation is less confining to women in the more recently developed agrarian society of Thailand, although even there most non-marital male sexual relations are with prostitutes (Im-Em, ch. 14). In the shifting-cultivation tribal populations of Manipur, India, the social system, position of women and level of HIV/AIDS are startlingly like those in Africa (Gifford *et al.*, ch. 15). When 'The social context of AIDS in sub-Saharan Africa' (Caldwell *et al.* 1989) first appeared we were startled to find that it was widely taken to be an attack on African society, even on African womanhood. No one took it to be an attack on Asian society. This view was strongly held by the adherents of the world religions, Christianity and Islam, nurtured in ancient Asia. This refusal to come to terms with the real sexual culture of Africa provides much of the explanation for the failure of behavioural interventions in the region. Much good has been derived from the African sexual system, but with social and economic change it became susceptible to STD epidemics and ultimately, and unforeseeably, to AIDS.

The failure to grapple successfully with the African AIDS epidemic has been compounded by silence or near-silence. It is difficult to describe this situation adequately. AIDS is not discussed in households where it has struck or in villages where it is rampant. In countries which are being ravaged by it to an extent attained by few wars, newspaper references are subdued and report conservatively on Health Department or WHO bulletins.

There are no public demonstrations or meetings. Government interventions are at a low level and are often eclipsed by NGO efforts. Uganda is the most marked exception in this regard and it may be no coincidence that HIV levels there are falling.

Individual and family silence owes something to fear of being shunned and isolated, and something to those religious figures who preach that the epidemic is the punishment for sexual sin. Yet this is certainly not the whole explanation. The silence owes a great deal to suspicions that AIDS is more than an ordinary disease, that it has supernatural elements or that it is caused or manipulated by witchcraft. Individuals and communities do not demand more from governments because of a sense of guilt, a feeling that they have brought the calamity upon themselves. This is compounded in many by a feeling that the deaths were inevitable, perhaps predetermined.

The government silence is partly explained by the failure of the people to demand more of them, politically a very convenient failure in a situation where governments are unsure what to do and where action could be costly. Governments also fear that the decisive action expected of them is changing the sexual practices of the population, especially its most volatile section, young to middle-aged men. They fear failure and they fear inciting the hostility of the politically most dangerous part of the population. The government silence is partly explained by the surprising fact that overseas donor governments have not put sufficient pressure on political leaders to speak out and do so continuously and to organize against the disease. There have been no inducements, such as massive help to the health system and to programs to curb AIDS given on condition of sustained and high-profile leadership. Instead much of the aid has come in smaller amounts and less conspicuously through non-government organizations, which do an essential job but cannot give the impression of the whole society and its leadership organizing. Bolme (ch. 20) is probably right when he insists that an essential (but possibly insufficient) key to success is breaking the silence at the highest government levels.

Perhaps even more fundamental in explaining the continuing high levels of new HIV infections is an acceptance of death – a surprising lack of fear of it. No more than the sexual system is this an unworthy aspect of the society, but it is not a characteristic that induces the early curtailment of epidemics. Reducing the risk of death has never been the sole aim of mankind. Risk-taking in sport and for thrills or just the determination to live a fairly carefree life have always been alternatives and have weighted the scales a little more towards death. The health transition in the West over the last two hundred years has been partly a process of people, communities and nations devoting increasing time and care to reducing the risk of death (Caldwell 1999). Simons (1999) explained this trend in terms of an increasing conviction that death was the ultimate tragedy and that almost any effort was justified in its avoidance, and in individuals increasingly feeling personal responsibility for attempting this avoidance in their own lives and in the lives of those around them. The growing importance given to survival arose partly from a secularizing society with increasing doubts about an afterlife, and partly from the achievement of lower mortality levels as living standards rose and scientific knowledge expanded. The intensification of the belief in personal efficacy and responsibility was a product of the rise of capitalism, the industrial revolution, growth of towns and decline of agriculture, and the associated weakening of the hierarchical traditional family.

The unwillingness to award death avoidance quite such dominance over all other aims is because Africa has not travelled quite so far down this road, although modern schooling systems and falling death rates were propelling it this way. This stoical and brave attitude to death was also prompted in many by the belief that the timing of death was at least partly predetermined. It is possible also that those exposed longest to the world religions were more focused on the significance of death. The important point may not be that the religions

offer an afterlife or reincarnation but that so much of their attention is on death. Thailand proved surprisingly sensitive to the dangers attendant upon HIV/AIDS. The important point about the African AIDS epidemic is not that the message about the risk of death from AIDS has not had sufficient impact, but that the message about the high priority that should be given to all deaths has not reached a sufficiently receptive audience.

In the absence of cheap vaccine against HIV and of major behavioural change in the numbers and types of sexual partners, condoms remain the chief weapon against the AIDS epidemic. It would be unwise to place too much hope on a marked rise in condom use within marriage or in other fairly stable relationships. All the evidence suggests that this is unlikely. The most promising area for success is in the most commercial sexual relationships. Something might also be achieved in promoting condom use among adolescents.

The reason for expecting greatest success among prostitutes is that they alone have reasons beyond the risk of AIDS or other STDs for favouring condoms. These create a physical and emotional barrier between the women and their clients. Many now do not use condoms regularly because there are no supplies, or because clients offer extra money or threaten them physically as inducements against their use, or because they get no outside support in their efforts. There are experimental efforts, some apparently moderately successful (Esu-Williams 1995), to provide support and supplies. But, compared with the challenge, the scale of these efforts is pitiful. They should be on a national scale, well organized from national government to local level, and well funded.

The Thai model, with its employment of Health Department inspectors and threats of police closure of brothels, should have been employed long ago. There will, of course, have to be modifications to suit African conditions. A major obstacle is the fact that African prostitutes are usually not employees but individual operators renting rooms or part-use of rooms. They are often transient. This means either that they have to be approached individually or responsibility has to be placed on those who rent out the rooms or own the bars or hotels. Police may take bribes rather than promote condom use, but experiments have already shown that these problems can be solved (Esu-Williams 1995: 223). Such efforts will miss many sex workers not working in central areas or institutions or not charging customers at the time of each sexual episode. But it is the most commercial relationships which are the most potentially dangerous because the women involved have the greatest number of partners, thus exposing themselves and their clients to exponential risks. Because of the relatively low HIV risk posed by each episode of vaginal intercourse, high-level heterosexual AIDS epidemics are sustained only in unusual circumstances, and there is a potential for rolling them back if important interventions are successful. It may well be that, if a high degree of success were achieved in ensuring the use of condoms in the most commercial of sexual relations, then in many African countries HIV levels would begin to fall.

The other promising area for condom intervention is that of the sexual activities of adolescents. There are several reasons. Most adolescents are equally concerned that sexual activity should lead to neither conception nor AIDS. Increasingly girls fear the effect of premature motherhood and marriage in keeping them in the traditional sector of society and the economy rather than in the modern sector, through forcing them out of school and from getting their first experience in offices or the towns. Boys can also find that there are problems if they have fathered a child by a girl whom they do not want to marry or are in no position to marry. Much of the excitement of young sex is about it having taken place at all and not about whether it is sustaining the same level of sensual pleasure. Often it takes place without forward planning and girls are unlikely to be on the pill or to be fitted with an IUD. In these circumstances condoms alone are likely to meet the need.

Probably the community approach is most likely to work if real sexual communities can be identified. They would have to be groups with a specific sexuality which they would

be willing to identify with and to justify. This brings us to the crux of the African dilemma with sexual cultures and probably to the crux of the AIDS problem. There is no question that African males have always enjoyed premarital sexual relations; the very late age at marriage dictated by high levels of polygamy ensured this. There is more controversy over the females' situation and who satisfied the sexual demands of the large numbers of single males.

What is no longer contested, given the research undertaken since the AIDS epidemic began, is that most of the population experience significant levels of premarital sexual relations and quite a high proportion of those married experience extramarital relations. However, the vocal members of the community, especially religious and political leaders, either deny this or preach that the situation is sinful and should be rectified. The reluctance of the community to move in this direction has been startlingly revealed by a reluctance to change sexual behaviour even in the face of the AIDS epidemic. The situation is rendered more complex by the fact that even the silent majority are divided about the form sexual behaviour should take, for far more wives than husbands believe that sexual activity should and could be confined within marriage (Orubuloye *et al.* 1997). Christian leaders' views are important because the great majority of the population of the main AIDS belt is now Christian, but they tend towards fundamentalism and away from sexual tolerance or relativism. The national elites are sensitive to any suggestion that sexual behaviour patterns may in any way be distinctive. The result is that the community is far from recognizing the actual patterns of sexual behaviour, let alone justifying them and settling down to see how they can be made compatible with minimizing the AIDS risk. This goes a long way towards explaining the silence of governments and the inadequacy of the battle against AIDS. Village-based community action against the epidemic might well prove effective in mitigating its damage, but in preventing infection would almost certainly be vitiated by a gulf between the sexual behaviour advocated and that actually occurring.

The greatest promise of success for the community approach would be among adolescents. This would have to involve the recognition of the near-universality of premarital sexual activity with adolescent leadership in discussing it in a value-free way. Adolescent leadership and organization, based on such recognition, might go a long way towards organizing the adolescent community to reduce the risk of both HIV infection and pregnancy within the age group. Probably the situation could also be improved with regard to unsafe abortion and girls' relationships with much older men. One should not underestimate the likely hostility from the religious leaders, the schools and the adult establishment. The adolescents will obviously need some adult assistance, not least in educating the groups just identified.

Other possibilities are sex workers and their clients, probably as two separate communities. A community approach by prostitutes is probably necessary to ensure almost universal condom use in their work. It would probably be necessary to be somewhat euphemistic and for them to describe themselves as entertainers, with sex as part of their occupation, but this is close to the African situation and most see themselves this way. A community of men-who-go-to-prostitutes may be harder to bring into existence, although most would justify their behaviour to themselves and their peers but not to their families. Certainly, such a self-conscious community would be a valuable complement to an organized sex worker community in ensuring safe sex.

An important issue in bringing into being any of these self-aware, self-justifying and self-protecting communities would be how much outside help they would need and who would give it. Presumably the outside helpers would have to be at least sympathetic to these ways of life, and would have to find sympathetic funders. Starts have been made. A newspaper for the young in Uganda has a self-aware network of adolescent correspondents discussing frankly their sexual needs and the problems of the AIDS epidemic.

It is clear that the African AIDS epidemic is a huge tragedy that cannot be ignored. It is also clear that the present interventions, because of either their direction or scale, are not limiting the epidemic. Much in the present informational and educational programs is incompatible with the sexual cultures of their communities. Amuyunzu-Nyamongo et al. (ch. 1) concluded from their examination of the situation in Ethiopia, Uganda, Kenya and Tanzania that most of the programs are looked upon as being against sex. This is a recipe for failure. The programs also do not accept that what has to be intensified, or accommodated, is not the fear of AIDS death but the fear of death itself.

The programmatic changes cannot be carried out in a whisper. The mortality levels in Southern Africa are approaching those of total war, and need the same total reaction from every level of community. The war was won in the Australian gay community, which had lower seropositive levels than southern Africa, by ensuring 'that any involvement in gay life' was 'also an immersion in HIV/AIDS and in its key concern of developing, sustaining and living with safe sexual practice' (Dowsett, ch. 19). A heterosexual epidemic does not encounter such a compact, self-aware community, but the African epidemic has the advantage that almost the whole of society is at risk. This means that African leaders are in a position to speak out to whole nations with all the vigour and determination they can command. If the war against AIDS is to be won they must do so (*cf.* Bolme, ch. 20), and they must do so as they would in total war, and with obvious strong feelings about the value of all African lives. The society must be mobilized in advocacy, in the provision of help, in the recognition of the full value of seropositive persons, and in drawing upon all health assistance (*cf.* Höjer, ch. 5).

The focus of intervention programs must change. Nearly everyone already knows enough about AIDS, its sexual transmission and the dangers of commercial sex. What is needed is outspoken governments, more international funds, well-organized programs ensuring the use of condoms in commercial sex, more understanding and acceptance of contemporary sexual mores and the encouragement of adolescents to organize themselves. In time death will be taken more seriously and non-pathological causes of death less so, but this is a product of social change and massive increases in education.

References

- Blacker, John and Basia Zaba. 1997. HIV prevalence and lifetime risk of dying of AIDS. Pp. 45-62 in *Evidence of the Socio-demographic Impact of AIDS in Africa*, ed. K. Awusabo-Asare, J.T. Boerma and B. Zaba. Supplement 2 to *Health Transition Review* 7. Canberra: Australian National University.
- Brown, Judith E., Okako B. Ayowa and Richard C. Brown. 1993. Dry and tight: sexual practices and potential AIDS risk in Zaire. *Social Science and Medicine* 37, 8: 989-994.
- Caldwell, John C. 1967. Population change. Pp. 78-110 in *A Study of Contemporary Ghana*, vol. 2, ed. W. Birmingham, I. Neustadt and E.N. Omaboe. London: Allen and Unwin.
- Caldwell, John C. 1997. The impact of the African AIDS epidemic. Pp. 169-188 in *Evidence of the Socio-demographic Impact of AIDS in Africa*, ed. K. Awusabo-Asare, J.T. Boerma and B. Zaba. Supplement 2 to *Health Transition Review* 7. Canberra: Australian National University.
- Caldwell, John C. 1999. Basic premises for health transition in developing countries. *World Health Statistics Quarterly*, special issue, *Historical Epidemiology*. In press.
- Caldwell, John C., Pat Caldwell and I.O. Orubuloye. 1992. The family and sexual networking in sub-Saharan Africa: historical regional differences and present-day implications. *Population Studies* 46, 3: 385-410.
- Caldwell, John C., Pat Caldwell and Pat Quiggin. 1989. The social context of AIDS in sub-Saharan Africa. *Population and Development Review* 15, 2: 185-234.

- Caldwell, John C., Pat Caldwell and Pat Quiggin. 1991. The African sexual system: reply to LeBlanc *et al.* *Population and Development Review* 17, 3: 506-515.
- Caldwell, John C., I.O. Orubuloye and Pat Caldwell. 1992a. Underreaction to AIDS in sub-Saharan Africa. *Social Science and Medicine* 34, 11: 1169-1182.
- Caldwell, John C., I.O. Orubuloye and Pat Caldwell. 1992b. Fertility decline in Africa: a new type of transition? *Population and Development Review* 18, 2: 211-242.
- Caldwell, Pat and John C. Caldwell. 1987. Fertility control as innovation: a report on in-depth interviews in Ibadan, Nigeria. In *The Cultural Roots of African Fertility Regimes: Proceedings of the Ife Conference, February 25 --March 1, 1987*, ed. J.A. Abigbola and E. van de Walle. Ile-Ife: Obafemi Awolowo University, and Philadelphia: University of Pennsylvania.
- Esu-Williams, Eka. 1995. Sexually transmitted diseases and condom interventions among prostitutes and their clients in Cross River State. Pp. 223-228 in *The Third World AIDS Epidemic*, ed. I.O. Orubuloye, J.C. Caldwell, P. Caldwell and S. Jain. Supplement to *Health Transition Review* 5. Canberra: Australian National University.
- Gaisie, Kwesi, Anne R. Cross and Geoffrey Nsemukila. 1993. *Zambia Demographic and Health Survey 1992*. Lusaka: University of Zambia and Central Statistical Office, Zambia.
- Gardner, Robert, Richard D. Blackburn and Ushma D. Upadhyay. 1999. Closing the condom gap. *Population Reports* 27, 1: 1-35.
- Goody, Jack R. 1976. *Production and Reproduction: A Comparative Study of the Domestic Domain*. Cambridge: Cambridge University Press.
- Keyfitz, Nathan and Wilhelm Flieger. 1968. *World Population: An Analysis of Vital Data*. Chicago: University of Chicago Press.
- Kilian, Albert H.D., Simon Gregson, Bannet Ndyabangi *et al.* 1999. Reductions in risk behaviour provide the most consistent explanation for declining HIV-1 prevalence in Uganda. *AIDS* 13, 3: 391-398.
- Konde-Lule, Joseph K. 1995. The declining HIV seroprevalence in Uganda: what is the evidence? Pp. 27-33 in *The Third World AIDS Epidemic*, ed. I.O. Orubuloye, J.C. Caldwell, P. Caldwell and S. Jain. Supplement to *Health Transition Review* 5. Canberra: Australian National University.
- National Council for Population and Development, Kenya. 1999. *Kenya Demographic and Health Survey 1998*. Nairobi: Central Bureau of Statistics, Kenya.
- Ngallaba, Sylvester, Saidi Hussein Kapiga, Ireneus Ruyobya and J. Ties Boerma. 1993. *Tanzania Demographic and Health Survey 1991/1992*. Dar es Salaam: Bureau of Statistics, Planning Commission, Tanzania.
- Orubuloye, I.O., John C. Caldwell and Pat Caldwell. 1991. Sexual networking in the Ekiti district of Nigeria. *Studies in Family Planning* 22, 2: 61-73.
- Orubuloye, I.O., John C. Caldwell and Pat Caldwell. 1992. Diffusion and focus in sexual networking: identifying partners and partners' partners. *Studies in Family Planning* 23, 6: 343-351.
- Orubuloye, I.O., John C. Caldwell and Pat Caldwell. 1993. The role of religious leaders in changing sexual behaviour in an era of AIDS. Pp. 117-127 in *Sexual Networking and HIV/AIDS in West Africa*, ed. J.C. Caldwell, G. Santow, I.O. Orubuloye, P. Caldwell and J. Anarfi. Supplement to *Health Transition Review* 3. Canberra: Australian National University.
- Orubuloye, I.O., John C. Caldwell and Pat Caldwell. 1997. Perceived male sexual needs and male sexual behaviour in southwest Nigeria. *Social Science and Medicine* 44, 8: 1195-1207.
- Orubuloye, I.O., Pat Caldwell and John C. Caldwell. 1994. Commercial sex workers in Nigeria in the shadow of AIDS. Pp. 101-116 in *Sexual Networking and AIDS in Sub-Saharan Africa: Behavioural Research and the Social Context*, ed. I.O. Orubuloye, J.C. Caldwell, P. Caldwell and G. Santow. Canberra: Australian National University.

- Orubuloye, I.O., Pat Caldwell and John C. Caldwell. 1995. A note on suspect practices during the AIDS epidemic: vaginal drying and scarification in southwest Nigeria. Pp. 161-165 in *The Third World AIDS Epidemic*, ed. I.O. Orubuloye, J.C. Caldwell, P. Caldwell and S. Jain. Supplement to *Health Transition Review* 5. Canberra: Australian National University.
- Population Reference Bureau. 1999. *World Population Data Sheet 1999*. Washington DC.
- Sandala, Luciano, Peter Lurie, M. Rosemary Sunkutu, Edgar M. Chani, Esther S. Hudes and Norman Hearst. 1995. 'Dry sex' and HIV infection among women attending a sexually transmitted disease clinic in Lusaka, Zambia. *AIDS* 9, supp. 1: S61-S68.
- Simons, John. 1989. Cultural dimensions of the mother's contribution to child survival. Pp. 132-145 in *Selected Readings in the Cultural, Social and Behavioural Determinants of Health*, ed. J.C. Caldwell and G. Santow. Canberra: Australian National University.
- UNAIDS and WHO. 1998. *Report on the Global HIV/AIDS Epidemic, June 1998*. Geneva.
- United Nations. 1998. *World Population Prospects: The 1998 Revision*. New York.
- United Nations. 1999. *World Population 1998* (Data Sheet). New York.
- Varga, Christine A. 1997. The condom conundrum: barriers to condom use among commercial sex workers in Durban, South Africa. *African Journal of Reproductive Health* 1, 1: 74-88.