Kaijaleena Serlo

UNIVERSITY STUDENTS’ ATTITUDES TOWARDS HIV/AIDS IN FINLAND AND IN KENYA
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IN FINLAND AND IN KENYA

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Abstract

The purpose of this study is to describe and to compare the university students’ attitudes (knowledge, feelings and behaviour) towards HIV/AIDS (Human Immune Deficiency Virus/Acquired Immune Deficiency Syndrome) in Finland and in Kenya and to find explanatory factors associated with the sexual risk behaviour. For educators, managers and experts in health care and education the results will provide an opportunity to deepen their knowledge and awareness of students’ sexual behaviour. These results may also be used for planning an educational programme for youngsters and young adults in order to promote healthy sexual behaviour. This study is focused on the viewpoint of preventive health care and sexual health promotion.

The study is a comparative research with quantitative and qualitative methods. The study group consists of 525 first year students (411 Finnish and 114 Kenyan students) of Oulu University of Applied Sciences, Oulu University and the University of Helsinki in Finland and of MOI University in Kenya. The response rate was 87.5%.

The results concerning the attitudes towards HIV/AIDS of the students showed that the Finnish and Kenyan students had a good level of knowledge concerning HIV and AIDS. Most of the information had been obtained from TV, campaigns, newspapers, and information packages. The role of the health care professionals was very small in both countries.

The most negative attitudes were found towards homosexuality (25.8% of the respondents) and intravenous drugs users (59.5%). The result showed that the level of knowledge did not have an effect on the level of their beliefs and prejudices of the students.

It was common for the respondents to be single during their first study year. No influence was found between the students’ knowledge and the number of their sex partners or the frequency of the sexual activity. Almost the same number of students who reported using prevention always or almost always identified both HIV correctly (43.4%) and incorrectly (45.7%). The situation concerning AIDS was similar. The age and the importance of religion of the students had influence on the use of prevention.

Keywords: attitudes towards HIV/AIDS, feelings of HIV/AIDS, knowledge of HIV/AIDS, sexual risk behaviour
Tiivistelmä

Tutkimus on vertaileva tutkimus. Aineisto kerättiin struktuuroituja ja avoimia sisältäviä kyseistä kyselylomakkeella. Tutkimukseen vastasi yhteensä 525 ensimmäisen lukuvuoden korkeakouluopiskelijaa, 411 suomalaisista ja 114 kenialaista opiskelijaa. Vastausprosentti oli 87,5%.

Tulokset osoittivat sekä kenialaisilla että suomalaissa korkeakouluopiskelijoiden olevan hyvät tiedot HIV/AIDSista. Tärkeimpia opiskelijoiden nimeämiä tietolähteitä olivat TV, kampanjat, sanomalehdet ja informaatiopaketit. Perheen ja terveydenhuollon ohjelmistoihin liittynä oli vähän molemmissa maissa.


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1 Introduction

The purpose of this study is to describe and to compare university students’ attitudes (knowledge, feelings and behaviour) towards HIV/AIDS in Finland and in Kenya and to find explanatory factors associated with sexual risk behaviour. For educators and managers in health care and in health education the results will provide an opportunity to deepen their knowledge and awareness of students’ sexual behaviour. These results may also be used for planning an educational programme for youngsters and young adults in order to promote healthy sexual behaviour.

AIDS (Acquired Immune Deficiency Syndrome) has been known now as a disease for more than twenty years. AIDS is a syndrome caused by the HIV-virus (Human Immune Deficiency Virus).

The estimated number of people with HIV/AIDS, i.e. the HIV epidemic varies globally. UNAIDS (Joint United Nations Programme of HIV/AIDS) estimated the worldwide number of persons living with HIV to be 33.2 million in 2007. The majority of these infections took place in an area of the African continent situated south of the Sahara (22.5 million). More than thirty million of the infected were adults. Half of them were women and 2.5 million were children under the age of 15. In 2007 the number of newly HIV infected individuals was 2.5 million, almost 14,000 people a day, half of whom were aged 15–24 (UNAIDS, 2007).

The number of HIV positives has decreased in Africa because of successful promotion programmes especially in Kenya and Zimbabwe. For instance in 2003 in Kenya the prevalence of HIV (the percentage of the adult population with HIV) was 6.7%. It has decreased to the level of 5.7% in 2004 (National AIDS Control Council 2005).

At present, Eastern Europe and the Russian Federation continue to represent the fastest growing epidemic in the world. In 2006 there were all together 369,187 registered HIV cases in the Russian Federation (with a population of 142,536,992). Estonia has the second highest estimated prevalence of HIV in Europe, over 1% of the adult population (WHO/Europe 2008). It was estimated that in 2007 in Eastern Europe and Central Asia women accounted for 26% of adults with HIV compared to 23% in 2001 (UNAIDS 2007).

The sexual route is the most common way to become infected in an unprotected sexual relationship with an HIV positive individual. Sexual transmission can occur through contact with the secretion of an HIV positive
partner’s rectal, genital or oral membranes. Although men have more HIV infections than women in Europe (UNAIDS 2007), poverty and changes in the society render women particularly liable to the infection. Sex tourism has added to the spread of the infections which is increasing in concurrence with other sex diseases. The number of women living with HIV is slowly growing also as it is transmitted to the female partners of men who are likely to have been infected through injected drug use or during unprotected sex or sex with other men. According to Johnson & Laga (1988) the transmission from women to men is less effective than from men to women. Women also have a higher biological susceptibility to HIV infection. The structure of women’s sexual organs exposes them more readily than men to HIV and other sexually transmitted diseases (Holmström 2002, Aitken 2005).

A particularly vulnerable group is the young who start their sexual activity earlier than average. For them the information package or knowledge concerning HIV/AIDS comes too late if it is outdated and based on the needs of the majority of youngsters. Young girls and women are exposed to HIV as a result of cultural differences. There are several cultures where young girls have sex with older men. These girls may also have experienced violence, been sexually abused or forced into commercial sex work. Young street children, refugees and immigrants are often left without any information on HIV or other sexual diseases (Holmström 2002).

Välimäki et al. (1998) have made a literature based review of the research to study the attitudes of professionals, students and the general public towards HIV/AIDS and people with HIV/AIDS. The attitudes appeared to be closely connected to the level of knowledge, gender and culture. It seemed that the attitudes had been highly resistant to change. More consideration and further research as well as effective dissemination are needed to find appropriate ways to educate the general public, students and health care professionals. Karama et al. (2005) examined the knowledge, attitudes and practice towards HIV/AIDS in a rural Kenyan community with the population of 1500 people. Half of the respondents knew a person with HIV. About 80% gave death or fear as words representing their image of AIDS.

Students nowadays travel more widely than earlier. Many of them have been abroad as exchange students. Finland belongs to the European Union, which offers a possibility for free labour mobility in Europe. The risk of becoming infected has increased recently. For instance, our neighbouring country, Estonia, has the second highest estimated prevalence of HIV in Europe with the number of
HIV patients being over 1% of the adult population (WHO/Europe 2008). It was estimated that in 2007 in Eastern Europe and Central Asia women accounted for 26% of adults with HIV compared to 23% in 2001 (UNAIDS 2007).

The theoretical framework of this study consists of previous studies involving attitudes of young people, students and staff members of health care towards HIV/AIDS. This study is focused on the viewpoint of preventive health care and sexual health promotion. Public health nurses and registered nurses at the school health care, FSHS /students’ health services, health care centres and hospitals have an important role in interviewing, counselling and advising youngsters and young adults. It is especially personal counselling in HIV/AIDS that is needed in situations where a person is seeking contraceptive services or is being treated for a sexually transmitted disease.

The results of this study can be used for planning an educational programme for youngsters and young adults at comprehensive schools, vocational institutions and higher education institutions (university and university of applied sciences). The Action programme 2007–2011 of the Finnish Ministry of Social Affairs and Health calls for specific attention to be paid to young people. The key target groups are the teachers in social welfare and health care, health education teachers in the upper secondary schools and the vocational school at different levels. It also seems necessary to organise further education courses for the educators.

The reason for concentrating on the attitudes of first year university students depends on their expected knowledge of HIV/AIDS gained during their previous studies. The age of the university students is 18 and up. They probably already have had one or more sexual partners or confirmed their marital status. In the future they may be parents advising their children or they may have contact with HIV infected and AIDS patients in their work. The universities of Helsinki and Oulu were chosen in order to see if there is any difference in the attitudes of students in southern and northern Finland.

The study is a comparative research using quantitative and qualitative methods. In this study both the quantitative and the qualitative data sets are used as basis of comparison. The comparative research process is similar to other kinds of research processes. Similarly to other research processes this also has started with the identification of the problems and the theory. It follows the course of research described by Salminen (1999) moving on to data collection, description, classification and pre-analysis, conclusions, report and dissemination of the results The aim of this study is to compare the differences related to university
students’ attitudes (knowledge, feelings and behaviour) towards HIV and AIDS in Finland and in Kenya.

The literature review presents an overview of the relevant literature concerning university students’ attitudes towards HIV and AIDS using the Medline and Cinahl databases. The search was concentrating on the papers published in the specialist journals from 2000 onwards.
2 Literature review

2.1 HIV/AIDS

2.1.1 Description of HIV infection and AIDS

The first HIV infections and AIDS patients were found in the beginning of the 1980s in Finland, at the same time as all over in the European countries. The HIV infection has originated from Africa. HIV expanded to an epidemic because of a combination of different simultaneous factors: the liberation of sex behaviour, the development of prevention pills, mass tourism, increasing common mobility, the use of intravenous drugs and the American lower cultures of homosexual men (Löytönen 1993).

HIV is able to modify its structure, which is one of the reasons that make it so difficult to develop a suitable vaccination against it. HIV is a member of the genus Lentivirus, part of the family of Retroviridae. Two species of HIV infect the humans: HIV-1 and HIV-2. HIV-2 is less transmittable than HIV-1 and is largely confined to West-Africa. HIV-1 is more virulent and easily transmitted. HIV-1 is the cause of the majority of HIV infections globally (Leinikki 1993).

Infection with HIV-1 is associated with CD+4T cell count and an increase in viral load. The stage of infection can be determined by measuring the patient’s CD+4T cell count and the level of HIV in blood (Aitken 2005, UNAIDS 2007). Women between the ages 15–19 are two to four times more likely than males to become infected with HIV through unprotected sex and mostly in heterosexual relationships. Many women do not know how their partners have been infected. Montgomery et al. (2003) reported of men with bisexual identity and heterosexual behaviour. Only a few of the HIV infected men who had sex with men identified themselves as heterosexuals. Their female partners may not know of their bisexual behaviour. As the HIV infection is asymptomatic for a long period of time the people living with it may not be aware of being infected (Holmström 2002, UNAIDS 2007).

There is currently no vaccine or cure for HIV or AIDS (UNAIDS 2002, Ristola & Sutinen 2002).

At the end of the 1980s zidovudine was the first medicine to have an effect on HIV. The current treatment for HIV consists of highly active antiretroviral therapy (HAART). HAART is a combination of at least three HIV drugs. In countries
where the HAART treatment has been widely introduced, AIDS mortality has fallen by 50–75% since 1995. HIV medication means that the patients stay in a better condition and in-patient care is not needed and the progression from HIV to AIDS takes longer. The results of HAART are due to medication intolerance and side effects. HAART medication is expensive and available only in the developed industrial countries (Ristola & Sutinen 2002).

Some HIV/AIDS patients remain free of serious symptoms for a long time while some of them suffer frequent complications and symptoms throughout their infection. Palliative care for HIV/AIDS is a balance between acute treatment and attending to the control of chronic symptoms and conditions – unlike that for other diseases. Most people with HIV/AIDS suffer from many symptoms including pain. The symptoms can occur at the same time and lead to other symptoms such as anxiety and depression. HIV/AIDS patients should be helped to understand the limits of the treatments. The most common symptoms are: pain, tiredness, anxiety, sore mouth, sadness, weight loss, nausea, fever, coughs and depression (UNAIDS 2000). The study of Selvyn et al. (2003) showed that a need for palliative care services for HIV/AIDS patients should be increased because AIDS evolves into a more chronic disease. In the study of Karus et al. (2005) pain, lack of energy and worrying were reported by a majority of the patients. On average the patients reported 10.9 to 12.7 symptoms. Results showed that despite the availability of more efficacious treatments, many HIV/AIDS patients experienced that their symptoms not being treated.

In the developing countries HIV/AIDS care includes themes of orphans and vulnerable children’s medical treatment, prevention, gender and male involvement. There are also other, equally important topics such as male circumcision, people living with HIV, food and nutrition, socioeconomics and politics.

Daily multivitamin supplements were found to reduce the progression of the HIV disease among women thus providing an important low-cost intervention that could be provided to adults at early stages of the HIV disease to prolong the time before antiretroviral therapy can be recommended. Han (2007) reported that Traditional Chinese Medicine remedies could definitely improve the symptoms and signs of AIDS or ARC, enhance the immune function, decrease the possibility of contracting opportunistic infections, improve the quality of life, and prolong the survival period, with no apparent toxic and side effects (Han 2007).
Herbalists in Kenya prepared Mulele and Mwafujo to promote the appetite of the patient and to retain weight and bodily strength. Mulele is a mixture of nuts and flowers and Mwafujo is made out of a bark of a special tree (Khagula 2003).

### 2.1.2 Transmission of HIV/AIDS

HIV has been analysed in the following human tissues and secretions: blood, semen, cervix – and vagina secretions, saliva, tear, urine, breast milk, spinal cord fluid, brain tissue and lung tissue. Infection with HIV-1 is associated with CD+4T cell count and an increase in viral load. The stage of infection can be determined by measuring the patient’s C+4T cell count and the level of HIV in the blood (Aitken 2005, UNAIDS 2007).

The sexual route is the most common way of becoming infected in an unprotected sexual relationship with an HIV positive individual. Sexual transmission occurs in contact with the secretion of an HIV positive partner’s rectal, genital or oral membranes. Unprotected receptive sexual acts are riskier than unprotected insertive sexual acts. Transmission through unprotected anal intercourse is more likely than through unprotected vaginal intercourse or oral sex. In the study of Sanches et al. (2006) 14% of men who have sex with men and had anal unprotected intercourse had also at least one female sex partner even though they were committed to their male partner.

Transmission from women to men is less effective than from men to women. Women also have a higher biological susceptibility to HIV infection. The structure of women’s sexual organs exposes them more readily than men to HIV and other sexually transmitted diseases. Poverty and changes in the society make women particularly liable to the infection. Sex tourism has increased the spread of the infection, which is increasing in concurrence with other sexually transmitted diseases (Icovics 1998, Holmström 2002, Aitken 2005). According to Johnson & Laga (1988) a major form of transmitting HIV is through heterosexual transmissions in Sub-Sahara. The critical factors are the number of partners, sex prostitutes, sex with infected partners and sexual diseases.

In the developing countries the spread of the heterosexual HIV is heterogeneous. Factors that explain the wide diversity of the prevalence of HIV in different countries may be underdetermined. International aid organizations are focusing their activities mainly on women rather than on men. In the literature review of O’Farrell (2001) the results showed that the ratio of female to male HIV transmission in the developing countries compared to that in the developed world.
was 341:1. For male to female transmission the rate was 2.9:1. Enhanced female to male HIV transmission in male core groups is a critical point among the heterosexuals. In addition there is a need for an increased emphasis on HIV prevention activities in men to decrease their susceptibility in the developing countries.

A particularly vulnerable group is the young who start their sexual activity earlier than average. For them the information package or knowledge concerning HIV/AIDS comes too late if it is outdated and based on the needs of the majority of the youngsters. Young girls and women are exposed to HIV by cultural differences. There are several cultures where young girls have sex with older men. The girls may also have experienced violence, been sexually abused or forced into commercial sex work. Young street children, refugees and immigrants are often left without any information on HIV or other sexual diseases (Holmström 2002).

Even if the transmission of HIV through casual contact with saliva has not been shown, an oral exposure to HIV–infected semen, blood and breast milk can lead to infection. Unprotected urogenital contact, receptive oral intercourse in particular, is associated with a greater risk of HIV transmission than previously thought. Oral trauma, sores, inflammation, allergy, allergic laryngitis, bleeding disorder and tooth abscess are factors that are likely to be associated with HIV transmission (Valle 1993, Robinson & Evans 1999, Younai 2001, Campo et al. 2006).

The transmission route of blood or blood products may account for infections in intravenous drug users. It is possible to be infected also by subcutaneous and intramuscular injections. European directives on blood donor services require blood donor centres to select the donors very carefully. For instance, men who have sex with men are not allowed to act as a donor. The policy is the same in the United States, Canada and Great Britain. HIV can also be spread through the sharing of needles or by HIV contaminated equipment (razor blades, tattooing instruments, circumcision instruments). Health care professionals are at risk of being infected through needle stick injuries with HIV contaminated needles. There is also a risk of HIV transmission for the personnel and patients during medical procedures in cases where the patient is HIV positive (Ristola & Sutinen 2002). According to Donegan (1990) the cumulative risk for developing AIDS in 38 months after blood transmission was 13%. In the study of Wang et al. (2003) the result showed that structured training in the prevention of occupational exposure improved the awareness and knowledge and behaviour as well as
reduced the number of needle stick/ sharp injuries among Chinese nursing students, compared with students who did not receive any training.

The majority of mother to child transmissions (50–80%) can occur in utero during the pregnancy or intrapartum at childbirth. Since 1998 pregnant women in Finland have been given the possibility to get tested in a local health care centre. Breast feeding has been regarded as the most important cause of post-natal infections. The risk varies between 14–29%. The risk of transmission by breast feeding is highest during the first six weeks after the birth (Holmström & Leinikki 1997, Vuorenkoski et al. 2002). The study of Becquet. & Leroy (2007) showed that breastfeeding which is wide spread and prolonged in Africa causes many HIV infections and thus reduces the efficacy of postpartum interventions.

The study of Gottlieb et al. (2004) investigated whether knowledge of HIV seropositivity influenced infant feeding behaviour in the case of 116 pregnant women in Zimbabwe. It was found that HIV-positive women who did not know about their HIV status (17 women) breastfed their infants less, introduced supplementary food sooner and planned to wean their babies earlier than other women. In that study the HIV-positive women (37/97) more frequently reported a prior history of infant deaths and AIDS-related symptoms compared to HIV-negative women. The conclusion was that the HIV-positive women who did not know of their status made incorrect decisions concerning the infant feeding. These women may have suspected themselves to be HIV-positive and consequently underfed their babies. These women were also more symptomatic and less likely to breastfeed. In addition decreased eating may have increased the risk of malnutrition. The knowledge of HIV status influenced the infant feeding and established a need to address infant feeding practices of pregnant women in Zimbabwe.

The study of Chopra & Rollins (2008) assessed the infant feeding component of the prevention of mother to child HIV transmission programmes in Botswana, Malawi and Uganda. The result was that most of the health workers (70%) were unable to estimate correctly the transmission risks of breastfeeding. National HIV managers stated that they were unsure about infant feeding policy in the context of HIV. There was a belief that an HIV mother who breastfeeds her child will always infect the child and intentional avoidance of breastfeeding by the mother indicates that she is HIV positive.
The infection with HIV-1 is associated with the progress of CD+4T cell count and an increase of the viral load. The stage of an infection can be described by measuring the patient’s CD+4 cell count and the level of HIV in the blood. Usually two to four weeks after the exposure most of the individuals have an influenza or mononucleosis type of sickness with symptoms such as fever, sore throat, pain in the muscles, laryngitis, headache, malaise, nausea and vomiting, night sweats or fatigue. The symptoms of the stage of Acute HIV infection can persist for some days or some weeks. The symptoms are non-specific and they may pass unnoticed (UNAIDS 2007).

Some of the infected individuals may not get any symptoms at all. After the stage of Acute HIV infection a period will follow which is a stage called Clinical latent HIV infection. The latent stage may take from some months to several years. During that time the individuals will have a normal physical ability to act and work. Yet, an HIV positive person is a source of transmission even during the latent phase with no symptoms (Korte et al. 1993, Holmström & Leinikki 1997).

LAS (Lymphadenopathy syndrome) is a stage where little by little the symptoms appear indicating that the virus is active in the lymphoid organs. The stage of LAS may take several years. When CD4+T cells are below the critical level and the immunodeficiency of the HIV infected person is at a low level, the first symptoms include unexplained weight loss, oral ulcerations, respiratory infections and rash. Here the infection has progressed to the stage of ARC (Aids related complex). The HIV infection starts to affect the ability to act and work. The resistance against common diseases is lost and the common opportunist infections and tumours are included in the stage of AIDS. When the level of CD4+T cells decreases there is a risk of becoming infected by some of the opportunist infections. Pneumocystis carinii – pneumonia is the most common opportunist infection. Some of the infected individuals will have difficult tumours. The most common one is Kaposi’s sarcoma (Korte et al. 1993, Oksa 2007)

The route of transmission had Psychological and sociological effects. The psychological and sociological effects of HIV are also remarkable from the point of view of the individual and the society, as well as from ethical and political aspects. Socially HIV is associated with images and feelings of guilt, sexuality and death. The society associates homosexuals, bisexuals, users of intravenous drugs, prostitutes or often simply foreigners, deviant or otherwise odd people with the discussion of taboos. Originally, AIDS was associated with the taboos of death
and sexuality as a sexually transmitted disease. Sexuality in itself is combined with shame and guilt, death and fear. Hence AIDS has to be a punishment of God to the patient for his/her sexual misdemeanour, because God is nature, “the normal order of life” (Lindquist 2002).

Due to incorrect understanding and inadequate knowledge, people have thought that homosexuality or the use of intravenous drugs may be the reason for AIDS. There are two possible explanations, AIDS as an illness is a punishment for acts that are regarded as wrong, sins and unnatural. It may also be thought that homosexuals and drug users are people who are dangerous to others. If these people are foreigners, perhaps also of a different race and religion, the image of an enemy grows stronger. A taboo is used for generalisation, isolation, scaremongering and controlling. Psychologically taboos act as a channel for many fears and feelings of guilt other than those which they are concretely concerned with (Lindquist 2002).

Sidat et al. (2006) studied at the University of Melbourne whether the sexual behaviour of HIV-negative or untested men who have sex with men was related to their perceptions of what it is like to live with HIV/AIDS. The results showed that only a minority of men who had sex with men and were engaging in unprotected anal intercourse were optimistic about antiretroviral therapy. On the contrary, they were pessimistic about life with HIV/AIDS despite their risk-taking sexual behaviour.

People with HIV and AIDS are often reluctant to be open about their HIV/AIDS status, thus increasing their feeling of isolation. In communities where HIV is less common people with HIV often come from minority groups, such as drug users, men who have sex with men or sex workers. They may have less supportive networks and face added discrimination if they are suspected of being HIV positive. Many patients have to live in discrimination even in high-prevalence countries where HIV affects nearly every member of the population (UNAIDS 2000).
2.1.3 Prevention of HIV/AIDS and risky health behaviour among young adults

Prevention of HIV and AIDS

The goal of preventing HIV/AIDS is to help an individual to take responsibility for the well-being and health of their own as well as that of their partners. For a successful prevention programme political will and commitment is needed. The UN Population Fund, UNFPA, has listed sixteen ways of preventing HIV/AIDS (Kiviluoto 2002). The factors have also been considered important for the prevention by other studies.

The young everywhere need information as well as open and comprehensive, non-moralising sex education. The provision of sexual education should also support the self-esteem and life skills of the young. The media and the way the sexually transmitted diseases are informed of and dealt with in the media have an influence on the attitudes and the common reaction of the young regarding HIV and HIV-positives (Holmström 2002).

The prevention of infections among pregnant women and the prevention of transmission of actual infection to foetus and neonates are important both in the industrial and in the developing countries. Besides drug therapy, mother-to-child transmissions have been prevented in the rich industrial countries by means of section births and by refrainning from breast-feeding. The risk of breast-feeding varies from 14% to 29% depending on how much virus the mother has in her blood (Vuorenkoski et al. 2002, Lounamo 2007).

The availability of male and female condoms and other preventive methods have to be increased. Voluntary testing, availability of condoms (male and female), counselling and good health care services are the basics of HIV prevention. According to Brown and Wimberly (2005) female condoms are regarded as a solution in promoting safe sex. Male circumcision is recommended as a prevention method in researches in Uganda, Kenya and Nigeria. The effect of male and female circumcision (genital cutting) in virgins as prevention against HIV was studied by Brewer et al. in Kenya. The conclusion was that in eastern and southern Africa HIV transmission may occur through circumcision related blood exposure. Bailey et al. (2007) regarded male circumcision to be a recommendable preventive method carried out in safe services and integrated with other preventive methods (Gray et al. 2007, Vardi et al. 2007).
Change in the sexual behaviour is focused on the counselling on prevention at the individual level. Routes of transmission and methods of prevention are also stressed. Prostitution is one of the most important sources of infection in many countries. The amount of sexually transmitted HIV infections can be lowered by decreasing the number of sex partners, avoiding sexual contacts with individuals who have several partners and also by having safer sex. Prevention and treatment of other sexually transmitted diseases is important since the diseases increase the risk of becoming infected. An important factor in the prevention of HIV is to increase the opportunities of women and children to refuse to engage in risky sex and other demands for contraception. According to Fako (2006) the importance of sexual activity, the number of partners, happiness with life in general, level of attachment to father and physical fights with other children were identified as the social and psychological predictors of willingness to be tested for HIV. The study shows the importance of continued education in voluntary counselling and testing among active young people, especially those from poorer backgrounds in the rural areas (Kiviluoto 2002, Roark et al. 2005).

There are several studies which showed the importance of prevention programmes for men who have sex with men (MSM). Morea-Gruet et al. (2006) investigated trends in reported HIV-related behaviours among men having sex with men in Switzerland. The result showed the need to target the continuous prevention programme for men who have sex with men. The study of Poon et al. (2005) concerned Asian men who used gay internet chatrooms in Toronto to find sex partners. The conclusion of the study was that it is important for service providers to continually provide accurate information about sexually transmitted diseases and HIV/AIDS. Sampalo et al. reported in their study (2002) that even though the number of MSM with AIDS is increasing in Brazil, relatively few prevention programmes have been designed for them and more such programmes are urgently needed. According to the study of Choi et al. China is facing an emerging HIV epidemic among men who have sex with men. The HIV prevention services which are available in Beijing include mass media education, hotline information and counselling services, venue-based outreach, hospital-based services, and internet sites. Few of them are targeted at the MSM population. The conclusion was that many MSM are at high risk for HIV but received inadequate services. More effective and sustainable programmes must be developed and implemented to prevent the further spread of HIV.

Young people are remarkably vulnerable because the young often perceive the risk of acquiring HIV. Particularly vulnerable are the young girls who have
started their sexual activity earlier than average and are still unable to protect themselves against sexually transmitted diseases. The information concerning the prevention of HIV should include also other vulnerable groups such as prostitutes, users of intravenous drugs and men who have sex with men. In the prevention there is a need to take into account the sexual health of people in exceptional and refugee situations. There is an increasing awareness of how gender-linked discrimination and violence increase the risk of HIV/AIDS (Kiviluoto 2002, Roark et al. 2005).

The list of the UNFPA also includes suggestions as to increasing co-operation between the sources of funding, governments, organisations and other bodies for the political support and commitment as well as the training of the health care personnel. The co-operation is also important for the understanding of the extent of the epidemic, the influence of poverty and social circumstances as well as effects on sustainable development (Kiviluoto 2002).

Education is highest in the developed countries. In these countries it is possible to influence the sexual behaviour of people with preventive procedures. The main resources have been focused on information on HIV-related prevention. The prevention, treatment and care were based on a holistic view. Among health care professionals there is an urgently increasing need to educate health care workers for prevention and the treatment and care of HIV/AIDS patients (Setswe et al. 2007, Uebel et al. 2007).

The United Nations is actively supporting the availability of HIV drugs in the developing countries. It is also important to offer HIV/AIDS patients a possibility for psychiatric consultation and/or mental care. Several disorders are related to HIV/AIDS: mood disorders, anxiety disorders, substance-related disorders, psychotic disorders, insomnia and sleep disorders or delirium, dementia and pain syndromes. (Ruiz et al. 2000, Ristola & Sutinen 2002, Barnighausen et al. 2007, Freeman et al. 2007).

**National programme for prevention**

The Ministry of Social Affairs and Health (2007) in Finland has compiled the first national action programme for the promotion of sexual and reproductive health. Sexual health counselling is integrated into the basic services as well as preventive and medical treatment. The programme points out the importance of screening and counselling the young, particularly during the first visit of counselling, concerning prevention of pregnancy. HIV testing is provided free of
charge in all municipal health care centres and it is available also in private health care services. The screening of Chlamydia trachomatis (all under 25 years of age) and the human papillomavirus vaccination is expected to work together with the sexual education to decrease the amount of sexually transmitted diseases. HIV/AIDS prevention is integrated into school health and sexual health education. Finland has supported nationally the development of the HIV vaccine by providing both investment and project support. Good results have also been found in Finnish research concerning the immunogenicity of an inactivated mycobacterial vaccine for the prevention of HIV-associated tuberculosis (Vuola et al. 2003, Lehtinen et al. 2007, KTL 2008).

National Strategic Plan for prevention

The core principle in the Kenya National HIV/AIDS Strategic Plan for the years 2005/06–2009/10 are the following: multi-sectorial approach, targeting vulnerable groups, focus on gender and the young, evidence based interventions, empowered, participatory approach and support for regional and international initiatives. Universities have an HIV/AIDS policy of their own. In response to the national requirement to establish an educational Awareness Control Unit (ACU) the University of MOI in Eldoret, Kenya established the MUHAACU (Moi University HIV/AIDS Awareness Control Unit) in 2000. The institution has mandated the unit to provide awareness campaigns, Voluntary Counselling and Testing (VCT) services and treatment of HIV/AIDS illnesses (Moi University HIV/AIDS Policy 2006).

Prevention programme and research

The research in Kenya is mainly based on a holistic approach of HIV/AIDS prevention, treatment and care. The research is concentrated on developing counselling and voluntary testing (Irungu et al. 2007) in order to find new preventive methods such as male or female circumcision (Rennie et al. 2006, Bailey et al. 2007) or the connection of HIV infection and human papillomavirus infection (Ng’ayo et al. 2008) and to reduce the importance of poverty in receiving treatment against HIV/AIDS (Tumbo-Oeri 2000).

Male circumcision provided a degree of protection against acquiring HIV infection, equivalent to what a vaccine of high efficacy would have achieved.
Male circumcision may provide an important way of reducing the spread of HIV infection in the south of Africa (Auvert et al. 2005).

Female circumcision is against the Human Rights of the United Nations. In Kenya, criminal procedure has been initiated against 38–50 percent of women on the basis of the criminal code. There is no special law to deny female circumcisions in Finland but all the forms of the procedure are considered as penal offences in the Finnish criminal code (Tiilikainen 2004).

**Risky health behaviour among young adults**

*Health behaviour.* Health behaviour and the efficacy of behavioural theories in health promotion has been examined in several studies. A literature review of eleven health behaviour theories was examined by Munro et al. (2007). The perspectives of the assessed theories were biomedical, behavioural (learning), communication, cognitive and health belief perspectives. The study included also the theoretical perspectives of protection-motivation and social-cognitive theories, planned behaviour and reasoned action, information-motivation-behavioural skills, self-regulation and stage perspectives.

These theories were assessed in order to clarify the evidence for their effectiveness in predicting behaviour change and examined the implications for developing strategies to improve tuberculosis and HIV/AIDS medication adherence. The conclusion was that there is no simple solution to the problem of adherence, or to the area of behavioural change. An explicit theoretical basis is not always necessary for a successful intervention. Further research is needed to assess whether theory based interventions in health care are more effective than those without an explicit theoretical background.

The health behaviour of school children is followed in a WHO cross-national survey. The survey was started by researchers from three European countries. At present more than ten countries within the European region of WHO are accepted as members of the project. Health related habits, lifestyle and psychosocial aspects of health are chosen as criterion variables of the study. National cross-sectional surveys are carried out regularly in an increasing number of countries. Data are collected anonymously at school, covering three age groups (Health Promotion International 1986, Kannas et al. 2006).

The role of motivation for health behaviours was also examined in the nursing research. In the literature review of Carter and Kulbok (2002) the studies suggest that either motivation is not being effectively measured because of a lack
of conceptual clarity or motivation is not an essential determinant of health behaviours. Further research is needed to understand the role of motivation of health behaviours.

The evidence-based approach to health promotion is growing in many public sectors. Nutrition, weight management, sleeping, sports, smoking, use of alcohol and drugs are the main topics in the health promotion programmes (KTL 2008).

*Health risks.* University students’ health related risks were studied by Kunttu (2004). Health risks result from different but closely interacting factors: 1 – unfavourable psychological developmental processes in the current phase of life, 2 – problems caused by changes in life, 3 – inadequate social support both in private life and in studies, 4 – insufficient diagnosing and treatment of health complaints and 5 – life-style related risks. A student may have many symptoms although she/he is physically well. The causes include stress related to studies and the new phase of life, and mental and physical diseases. Physical activity, use of alcohol, stress management and social participation are often health related.

According to Kunttu and Virtala (2005) students’ culture to spend free-time may be very demanding: hurrying, waking and use of alcohol and other drugs. On the other hand many of them are lonely, isolated and very much keen only on studying.

Erola (2004) studied the living conditions of university students. The students reported that about 40% of them needed help in stress management and 37% informed that they needed advice about problems regarding studies and study technique.

*Risky health behaviour.* The use of tobacco products includes the use of cigarettes, cigars, snuffing, and pipes. According to the Finnish statistics the first experiences of smoking take place between 12 and 14 years of age. By the age of fourteen 41% of the boys and 44% of the girls have tried smoking. In 2005 more than 2% (i.e. 2.2%) of the 18 year old youngsters were snuffing daily. By the Finnish law it is forbidden to sell tobacco products to youngsters under the age of 18 (KTL 2007, Rimpelä *et al.* 2005, Pennanen *et al.* 2006)

Haukkala *et al.* (2006) examined the progression of oral moist snuff use among the adolescents and its relation to smoking behaviour and nicotine addiction. The study was carried out in 27 schools in Helsinki, Finland, starting with the seventh grade to the ninth grade. The prevalence of snuff experiments rose among boys from 7% in the seventh grade to 43% three years later in the ninth grade. Using snuff among girls rose from 2% to 13%. Combined use of snuffing and smoking was common. By the end of the follow-up only 10% of the
weekly smokers had not tried the oral snuff. Nicotine dependence scores increased linearly with snuff use among the weekly smokers. Despite the European Union sales ban on oral snuff products since 1995, snuff use is common among boys in Finland.

Table 1. The frequency of smoking and drinking among young people in Finland.

<table>
<thead>
<tr>
<th>Age</th>
<th>Smoking male</th>
<th>Smoking female</th>
<th>Use of alcohol once a week (%) male</th>
<th>Use of alcohol once a week (%) female</th>
<th>Use of alcohol once a month (%) male</th>
<th>Use of alcohol once a month (%) female</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>41</td>
<td>44</td>
<td>4</td>
<td>6</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>16</td>
<td>67</td>
<td>67</td>
<td>NA</td>
<td>NA</td>
<td>51</td>
<td>49</td>
</tr>
<tr>
<td>18</td>
<td>34</td>
<td>33</td>
<td>44</td>
<td>35</td>
<td>78</td>
<td>79</td>
</tr>
</tbody>
</table>

The use of tobacco in Kenya was examined by Astrom and Ogwell in 2004. Forty seven per cent of the primary school children had received risk information from the media and 88% had been exposed to the tobacco advertisement. Non-smokers had more favourable attitudes towards control policies and were less frequently exposed to pro- and anti-tobacco messages. Adolescents received risk information mainly from the broadcast media. Advertising is an important risk factor of the smoking status in this developing country of Kenya.

Smoking is considered to be the most addictive substance of all and a stepping stone to other substances, including narcotics. It almost always promotes other drug use. According to a five year long follow-up study of Salonen (2003) smoking seemed to decrease and cannabis seemed to be an increasing problem among both the first-year and fifth-year university students. More than half of the heavy smokers (56.1%) reported some cannabis use in their fifth study year. Cannabis was found to be the most common initial substance in the progression of narcotics abuse. The results also showed a strong relationship between smoking and the use of alcohol. Almost one third (31%) of the heavy smoking male students and 17% of the heavy smoking female students were also heavy drinkers.

The number of adolescents who abstain from alcohol has been higher after the years 1997–1999 in all age groups. In 2005 58% of the boys and 46% of the girls at the age of 14 reported no use of alcohol at all. At the age of 18 every fifth of the adolescents reported to be an absolutist. More than forty per cent (41%) of the 18-year-old boys were drinking until they were really drunk. The corresponding number for girls was 32% (Rimpelä et al. 2005, Luopa et al. 2006, KTL 2007).
In the study of Suvivuo et al. (2008) the purpose was to examine in detail what kind of a role alcohol has among a selected group of sexually active teenage girls, with a special emphasis on their locus of control and risky sexual behaviour. The girls’ ability to control sexually motivated situations was unstable and considerably affected by the use of alcohol. The results showed that the use of alcohol should be taken into account in sexual education and vice versa. Sexual issues should be brought up in education concerning the use of substance.

Shillington and Clapp (2006) studied heavy alcohol use compared to alcohol and marijuana use in south-western USA. The study examined the risk for alcohol and other drug problems among college students by telephone interviews. Alcohol and marijuana users (dual users) were younger and reported a higher mean number of drinks per occasion. College students who used alcohol and marijuana were at a higher risk for problems than the students who used only alcohol, despite some also being heavy drinkers.

The experimenting and the use of drugs increased in Finland in the 1990s. More than twenty per cent (22%) of the population tried cannabis between the age of 15 and 34 and 3.5% had amphetamine, 3% ecstasy and 2% had tried cocaine in 2004. Most of the drug users are male (Huimetilanne Suomessa 2006). Regarding the survey 32% of men at the age of 25–34 have tried cannabis once and 11% during the past year. Regionally there were more drug users in the big cities in southern Finland (Hakkarainen & Metso 2007). According to Obstbaum (2006) marijuana and hashish were more often used by the Finnish than the Swedish speaking students.

When the use of cannabis among Finnish university students is compared to that of the other countries, the situation in Finland seems still quite good even if the figures are growing. The findings in the study of Salonen (2003) suggested that the drug related intervention programmes must be targeting not only adolescents but also young adults up to the age of 30.

Mwai (2004) has examined the drug use/abuse in Kenya. The results of the case study showed that the behavioural chance is possible if the drug use /abuse is accepted as a problem. People in the community should care for the victims and stop condemning them. Education concerning how to avoid risky behaviour is needed and the families of the drug users should be supported through the behaviour change process. Traditional ceremonies should be avoided because they are likely to entice non-users to drug use. Religion had organised campaigns against brewing, manufacturing, selling, trafficking and consumption of the drugs.
The drug Catha edulis, called also as khat and in Kenya as gat, miraa, murundi, veve or gomba, abounds with paradoxes as reported by Beckerleg and Sheekh in 2005. It is also associated with Somalis, both at home and in the diaspora. The consumption of twigs and leaves of miraa is widely assumed to be a part of culture and tradition in Somali.

Heroin use in Costal Kenya should be recognised as a part of the process of economics and cultural globalisation in the research of Beckerieg et al. in 2005. In Kenya the heroin use is spreading to smaller towns and even into remote villages. The easy availability of needles and syringes through needle exchange has done a lot to reduce the sharing of equipment. Heroin users at the Kenyan Coast, similarly to elsewhere within the region, suffer from lack of information about the dangers of injections, the risk of sharing needles and syringes and unprotected sex. The Costal Kenyan heroin injectors share injecting equipment and have sex with each other as well with non-users. According to a study in Nairobi, Kenya, among 336 heroin users 44.9% were injectors.

2.1.4 HIV/AIDS statistics in Finland and in Kenya

The risk of acquiring a sexually transmitted infection in Finland has increased. Hence the number of HIV positives is also growing continuously. In Finland the first HIV positives and AIDS patients were found in the beginning of the 1980s, at the same time as in other European countries. At that time the most common way to become infected was through homosexual risk behaviour. In Finland the number of HIV infections has increased more slowly than was estimated from the beginning of the 1990s until the year 1999. In the past four years 126–193 new cases have been registered each year. The beginning of this change in numbers was discovered in August 1998 in our capital, Helsinki. This was due to unclean drug needles of the iv-drug users (KTL 2007).

We have had 2383 HIV infections (1764 men, 619 women) and 515 AIDS patients in Finland by the end of October 2008 (ref. KTL 19.10.2008). The estimated number of people living with HIV is four times higher than that reported in the statistics in Finland. Almost three thirds of the HIV positives (74%) are men although the number of infections by heterosexual relationships has increased. Only a few (1.0%) of the infected persons have been transmitted by blood or blood products. Fourteen per cent (14.0%) of the HIV positives are intravenous drug users and 29.0% have been infected abroad. More than half (55.1%) of the HIV positives are between 25–39 years of age. More than half of
the HIV positives (1708) live in the southern province of Finland. Only 81 individuals with HIV live in the province of Oulu (KTL 2008).

Comparing HIV/AIDS to other sexually transmitted diseases in Finland, there were 13,973 reported cases of chlamydia (Chlamydia trachomatis) in 2007. Women had 60% of the infections. In the majority of the cases the women were aged between 15 and 24 when contracted the disease and men were between 20 and 24 years of age. The number of gonorrhoea (Neisseria gonorrhoea) notifications was 235 in 2006 and 193 in 2007. The majority of patients were between 15 and 55 years of age and 63% of them were men. There were also 130 notified cases of syphilis in 2006. The highest incidences were in the hospital districts of Etelä-Savo, Etelä-Karjala, Kymenlaakso, Helsinki and Uusimaa (KTL 2007).

Table 2. The current HIV/AIDS situation: comparing Finland to Kenya.

<table>
<thead>
<tr>
<th>Year</th>
<th>Finland</th>
<th>Kenya</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>5,276,955</td>
<td>36,433,000</td>
</tr>
<tr>
<td>Female</td>
<td>2,693,213</td>
<td>NA</td>
</tr>
<tr>
<td>Male</td>
<td>2,583,742</td>
<td>NA</td>
</tr>
<tr>
<td>Life expectancy at birth (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002 Males</td>
<td>75</td>
<td>48</td>
</tr>
<tr>
<td>Females</td>
<td>82</td>
<td>46</td>
</tr>
<tr>
<td>2007 Males</td>
<td>76</td>
<td>51</td>
</tr>
<tr>
<td>Females</td>
<td>83</td>
<td>50</td>
</tr>
<tr>
<td>Religion</td>
<td>Lutheran 83%, Orthodox 1%, Other 1%, No religious affiliation 15%</td>
<td>Protestant and Quaker 45%, Roman Catholic 25%, Islam 10%, Traditional Religions 10%</td>
</tr>
<tr>
<td>2007 HIV infected</td>
<td>2265</td>
<td>NA</td>
</tr>
<tr>
<td>2006 HIV infected</td>
<td>2074</td>
<td>1,300,000</td>
</tr>
<tr>
<td>HIV infected children (0–14 years)</td>
<td>22</td>
<td>117,000</td>
</tr>
<tr>
<td>new infections</td>
<td>193</td>
<td>55,000</td>
</tr>
<tr>
<td>HIV positive pregnant mothers</td>
<td>14</td>
<td>57,800</td>
</tr>
<tr>
<td>AIDS deaths</td>
<td>273</td>
<td>85,000</td>
</tr>
<tr>
<td>AIDS orphans (0–14 years)</td>
<td>0</td>
<td>1,044,000</td>
</tr>
</tbody>
</table>
HIV/AIDS spread rapidly in Kenya during the 1990s reaching prevalence rates of 20 to 30% in some areas of the country. In 2004, there were about 250 new infections a day. The yearly death rate due to AIDS was about 104,000 which meant 300 deaths a day. Kenya has been able to decrease the number of the HIV/AIDS infected. In 2006, 1.3 million of Kenya’s inhabitants (5.1%) were infected with HIV. In 2007 the prevalence of HIV increased again (7.2%). Two thirds of the infected individuals were female and about 100,000 of them were children. In 2006, 760,000 adults were HIV tested, 35% of them were HIV positives including 6,000 children (UNAIDS 6.2.2008, National AIDS Control Council 2005).

When adults die of AIDS their children become orphans. In 2004 there were about 2.3 million orphans (a child under the age of 18 who has lost at least one parent). One million (45%) of these children have lost their parents to AIDS. The orphans need care and the support of other parents and the community (UNAIDS 6.2.2008, National AIDS Control Council 2005).

2.2 Attitudes towards HIV/AIDS and people with HIV/AIDS

2.2.1 Definition of attitudes

Attitudes include different components. In this study the concept “attitude” is defined according to Uutela (1985), to include three components. The first is a cognitive component, such as knowledge that describes what people think. The second component is affective, such as feelings. The third one is an action component, the readiness to behave in a specific way. Individual differences have been detected in the attitude structure.

There are also other definitions. Huskinson & Haddock (2004) found out that an affect-based appeal was more persuasive among individuals with affective (as compared to cognitive) attitudes, and that individuals with cognitive attitudes were more persuaded by cognitive (as compared to affective) appeals. The findings are discussed in relation to the important roles of affective and cognitive information in the guiding attitude.

Välimäki et al. (1998) have done a literature based review of the research to study the attitudes of professionals, students and the general public towards HIV/AIDS and people with HIV/AIDS. The review shows that in the 1990s the research interest increased in the issues of HIV/AIDS. At that time most of the
research was empirical and used questionnaires in the USA. The focus was on the students’ attitudes towards HIV/AIDS and the sexual behaviour but also included attitudes of the health care personnel and that of the students. The attitudes appeared to be closely connected to the level of knowledge, gender and culture. It seemed that the attitudes had been highly resistant to change and therefore more consideration was needed to find appropriate ways to educate the general public, students and health care professionals.

Karama et al. examined (2006) knowledge, attitudes and practice towards HIV/AIDS in a rural Kenyan community among the population of 1,500 people. The respondents were between 16 and 49 years of age. Almost all respondents knew the word “HIV”. Half of the respondents knew a person with HIV. About 80% gave death or fear as words representing their image of AIDS. Regarding the sexual activity, the distribution of answers to the question “How many partners have you ever had in your life” was bimodal in males but had only one peak in females, indicating that some of the men have a large number of sexual partners in their lifetime. The first sexual intercourse was around 12–13 years of age for both sexes. Female teenagers were more sexually experienced than their male counterparts.

2.2.2 Knowledge/awareness of HIV/AIDS

Definition of knowledge

A cognitive component of attitude, knowledge describes what people think. Knowledge and information about HIV/AIDS have been shared through media and several information sources. Requirements for sexual education and study material on HIV/AIDS and other sexual disease are continuously growing. In the 1980s and 1990s wide sexual education related campaigns were organised for the entire population in Finland. At the same time the Ministry of Social Affairs and Health began to send all the youngsters aged 16 (later also to those aged 15) a magazine of sexual education with a contraceptive and a letter to the parents. It has not been sent since 2004. The number of infections has increased from 126 new cases in 2004 to 189 in 2007. In order to correct the lack of information the Ministry of Social Affairs and Health has compiled the first national action programme 2007–2011 in Finland for the promotion of sexual and reproductive health. Sexual and reproductive health studies are included in the health education
studies and curriculum of the comprehensive and vocational schools (Ministry of
Social Affairs and Health, 2007). In Kenya, the University of MOI has a policy of
HIV/AIDS. It includes HIV/AIDS education, rights and responsibilities of
students and staff and a possibility for voluntary testing at the university (MOI
University HIV/AIDS Policy, 2006).

Knowledge /awareness of HIV/AIDS

There are studies concerning different groups and their knowledge about
HIV/AIDS, for instance, with regard to young people in general, students and
medical and nursing staff. Young people generally have a very good HIV related
years of age) sexual experience, prevention and knowledge as well as attitudes
and information sources concerning HIV and AIDS. The knowledge of HIV
transmission was good. The youngsters knew the modes of infection and the
number of incorrect responses in the survey was low (less than 5%). The level of
knowledge at the age of 13 is lower than that of the girls at the age of 17. Almost
all (90%) of the adolescents knew that HIV infection can be avoided by using a
condom and it was not transmitted by shaking hands. There were differences in
the knowledge between girls and boys only with regard to the number of sexual
partners where more girls than boys believed it to be a factor increasing the risk
of infection. The youngsters reported that they had received their information
from the television, journals, public health nurses and teachers. In the study of
Muononen et al. (2002) the knowledge levels of the youngsters from 13 to 16
years of age in suburban schools in southern Finland were relatively low and the
disease was somewhat stigmatized, whereas homosexuality was less stigmatized
than in other developed countries. The result suggests that Finnish adolescents
need to be better informed about HIV and AIDS for instance by the schools and
the school nurses.

Almost half of the total respondents of the Korean adolescents in the study of
Yoo et al. (2005) reported that they are not concerned about HIV/AIDS (46%)
and 94% indicated a need of receiving prevention education in the future. The
respondents identified TV (52.5%) and school classes (32.1%) as the two main
sources of information. Only a few referred to their parents (1.3%) as a source of
information. Eriksson et al. (1997) had compared the information and knowledge
between the Kenyan and Swedish teenage school students. The overall knowledge
about HIV/AIDS was high but in specific items the knowledge and awareness of
risk behaviour of contracting HIV/AIDS differed for the Kenyan and Swedish teenagers. The dissemination of hard factual information has thus been successful in reaching out though not in stopping the spread of HIV/AIDS. The strategies in the prevention and health promotion should focus on the changes of lifestyle.

In the study of Alberg et al. (2001) the perceptions of sexual risk and sexual practices were compared among the youth in Sweden and in Kenya. Most differences were at the level of knowledge on matters of sexuality and the ability to talk with ease about those matters. The adolescents had not been provided with enough information and services concerning preventive possibilities. In both countries the boys had more sexual freedom while girls were controlled through labelling and rumours. The girls were assigned responsibility for safer sex.

In the study of Pattullo et al. (1994) the knowledge, attitudes and sexual behaviour were evaluated in eleven Kenyan secondary schools. The mean age of the students was 16.3 years. They did not have many sexual experiences. No prior sexual experience was reported by 71.3% of the female students and 25.2% of the male students. Sixty per cent of the students denied ever using condoms during sex and only 6.8% of those who reported to have several partners used condoms all the time. The students had a high level of knowledge regarding HIV/AIDS.

The study by Wody (2005) in Nigeria concerned the secondary school students’ attitudes towards HIV/AIDS. The students’ median age was 19 years. One third to half of the respondents believed that a person may become infected through mosquito bites; they also believed that an infected teacher or a student should not be allowed to continue teaching or attending school. The students had not had discussions about HIV or AIDS with their boy friend or girl friend, nor their parents. In the study of Lefkowitz et al. (2003) adolescents who discussed safer sex with their mothers tended to be older, less religious and have more educated mothers than those who did not.

A total of 1,387 Turkish high school students responded the questionnaire in the study of Turhan et al. in 2006. Nearly half of the students expressed discomfort when having contact with people with HIV/AIDS. More than half of the respondents (52.7%) stated that HIV positive persons should be publicly announced or marked as HIV+. The students displayed a knowledge gap about HIV/AIDS. Negative attitudes and discrimination were prevalent. The results showed that knowledge is not always enough to change attitudes alone and more consideration needed to be given on effective health education methods.

In the study of Serlo and Aavarinne (1999) most of the Finnish university students identified HIV correctly as a virus (62%) which is transmitted through
sexual contacts. For the students it was easier to identify HIV correctly than AIDS. AIDS was regarded as immunodeficiency which gradually leads to death. It was also reported to be a sickness which is fatal, but also as a disease of homosexuals and an incurable disease which tortures the patient. The most important sources of information concerning HIV/AIDS were television (84%) and the newspapers (80%). More information was requested, for instance, concerning the cure and spread of HIV. One third of the students obtained their information from a school nurse. The students estimated their knowledge to be insufficient even if there was plenty of information available for them. Knowledge did not increase the use of safe sex but limited their sexual behaviour.

The level of knowledge of university students in the United Arab Emirates was low concerning HIV/AIDS. Even if 90% of the students were familiar with the main routes of infection, there were misconceptions about the transmission. Only 31% of them knew that there is no vaccine against HIV/AIDS and 34% knew that there is no cure. Religion was stated as a reason for avoiding extramarital relationships by 91% and sexually transmitted diseases by 38%, while 94% favoured premarital testing. The main information sources were books/media and schools as well as health professionals (Ganczak et al. 2007).

The study of Huang et al. (2005) investigated in a descriptive cross-sectional survey of 1,326 university students’ knowledge, attitudes and perceptions of HIV/AIDS in China. More than ten per cent (14%) of the Chinese university students are sexually active and risk behaviours tended to increase with age. Twenty four per cent of the students considered themselves to be at moderate to very high risk of contracting HIV and 40% of the sexually active students never used condoms. Therefore it was regarded very important to target prevention programmes for university students in China.

In the study of Soet et al. (1997) the knowledge, attitudes and sexual practices of Asian college students were investigated. The results indicated that the male students were more sexually active, more likely to use condoms and they had less positive attitudes toward abstinence than did the female students.

Lohmann et al. (2000) examined German nursing students’ knowledge of and attitudes towards HIV and AIDS. The results indicated that the nursing students had rather a high level of knowledge concerning AIDS. All the students (n = 175) knew correctly that AIDS was a disease that attacks the human immunity system. The students also knew that there was no cure for AIDS (92%) and that infections were common complications of AIDS (89%). The majority of the students knew the vulnerability of the risk groups to become infected. Only a minority of the
students knew that eye protection was needed in situations where blood and body fluids could get into other individuals’ eyes (61%). However, there were gaps of knowledge concerning issues such as AIDS immunopathology or the symptoms of the disease. Single nursing students and those having cared for a person with AIDS had a more thorough knowledge about the disease compared to married, widowed or divorced students.

The Finnish home nursing staff had a high level of knowledge of HIV and AIDS (Suominen et al. 2000). Older and more experienced nurses tended to be less knowledgeable about AIDS. The personal knowledge of AIDS patients and experience of treating them was associated with a high level of knowledge, positive attitudes, a low level of homophobia and a willingness to care for these patients.

In the study of Bektas & Kulakac (2007) the aim was to assess the knowledge and attitudes towards HIV/AIDS of nursing students in Turkey. The majority of the students had a moderate level of knowledge. More than sixty per cent (64.4%) answered correctly of HIV/AIDS related questions. The fear of being infected and feelings of pity and empathy were the most common feelings indicated by the students. The results underlined the need for strengthening education in all aspects of HIV/AIDS. The results were similar in the study of Williams et al. (2006) concerning Chinese nurses.

Knowledge, attitudes and practices among physicians on HIV/AIDS in Vietnam was reported in the study of Quach et al. in 2005. The younger physicians or those with high patient volumes tended to be better informed. Older physicians were more likely to have positive attitudes than the younger physicians. In conclusion, even though Vietnamese physicians are providing health care for HIV/AIDS patients, the level of knowledge, attitudes and practices regarding HIV/AIDS treatment suggested that further education was needed. The effectiveness of two types of workshops was measured by comparing the HIV related knowledge and attitudes of practicing nurses in Alabama in the study of Stewart et al. 1999. Workshops were found to influence positively the attitudes of nurses towards HIV.
2.2.3 Feelings about HIV/AIDS and people with HIV/AIDS

Definition of feelings

The second component of attitudes is affective; it describes how people feel, i.e. their feelings (Uutela 1985).

Feelings can be positive or negative. They include the understanding and sharing of another person's feelings. Feelings are a state of consciousness, which results from emotions, sentiments or desires (Oxford Dictionary 1995). An emotion is a disturbance of mind, brief or changing situations. Emotions describe the nature or character of psychological functions. They are linked to physiological reactions, expressions, gestures and assessment of a situation. They are also defined to be a primitive form of interaction. An atmosphere, for instance, of fear may cause an irritation and a certain primitive, automatic reaction identified as emotion. In spite of this, in many cultures emotions (passion) are contrasted with cognition (reason) as a source of motivation and decision-making. The basic emotions are anger, fear, sadness, happiness, disgust and interest (Egidius 1982, Ojanen 1993, Oxford Dictionary 1995).

Beliefs are defined as trust or confidence; acceptance (of a thing or fact) as true or existing (belief in his honesty). The concept of belief presumes a subject (the believer) and an object of belief (the proposition). Beliefs are also divided into core beliefs (those which you may be actively thinking about) and dispositional beliefs (those which you may ascribe to but have never previously thought about). An opinion is defined to mean a judgement or belief. It may also mean a thought on a particular question, a belief, formal statement by expert or an estimate of something. An opinion does not need to be a fact. If it later becomes proven or verified, it is no longer an opinion, but a fact (Oxford Dictionary 1995).

Feelings about HIV/AIDS

The feelings about HIV/AIDS are studied among several age groups and health care professionals. In the study carried out by Pötsönen and Kontula (1999) the attitudes of Finnish adolescents towards HIV infected persons were mostly positive and tolerant. The feelings of the adolescents at the age of 15 were concerned with the fear of becoming HIV infected. Half of the adolescents (47% of boys and 56% of girls) stated that they were concerned about the possibility of getting AIDS. They (about 70% of respondents) did not feel that they should avoid
sexual relationships because of AIDS. The girls were more tolerant in their opinions than boys concerning HIV infected persons. The attitudes became more negative the more distant the infected persons were felt to be. Approximately three quarters of the adolescents would visit their friend with HIV or would take care and look after the person. Only about half of the respondents would allow infected children to go to school with other children or work as teachers. The majority of the respondents felt compassion towards AIDS patients (63% of the boys and 86% of the girls).

The HIV/AIDS related social anxieties among adolescents were examined in 1998 in three African countries, Nigeria, Kenya and Zimbabwe. The factors examined were similar in these three counties: condom interactions, refusal of risk, confiding in significant others, contact with people with HIV/AIDS, and general assertiveness. Contacts with people with HIV/AIDS were seen as being less anxiety-provoking. Refusal of risk and confiding in significant others showed mean item scores on anxiety above those of the general assertiveness. Kenyan students were found to be less anxious about the social situation related to HIV/AIDS than the Nigerian or Zimbabwean students. Female students tended to report lower anxiety than male students concerning measures related to condoms in Nigeria and Kenya, while female students tended to be more anxious about confiding in others than men; female students tended to be less anxious about being assertive than male students (Venier 1998). Mahata and Scoloveno (2006) studied Nepalese adolescents’ knowledge, attitudes and beliefs related to HIV/AIDS. Approximately 79% of the respondents thought that AIDS was a big problem and 67% were afraid of getting AIDS.

Most of the Finnish university students enrolled in the study had positive attitudes towards HIV/AIDS and people with HIV/AIDS (Serlo & Aavarinne 1999). There were positive feelings, such as HIV-infected and AIDS patients have the equal rights to receive treatment and care just like the others. The students also reported of negative attitudes. More than thirty per cent of the respondents reported that they did not feel any sympathy towards HIV/AIDS patients and it would not be nice to meet HIV-infected or AIDS patients. Almost one third (26%) of the students found it unpleasant to touch an HIV/AIDS patient. The most negative feelings were felt towards homosexuality and the users of intravenous drugs, especially by male students.

The students were also asked about their feelings towards HIV/AIDS in open questions. The reported feelings included emotions and beliefs. Their feelings towards HIV were varied, such as empathy and a feeling that the infected ones
should have a responsibility and not to spread the infection. The students had also negative feelings due to the fear of becoming infected. The students’ feelings were also relevant and based on the knowledge of HIV and behaviour regarding the correct knowledge of HIV. The feelings towards AIDS were stronger than towards HIV. The respondents had empathy and believed that a cure would be developed. They reported also that the feelings were strange or the students felt that it did not concern them because they had not had any temporary relationships. The feelings of finality were based on the fear of death.

In the United Arab Emirates the university students reported a sense of fear and intolerant attitudes towards people living with HIV. HIV/AIDS education designed to change people’s attitudes is urgently needed from the media, schools and the health care professionals (Ganczak et al. 2007).

In the research carried out by Parker and Bhugra (2000) the majority of the attitudes of the British medical students to male homosexuality, bisexuality and HIV/AIDS were positive. For those to whom religion was important, there was a significant correlation (p < 0.001) with more negative attitudes towards male homosexuality and bisexuality and a greater fear of treating HIV/AIDS patients.

Attitudes of physicians and nurses of the University College Hospital were examined in Nigeria by Olley (2003). The questions on attitude included items of fear of HIV infection, futility in providing care for HIV patients, distress in caring for a patient who is likely to die and the willingness to care for people living with HIV/AIDS. The results showed that there was a significant association between the reported high self-efficacy and less fear of acquiring HIV, less futility in providing care for people with HIV/AIDS and an increased willingness to provide such care. The high number of education years was associated with high willingness to care. Female gender was significantly related to the perception of futility related to the care of HIV/AIDS patients.

Regarding the study of British nursing students (Peate et al. 2002) showed that students who had taken care and who were willing to take care of people with AIDS showed more positive attitudes towards the disease and the patients with AIDS. Older age and reluctance to care for AIDS patients were associated with a high level of homophobic attitudes. Female sex, older age and children at home were associated with more cautious attitudes to sexual risk behaviour. The attitude of Swedish nursing staff and nursing students were in general emphatic towards HIV-infected and the homosexual HIV-infected patients. They also expressed a low degree of fear of HIV contagion. On the other hand, the results also showed
that 36% of the staff and 26% of the students would refrain from caring for an HIV infected patient (Röndahl et al. 2003).

The attitudes of German nursing students towards AIDS and people with AIDS were tolerant and positive. Homophobia was found only in a small minority. Students with positive attitudes towards people with AIDS had less homophobia compared to those having negative attitudes towards persons suffering from AIDS. Students with positive attitudes were also more willing to care for HIV/AIDS patients. Students who had a high level of AIDS knowledge tended to have less negative attitudes and homophobia than those with a low level of knowledge (Lohrmann et al. 2000).

Exploring the fear of contracting HIV/AIDS among twelve trauma nurses was studied in South Africa by Ncama and Uys in 2003. The findings showed that the trauma nurses (six months experience in a trauma unit) perceived themselves to be at risk of acquiring HIV/AIDS from their working environment despite the available precautionary measures. Needle stick injuries appeared to be the main source of fear. They used different coping and defence mechanisms effectively to cope with the fear of contracting HIV. None of them was in an emotional crisis.

A cross-sectional survey was carried out to investigate the knowledge of the universal precaution and the fear of occupational exposure to HIV/AIDS among the nursing and midwifery students in Ethiopia. Eighty nursing students and 25 midwifery students responded to the questionnaire. The students were first and second year students. The findings showed that most of the students (57.1%) had sufficient knowledge about the general precautions. Most students (85.7%) reported fears of occupational exposures to HIV/AIDS. The presence of some relationships between the students’ fears of occupational risks of HIV infections and their knowledge level of universal precautions were also identified. Such fears were more often reported by second year students than by first year students. The results also showed that a significant proportion of those who experienced fears of occupational risks of HIV infection, also reported that these fears discouraged them from continuing to work in the caring professions (Aga and Mekonnen 2004). Fear of contagion of HIV was also reported in the study of McCann & Sharkey (1998). Nurses from several Asian countries reported fear and it also influenced their willingness to work with colleagues or patients with HIV/AIDS.

Attitudes, concerns, gloving practices and practical HIV/AIDS knowledge of 1090 Taiwanese nurses were investigated in the study of Juan et al. in 2004. Nearly twenty per cent (19.3%) of the nurses were going to leave nursing because
of fear contracting HIV/AIDS. The nurses regarded it had been their right to
know of the presence of HIV positive patients.

Kylmä et al. (2001) examined eight Finnish voluntary caregivers’
descriptions of the dynamics of hope in:

a) People being afraid of the diagnosis of HIV or living with HIV/AIDS and
b) The significance to others, from the perspective of caregivers working in
the voluntary organisations.

The results showed the importance of taking into consideration the dynamics of
hope. Living with the fluctuating waves of hope, despair and hopelessness should
be considered when taking care of individuals fearing the diagnosis of HIV or
living with HIV/AIDS.

Uwakwe studied nursing students’ perceptions, knowledge of and attitudes
towards HIV/AIDS in Nigeria 2000. The students gained education on HIV/AIDS.
The research reported that a number of positive changes occurred over the period
of the study. The nurses were better informed and responded more positively to
challenges related to the care of HIV/AIDS patients.

**Feelings about HIV infected and AIDS patients**

Carvalho (2006) explored the feelings of 30 Portuguese HIV-infected women
towards HIV infection. The respondents reported mainly sadness, anguish,
depression, anger, will of dying, a great emptiness and fault. Kylmä et al. (2001)
studied hope, despair and hopelessness in living with HIV/AIDS by interviewing
10 people living with HIV or AIDS. The dynamics of hope was found
multifaceted and to be a complex combination of hope, despair and hopelessness.
It compromised the balance between “believing life to be worth living in the
present and in the future”, “losing one’s grip and sinking into a narrowing
existence vs. fighting against sinking” and “giving up in the face of believing in a
non-existing future”.

Anxiety and fear were the most frequently reported symptoms in the study by
Kemppainen et al. (2003) in the USA. There were significant differences in
gender, level of education, and the use of antiretroviral medication. Self-care
behaviours for anxiety and fear were multifaceted, such as using activities for
distraction, talking with others, using alternative/complementary therapies, taking
prescribed medications, using self-talk, using substances and using avoidance
behaviours. Anxiety and fear are commonly experienced by people with HIV/AIDS.

2.2.4 Sexual behaviour related to the attitudes towards HIV/AIDS

Definitions of sexuality and sexual behaviour

According to Greenberg et al. (1993) human sexuality is a combination of four dimensions. Biological sexuality includes the physical identity, reaction to sexual stimulus, control of fertility and the sexual growth and development. The psychological dimension covers our attitudes towards ourselves and other people. The ethical dimension consists of the factors which affect our decisions such as religion, the conception of the world and the human being. The cultural dimension describes the influence of culture on our thoughts and acts.

According to Kontula (1991), ideology and attitudes are important in the beginning of a sexual relationship. The other facts will become more important later. Religion, self-esteem and appreciation of both friends’ and parents’ conceptions have influenced the attitudes of the youngsters. The roles of marriage and family life are also important parameters which influence the attitudes beyond the sexual behaviour.

In Christianity celibacy has been linked with piety and contraceptives have been a problem for the church. The commence of sexual relationships has been controlled with different kinds of fears. Pregnancy and sexually transmitted diseases have been experienced as the most important fears (Kontula 1991). In Muslim countries the authorities are counting on avoidance of premarital sex, commercial sex work, homosexuality and injection drug use. The Catholic Church opposes the use of condoms as a form of contraception thus the opinions are divided in the fight against HIV/AIDS. The atmosphere is more positive for the use of condoms if one partner has HIV in a marriage. Jewish ethical teaching disapproves of the use of condoms if the marital relations are not life-threatening (Kaiser Daily HIV/AIDS Report 2008).

Sexual behaviour

There are several studies concerning the sexual behaviour of adolescents and university students, their sexual activity, number of partners and prevention.
Finnish female university students reported (Serlo & Aavarinne 1999) that they were more active in their sexual behaviour than men; 41% of the male and 26% of the female students responded as not to have had sex partners during the previous month; 38% of the male students and 47% of the female students were in a sexual contact once to three times a week. Forty two per cent of female students and 21% of men had never used prevention. One third of the female and one fourth of the male students had had sex at the end of the comprehensive school in Finland (Lehtinen et al. 2007).

The Student Health Survey 2004 showed that 80% of the university students were currently sexually active. The prevalence of contraceptive use was 65% among male students and 79% among female students (Virtala 2007).

Yarber et al. (2002) studied selected risk and protective factors associated with two or more lifetime sexual intercourse sexual partners in the USA. They also looked at the non-condom use among rural high school students. The sample included 569 sexually experienced female adolescents and 561 sexually experienced male adolescents who attended rural high schools. For females, the start of the sexual activity before the age of 15, forced sexual intercourse, physical abuse, and marijuana use were associated with having two or more lifetime sexual intercourse partners. Starting the sexual activity before 15 years of age, binge drinking, and the use of marijuana were associated with having two or more sexual intercourse partners. Coital debut before the age of 15, forced sexual intercourse, and regular cigarette smoking were associated with non-condom use at the latest coital episode for the females. Forced sexual intercourse and cocaine use were associated with non-condom use at the latest coital episode for the males (Yarber 2002).

The findings suggest that the rural adolescents who initiate sexual activity at an early age are at a markedly greater risk of engaging in subsequent sexual risk behaviour, such as having multiple sex partners and non-condom use. Further, substance use and a history of forced sex were also prominent determinants of sexual risk-taking. Hence it is valuable to delay the onset of sexual intercourse until the adolescents are older (Yarber et al. 2002).

Fifty one per cent of the unmarried Thai students from eight vocational schools in Bangkok and Surin had had sexual experience. The average age of the first sexual experience was 17.02 years. Their first sexual partners were either an old boyfriend or girlfriend. Eleven per cent had experienced forced or coerced sexual intercourse. Almost 40% had had more than one sexual partner (Rasamimari 2005).
Prevention and sexual risk behaviour

There are different studies about the use of prevention related to risk behaviour among adolescents. Pötsönen and Kontula examined the attitudes towards condoms related to gender and sexual experiences among adolescents in Finland in 1999. In 1990, the data were compiled from 928 students and in 1994 from 1,183 adolescents in order to examine their condom attitudes. In 1994, 70% of the boys and 55% of the girls reported that they had used condoms with their partner during the last intercourse. The number of adolescents who used some contraceptive method increased from 13 to 265 from year 1990 to 1994. The attitudes of adolescents who did not use any contraceptive method were on average more negative towards purchasing condoms than the attitudes of those who used condoms or pills as their contraceptive method. The adolescents were well aware of condoms preventing unwanted pregnancy and protecting against sexual diseases. The boys reported more often than girls that it was easy to use a condom and that condom diminished sexual pleasure. The adolescents were still quite shy to purchase condoms. In 1990 the attitudes of the girls who had had sex were more negative than the attitudes of the boys. In 1994, however, their attitudes were similar to those of the sexually experienced boys.

The factors relating to the use of condoms among the young people in Kenya were examined by Stoskopf et al. in 2000–2001. The results showed that the knowledge score increased: 1) with the years of education, 2) the practice of Islam, 3) as a result of HIV/AIDS information obtained from the radio, 4) worrying about contracting HIV/AIDS, and 5) receiving AIDS education, or 6) family life education at school. The knowledge score was negatively related to age. The likelihood that a respondent would use a condom increased significantly when either the respondent was willing to use a condom, or when a sexual partner requested it, or when the respondent knew where to purchase condoms and when the respondent had received education on family planning and AIDS at school. The likelihood of using condoms was negatively related to the age and to the statement “real men do not use condoms”.

Condom use varied by type of partner, was less likely among males outside the education system and higher among those more positive and informed about condoms in the study of Douthwaite & Sareoun, In Cambodia, 2006 of all sexually active respondents, half reported three or more partners, and 71% used condom at last sex.
The university students’ sexual behaviour was studied in Turkey by Aras et al. (2007). The students were 20–25 years of age. The frequency of sexual intercourse among male students was higher (61.2%) than that among female students (18.3%). The mean age at the first sexual intercourse was lower among the male than among the female respondents. The rate of condom use at the first sexual intercourse was 47.4%. Spanish students had started their sexual relations at 17.8 years of age (Luengo-Arjona et al. 2007). Nearly 30% of the students (n = 51) used a postcoital pill. Men started sexual relations earlier and had a greater number of partners as compared to the female students. A greater percentage of men had had sexual relations under the effect of drugs.

In the study of Fisher et al. (2008) 30% of the adolescents reported being sexually experienced and 23% reported alcohol or drug use in the previous month. Older age and lower school satisfaction were associated with both risk behaviours. Male gender, current substance use, high HIV/AIDS knowledge and high risk perception were associated with being sexually experienced. Sexual experience and lower expectations for future life outcomes were associated with substance use. The findings in the study of Marojele et al. (2006) showed strong links between alcohol consumption and sexual risk behaviour in South-Africa.

Moore and Oppong (2007) have studied sexual risk behaviour among people living with HIV/AIDS in Togo. They were using qualitative interviews as a research method. They suggested that even if people living with HIV/AIDS may be aware of the risk of infecting their sexual partner, they ignore the risk because of other considerations, such as wanting to have a baby.

In the study of Dilorio et al. (2007) the efficacy of an intervention among 11 to 14-year old adolescent boys to promote the delay of sexual intercourse and condom use among those who were sexually active and communication between fathers and sons were examined. Most participants were African American and most of the fathers lived with their sons. Significantly higher rates of sexual abstinence and condom use and intent to delay initiation of sexual intercourse were observed among adolescent boys whose fathers participated in the intervention.

Pelzer et al. reported in 2004 about attitudes towards the HIV-antibody testing and people with AIDS among the university students in India, South Africa and the United States. The students (600) filled in a self-administered questionnaire. The majority of the American and South African students but only 10 per cent of the Indian students had been sexually active in the past 12 months. Almost one fifth of the American and South African participants but only 10% of
the Indian students admitted to having had an HIV test. The American students had much more positive attitudes towards HIV testing than the South African and Indian students. The Indian students identified blaming, irritation and negative attitudes towards homosexuals but readiness to personal contact with people living with AIDS. South African and American students felt pity and irritation concerning contact with AIDS patients. Positive HIV testing attitudes were positively related to contact readiness with AIDS patients.
3 Purpose of the study, research questions and study design

The purpose of this study is to describe and to compare the university students’ attitudes towards HIV/AIDS in Finland and in Kenya and to find explanatory factors associated with the sexual risk behaviour. For educators and managers in health care and in health education the results will provide an opportunity to deepen their knowledge and awareness of students’ sexual behaviour. These results may also be used for planning an educational programme for youngsters and young adults in order to promote healthy sexual behaviour.

In this study the concept “attitude” is defined according to Uutela (1985) to include the cognitive (knowledge), affective (feelings) and behavioural (behaviour) components.

According to Polit & Hungler (1999) the research design is the overall plan for obtaining answers to the study questions. The design specifies the adopted research approach. In quantitative studies research design tends to be highly structured. The study design is presented in Figure 1.

The questions examined in the study:

1. What kind of attitudes do male and female university students have towards HIV/AIDS in Finland and in Kenya?
   1.1. What kind of knowledge do the students have concerning HIV and AIDS?
      1.1.1. How do the university students define HIV and AIDS?
      1.1.2. What kind of information sources do the university students use?
      1.1.3. How sufficient did the university students estimate their knowledge to be?
   1.2. What kind of feelings do the university students have towards HIV/AIDS?
   1.3. What kind of risky health behaviour do the university students have against HIV-infection?

2. What kind of differences in attitudes (knowledge, feelings and behaviour) do the Finnish male and female university students have towards HIV/AIDS?

3. What kind of differences in attitudes (knowledge, feelings and behaviour) do the male and female university students have towards HIV and AIDS in Finland and in Kenya?

4. What kind of factors in the male and female university students’ attitudes (knowledge, feelings and behaviour) influence the sexual risk behaviour of the students both in Finland and in Kenya?
Literature review on the students’ attitudes towards HIV/AIDS – knowledge, feelings and behaviour

University students’ attitudes towards HIV/AIDS in Finland and Kenya (n=525)

Finnish students (n=412)          Kenyan students (n=113)
Knowledge of HIV/AIDS            Knowledge of HIV/AIDS
Feelings towards HIV/AIDS and people with HIV/AIDS
Behaviour according to the knowledge of and feelings towards HIV/AIDS and HIV/AIDS patients

Comparative study design with quantitative and qualitative research methods
Questionnaire: structured questions, open questions, Likert scale

Comparative Analyses
Quantitative data:
- descriptive analyses
- statistical analyses
Qualitative data:
- content analyses
- statistical analyses

Male and female university students’ knowledge, feelings and behaviour towards HIV/AIDS and people with HIV/AIDS

Risky/healthy sexual behaviour of university students in Finland and Kenya

Fig. 1. Study design.
4 Methodology

4.1 Data, methods and reliability

This is a comparative research study. The comparison is carried out between groups (Polit & Hungler 1999). The comparative method is based on the presumption that there exists a normal perceivable political, social and economic process of change, which manifests itself in different systems. Generalizations of the development of phenomena can be made. The different systems where a given phenomenon occurs or may occur can be compared with each other (Salminen 1999, Salminen 2004). According to Figueiredo (2002) the aim of comparative research is to produce measures that are highly reliable and sensitive, and, at the same time, reasonably specific. According to Gerrish & Lacey (2006) in comparative surveys data are collected that allow comparison to be made according to demographic features such as age, gender or class. The main purpose is to compare variables across people, places or time.

The purpose of this study is to describe and to compare the university students’ attitudes (knowledge, feelings and behaviour) towards HIV/AIDS in Finland and in Kenya and to find explanatory factors associated with sexual risk behaviour.

4.1.1 Research methods

Comparative descriptive design

In this study both the quantitative and the qualitative data sets were used as basis of comparison. In a comparative study, two or more units in two or more countries are compared as to the same concepts based on a systematic analysis of the phenomenon. According to Polit & Hungler (1999) it is advantageous to design a study with as many relevant comparisons as possible. The use of the comparative study lowers the boundary between the qualitative and quantitative research methods and simultaneously combines these two methods. The comparative research process is similar to other kinds of research processes. A research process starts with identifying the study problems and theory moving on to data collection, description, classification and pre-analysis, conclusions, report and dissemination of the results (Salminen 1999, Gerrish & Lacey 2006).
The research method covers the techniques used for structuring a study and to gather and analyse information in a systematic fashion (Polit & Beck 2004). The quantitative research method concerns the structured questions in an attempt to obtain objective and measurable data that can be analyzed statistically. Frequencies, percentages and cross-tabulations were used as the descriptive methods.

The qualitative data were collected by the open ended questions in the questionnaire. The reported data brought more information and a wider perspective into the responses obtained in the structured questions of the questionnaire.

4.1.2 Data collection

Questionnaire

The questionnaire included both structured and open-ended questions, providing the respondents with a possibility to answer freely. The questionnaire consisted of 38 questions (Appendix 7). The questionnaire included questions about the background of the students and their present state of life, information sources of HIV/AIDS, knowledge about HIV/AIDS, feelings and behaviour towards HIV/AIDS and people living with HIV/AIDS (Appendix 4). The expected time for completing the questionnaire was 20–25 minutes. The questionnaire was tested in Finnish with the 173 students in the Oulu University as reported by Serlo & Aavarinne 1999.

According to Jones (1987) the relationship between research goals and translation procedures, describes back translation as a means of checking translation adequacy, and illustrates the assessment of the reliability and validity of a translated instrument. In this study the guidelines of cross-cultural asymmetrical translation by Jones were followed. The original (source) language into the second (target) language remained loyal to the source language. The questionnaire was translated into English and back into Finnish by two persons. The translations were compared with each other. In the comparison and discussion of the two translations there were only a few differences in the selected words. The content of the unclear words was checked in the Oxford dictionary.

Thereafter, the questionnaire was sent to Kenya to be tested by ten university students. The questionnaire was completed by adding some alternative religions,
typical to Kenya. English is one of the official languages in Kenya. The other official one is Swahili.

**Sampling**

In this study non-probability sampling was used. To provide answers to the research questions the data were collected using a questionnaire. The study population consisted of 600 first year university students of Oulu University of Applied Sciences, Oulu University and the University of Helsinki in Finland and of MOI University in Eldoret, Kenya. The students’ field of study were social and health care, medicine, economics, business and technology.

In Finland 50 voluntary students in each class in three faculties/units (social and health care/medicine, economic/business and technology) in each university were offered the possibility to respond to the questionnaire. The suitable classes were found and time tables this purposes were made with the help of the student office in each university. After discussion and the lecturer’s permission the researcher had ten minutes in the beginning of the class to motivate the students (Appendix 5) and explain the study plan. The questionnaire was given in an open envelope to the 50 students who were willing to respond anonymously and to return the questionnaire next day in a closed envelope to a box in the info of each unit. The researcher picked the envelopes up next day. The arrangement gave the students a possibility to interrupt or finish answering the questionnaire at any moment. In one class at the University of Helsinki the permission to collect the data was given provided the researcher would give a lecture after the data collection. The topic of the lecture was “The planning process of an international questionnaire.” The data was collected during the year 2005 and 2006.

In Kenya the process was agreed on the same conditions. Collecting the data was carried out by the exchange teacher from Oulu University of Applied Sciences and by the lecturer in Kakamega, Kenya. The closed envelopes were mailed to the researcher in three packages in the spring of 2005.

The study group (non-probability sampling) consists of 525 first year students (172 male and 352 female students). Half of the students (263) were studying in northern Finland (149 students at Oulu University of Applied Sciences and 114 students at the University of Oulu), 149 students at the University of Helsinki and 113 (22%) respondents were from Moi University, Kenya (Table 3). The response rate was 87.5%.
Table 3. The number of Finnish and Kenyan male and female students.

<table>
<thead>
<tr>
<th>Country / University</th>
<th>Male</th>
<th>%</th>
<th>Female</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUAS(^1)</td>
<td>52</td>
<td>34.9</td>
<td>97</td>
<td>65.1</td>
<td>149</td>
<td>100</td>
</tr>
<tr>
<td>Oulu(^2)</td>
<td>33</td>
<td>28.9</td>
<td>81</td>
<td>71.1</td>
<td>114</td>
<td>100</td>
</tr>
<tr>
<td>Helsinki(^3)</td>
<td>39</td>
<td>26.2</td>
<td>110</td>
<td>73.8</td>
<td>149</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
<td>30.0</td>
<td>288</td>
<td>70.0</td>
<td>412</td>
<td>100</td>
</tr>
<tr>
<td>Kenya</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOI(^4)</td>
<td>48</td>
<td>42.9</td>
<td>64</td>
<td>57.1</td>
<td>112</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
<td>32.8</td>
<td>352</td>
<td>67.2</td>
<td>524</td>
<td>100</td>
</tr>
</tbody>
</table>

\(^1\)Oulu University of Applied Sciences  
\(^2\)University of Oulu  
\(^3\)University of Helsinki  
\(^4\)University of MOI

One third of the respondents were male. At Moi University, Kenya, almost half of the respondents were male. In one of the responses the sex was not reported. Otherwise the number of the respondents at the various universities was almost the same.

Table 4. Age of the university students in Finland and Kenya.

<table>
<thead>
<tr>
<th>Age</th>
<th>OUAS</th>
<th>Oulu</th>
<th>Helsinki</th>
<th>MOI</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>&lt; 20</td>
<td>23</td>
<td>22.8</td>
<td>44</td>
<td>43.6</td>
<td>21</td>
</tr>
<tr>
<td>20–24</td>
<td>98</td>
<td>29.8</td>
<td>67</td>
<td>20.4</td>
<td>100</td>
</tr>
<tr>
<td>25–29</td>
<td>17</td>
<td>29.3</td>
<td>3</td>
<td>5.2</td>
<td>26</td>
</tr>
<tr>
<td>&gt; 30</td>
<td>11</td>
<td>29.7</td>
<td>0</td>
<td>–</td>
<td>2</td>
</tr>
</tbody>
</table>

The age of the students ranged from seventeen to forty nine years and the mean was 22.8 years. Most of them were between 20 and 24 years of age (62.7%). The University of Oulu had the youngest students, 38.6% were under 20 years of age. At Moi University more than twenty percent (21.2%) of the respondents were over 30 years of age. The survey was planned to take place during their first year of studies. Over half of the students (56%) had started their studies in 2003 and 2004 and one third (29%) in 2005.
4.1.3 Analyses, reliability and validity

Quantitatively collected data

The data were analysed by using the Statistical Package for the Social Sciences (SPSS) version 15. In order to evaluate the significance of the association between the categorical variables, the chi-square test was used. The measure for statistical significance was established a priori as $p < 0.05$ (Polit & Hungler 1995).

The attitudes towards HIV/AIDS and HIV infected persons and AIDS patients were assessed with 24 items, all using the five point Likert-type scales. The items measured the agreement or disagreement of the attitudes towards HIV, HIV-infected, AIDS or AIDS-patients, homosexuality or intravenous drugs.

The items were also analyzed inductively and classified in three groups. The items were recorded so that the lower composite scores indicated more negative attitudes. The factor analysis supported the classification and suggested three major groups of items in regard to the attitudes (Appendix 6). The Kruskal-Wallis test was used to test the difference between three or more independent groups based on ranked scores. The reliability and internal unity of the grouping variables were evaluated by the Cronbach’s alpha. Cronbach’s alpha simultaneously compares each item on the scale with the others (LoBiondo-Wood & Haber 2006). In group level comparisons the coefficients in the vicinity of 0.70 or even 0.60 would be sufficient (Polit & Hungler 1995). The Cronbach’s alpha for the composite indicators in this study are as reported in Table 5.
Table 5. The reliability and internal unity of the grouping variables.

<table>
<thead>
<tr>
<th>Items</th>
<th>Cronbach’s Alpha</th>
<th>Factors associated with HIV/AIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV/AIDS is a punishment by God for immorality.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV/AIDS is God’s punishment to homosexuals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homosexuals received what they have deserved.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homosexuals must not be allowed to be in contact with anyone.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If my child shows homosexual features I would take him/her to psychiatric care.</td>
<td>0.8</td>
<td>Believes/prejudices concerning HIV/AIDS</td>
</tr>
<tr>
<td>Should I become aware of an acquaintance of mine having HIV/AIDS, it would make it difficult for me to continue with my relationship to her/him.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV/AIDS patients insult me morally.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel uncomfortable with HIV/AIDS patients around.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I find it unpleasant to touch a person with HIV.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is unpleasant to meet HIV/AIDS patients</td>
<td>0.7</td>
<td>Feelings about contacting HIV/AIDS patient</td>
</tr>
<tr>
<td>Contact with HIV/AIDS patients is different from that with the healthy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A person with HIV/AIDS does not have equal rights for care to anyone else</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not feel sympathy towards HIV/AIDS patients.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working with HIV/AIDS patients cannot be a rewarding experience.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not want to have anything to do with intravenous drug users.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The high expenses of HIV/AIDS patients’ care are not fair towards others needing care.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intravenous drug user with HIV/AIDS should be admitted for care only after other patients.</td>
<td>0.6</td>
<td>Sensations/emotions towards HIV/AIDS patients</td>
</tr>
<tr>
<td>One cannot ask anyone to be in contact with a person with HIV/AIDS It is important to stop the habit of being helpful to HIV/AIDS patients.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would change the study institution if I had to study with HIV/AIDS patients in the same place.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If I had HIV/AIDS, I would be worried that I would be regarded as a homosexual.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Qualitatively collected data

The data were analysed with inductive analysis method. To start with, all the data sentences were collected and written down from the questionnaires returned by the respondents. Every person had an individual code to help the researcher to refer back to the original data. The sentences were categorised into groups. The groups were combined into larger units and given titles according to the content.
of the text (Polit & Beck 2004). The first 100 students’ responses were analysed and categorised also by another person with the same result.

The Finnish and the Kenyan data were analysed together in the same way. The categorised data was compared with the theoretical knowledge reported in the literature review concerning question 11 in the questionnaire (Attachment 7). The data were compared with the quantitative data with statistical methods. The qualitative data expanded the data and information collected by the structured questionnaire. The differences were compared and reported by Polit & Hungler 1995.

4.2 Ethical considerations

The ethical questions in a study which concerns the situations in two countries require special attention. In a comparative study the investigator had to pay special attention to the accuracy and objectivity of the analysis. Some of the questions were very intimate (Salminen 2004).

The approval of the Ethical Committee was applied for and was granted on 25 January 2001. The questionnaire was dealt to the students who showed their willingness to answer the questions. Every student also had the possibility to refrain from answering to the questionnaire. The questionnaires were anonymous. The researcher was the only one who was handling the completed questionnaires after picking them from the info desk. In Kenya there was only one person who collected the data and sent the envelopes to Finland. The researcher picked them up from the Customs in Oulu. The questionnaires will be treated according to Finnish archival law.
5 Results

5.1 Background information

The study population consisted of 525 students (412 Finnish and 113 Kenyan students). Half of the students (263, 50.1%) were studying in northern Finland (149 students at the Oulu University of Applied Sciences and 114 students in the Oulu University). 149 students (28.4%) were studying at the University of Helsinki in the south of Finland. 113 (21.5%) respondents came from Moi University, Kenya. Most of the respondents came from a city (376, 71.9%). Almost all the participating students of the University of Helsinki came from a city (95.3%) and over half of the respondents in Kenya (58.9%) came from the countryside.

Importance of religion

Their religion was mainly Lutheran (68.6%) or Catholic (6.7%). Thirty eight respondents (7.2%) announced to have no religious conviction, or to be an atheist or did not belong to any church.

The importance of religion reported by the male and female students was not statistically significant. With regard to the Finnish students, the respondents from Helsinki University estimated religion to be more often meaningless (24.8%) than the other students. Only 3.4% found it very meaningful (Fig. 2). The difference is statically significant ($p = 0.011$). The Kenyan students (85.8%) reported religion to be very meaningful for them as opposed to the Finnish students (11.4%). The difference is statistically significant ($p < 0.0001$).
One fifth of the students (20.4%) were married or engaged. Almost half of the students (43.0%) had either no relationships, temporary relationships or were divorced. One fifth (20.2%) of the respondents had a permanent relationship but they did not live together.

Female students (17.0%) were living more often in an open relationship than males (12.9%). Male students (35.3% of the male students) had no relationships more often than female (29.6%) students.

When the relationships of the students in different universities were compared there were no big differences found. The respondents from the University of Helsinki had more permanent but not living together relationships (42.5%) than the other students. Another difference was that the respondents from Moi University had more permanent relationships (married and engaged 80.8%) while open relationships were not very common (3.7%).

**Students’ present life**

The respondents described the state of their present life by using different expressions: through their relationship (13.1%), positive feelings of life (45.0%), negative feelings (11.6%), study focused (17.4%) or future oriented (12.9%).

Fig. 2. The importance of religion for the Finnish and Kenyan students.
The relationship-oriented respondents who described their life through the relationship were mostly living in a permanent and satisfying relationship (39). Only seven of them had children. They said that “they were living in a balanced relationship in the beginning of a new life, study place, apartment, and new people”.

Almost half of the students (45.0%) described their state of life by their positive feelings. They felt their life to be satisfying, good, comfortable or happy. The reason was that their life was in order, they succeeded in studies and their relationships had no stress. They also felt stable, safe and healthy; “I am studying in the daytime, working on Mondays, I am happy with the situation, my life feels good”, “I’m a happy man” or “stress free, comfortable and enjoyable”. The respondents from Moi University and Oulu University of Applied Sciences had more positive feelings than the respondents at the universities of Oulu and Helsinki.

About ten percent of the students with negative feelings estimated their life to be bad, stressing, frustrating and difficult. They also felt their life boring, lonely and risky. One of them described it as follows: “Miserable – as I cannot provide for the basic needs, the family and I live on liability”. They also described their life with words such as “busy”, “very unstable”, “unpredictable”, “full of activities struggling for my future life.” They were also worried of their HIV status “I am just at risk of contracting HIV”, “risky to HIV-AIDS”, “I feel that I am at risk of getting HIV/AIDS due to my carrier and because I am not married.”

Less than twenty percent of the study-focused respondents wrote that their life consisted of only studies. Most of them were from the University of Helsinki. They had just started their studies and they were motivated. Some of them were working at the same time. Some of the students were still living with their parents.

More than ten percent were future-oriented experiencing big changes in their life, because they had just moved to another city. They were meeting with new challenges and taking responsibility for the life of their own. The students at the University of Oulu were more the future oriented than the students of the other universities. The female students expressed their state of living through the relationship in twice as many cases (15.3%) as the male students (8.4%).

**Difference between Finnish and Kenyan university students**

The respondents of Oulu University of Applied Sciences described (23.4%) their life status by relationships more often than the students at Oulu University (13.1%)
or in the University of Helsinki (11.9%). Life was felt more study oriented by the students in Helsinki (31.3%) than by the other Finnish university students (Fig.3). The respondents at MOI university did not describe their present state of life at all with their relationship even if they had more permanent relationships (80.8% married or engaged) than the students in the Finnish universities and only one of them (1.2%) described him/herself as study focused at the moment. The difference was statically significant (p < 0.0001).

Fig. 3. The difference in the present life of the students

*AIDS Support Centre*

Half of the respondents (52.0%) knew of the activities of the AIDS support centre. There were shown differences between the universities. One third of the students (31.9%) at the University of Oulu, 52.7% of the students at OUAS, 55.0% in Helsinki and 70.0% of students at Moi University reported that they knew the function. The results were statistically significantly different (p < 0.0001).

**5.2 Attitudes towards HIV/AIDS and people with HIV and AIDS**

The attitudes included the cognitive, affective and behaviour components. The cognitive component of the attitudes was investigated and reported concerning the
Finnish and Kenyan students’ knowledge of HIV and AIDS. The affective component included the students’ feelings towards HIV/AIDS and the people with HIV/AIDS. The responses in the open-ended questions completed the results of the structured questions. The results of the behaviour component are presented focusing on the students’ sexual behaviour.

### 5.2.1 Knowledge of HIV/AIDS among Finnish and Kenyan university students

#### Students’ definitions of HIV and AIDS

In order to measure the students’ knowledge of HIV and AIDS, they were asked to define the concepts HIV and AIDS in open questions (Table 6 and 7).

#### Definition of HIV

Table 6. The content of HIV concept described by the male and female university students.

<table>
<thead>
<tr>
<th>Awareness of HIV</th>
<th>Finnish</th>
<th></th>
<th>Kenyan</th>
<th></th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Virus</td>
<td>214</td>
<td>53.6</td>
<td>94</td>
<td>84.7</td>
<td>111</td>
<td>67.7</td>
<td>196</td>
<td>56.8</td>
</tr>
<tr>
<td>Disease/ sickness</td>
<td>78</td>
<td>19.6</td>
<td>2</td>
<td>1.8</td>
<td>27</td>
<td>16.5</td>
<td>53</td>
<td>15.4</td>
</tr>
<tr>
<td>Infection</td>
<td>47</td>
<td>11.8</td>
<td>2</td>
<td>1.8</td>
<td>6</td>
<td>3.6</td>
<td>43</td>
<td>12.5</td>
</tr>
<tr>
<td>Lethal</td>
<td>40</td>
<td>10.0</td>
<td>8</td>
<td>7.2</td>
<td>13</td>
<td>7.9</td>
<td>35</td>
<td>10.1</td>
</tr>
<tr>
<td>Lack of immunity</td>
<td>20</td>
<td>5.0</td>
<td>5</td>
<td>4.5</td>
<td>7</td>
<td>4.3</td>
<td>18</td>
<td>5.2</td>
</tr>
<tr>
<td>Total</td>
<td>399</td>
<td>100</td>
<td>111</td>
<td>100</td>
<td>164</td>
<td>100</td>
<td>345</td>
<td>100</td>
</tr>
</tbody>
</table>

More than half of all the respondents identified HIV to be a virus (60.4%). They described HIV to be a virus which leads to AIDS, spreads through unsafe sex, sexual or blood contacts causing immunodeficiency. There is no treatment available and at the end it leads to death. HIV was also identified to be a human immunodeficiency virus, human immune virus, retro virus and a sexual virus. It has also been described “a virus which leads to the lethal AIDS”, “it is a virus which causes problems especially in the developing countries. Lots of people are dying and information would help” or HIV is “a virus, it only affects human beings mainly through immoral sexual behaviour.”
The definition of HIV was also identified to be a disease with no cure or a difficult and serious sickness in 80 cases (15.7%). The students described it as a serious and sexually transmitted disease leading to AIDS with death, “a disease that causes immune deficiency” or “The disease leads to death” and “serious sickness with no medicine yet.”

Infection (9.6%) was described to spread in unprotected sexual relationship or a kind of infection which weakens the immune system by preventing the function of T-cells. It was also said that HIV-virus infection leads to AIDS, which is its first stage. It is a state where a person has the infection but no signs or symptoms of AIDS are seen. The respondents said that it is “an infection in the blood, it can break out into AIDS, you can live normally, only responsibility has to be remembered” and “an infection I would not like to get myself or my friends, I wish a medicine will be found.”

HIV was also defined lethal being the first stage to AIDS. “It is a deadly virus that tremendously affects the human immune system leaving body with very little antibodies to besiege the pathogens. The maternity stage of the virus brings upon the AIDS at the final stage.”

The definitions also included descriptions such as the lack of immunity in the body when the immune system is depleted of its defence structures. “Human immune suppressed syndrome, which is when the immunity of an individual is suppressed thus not able to defend against any illness.”

Differences between the Finnish and Kenyan university students

HIV was defined to be a virus more often by male students (67.7%) than female students (56.8%). More female students than male students answered that HIV means an infection. The sex of the students and the definition of HIV showed a statistically significant difference at the level of \( p = 0.017 \) (Table 6).

When the definitions were compared between the students of the different universities, most of the respondents named the concept of HIV correctly to be a virus. 84.7% of the students at Moi University specified it correctly to be a “Human Immunodeficiency Virus,” but they did not explain the content of the concept. The students of the University of Helsinki named it to be a virus in 65.5% of the cases together with half of the respondents (50.5%) of the University of Oulu. The fact that the students come from the Kenyan university, Moi, has a highly significant relationship to the correct definition of HIV.
Education shows a statistically highly significant relationship with correctly defining the concept of the HIV (p < 0.0001).

Table 7. The definition of the concept AIDS.

<table>
<thead>
<tr>
<th>Awareness of the concept</th>
<th>Finnish students</th>
<th>Kenyan students</th>
<th>Male students</th>
<th>Female students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Sickness/Disease</td>
<td>127</td>
<td>32.2</td>
<td>12</td>
<td>10.8</td>
</tr>
<tr>
<td>Consequence of HIV</td>
<td>125</td>
<td>31.6</td>
<td>4</td>
<td>3.6</td>
</tr>
<tr>
<td>Immune deficiency</td>
<td>93</td>
<td>23.5</td>
<td>3</td>
<td>2.7</td>
</tr>
<tr>
<td>Acquired Immune Syndrome</td>
<td>1</td>
<td>0.3</td>
<td>87</td>
<td>78.4</td>
</tr>
<tr>
<td>Lethal</td>
<td>30</td>
<td>7.6</td>
<td>3</td>
<td>2.7</td>
</tr>
<tr>
<td>Something else</td>
<td>19</td>
<td>4.8</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>Total</td>
<td>395</td>
<td>100</td>
<td>111</td>
<td>100</td>
</tr>
</tbody>
</table>

The concept of AIDS reported by all the students included almost the same number of responses with the following terms: a sickness or disease (27.5%) and a consequence or one form of HIV (25.5%) (Table 7). In the first category those who regarded AIDS as a sickness or disease said that it is a stage where the
immune system is getting weaker and is finished at the end. It leads to death because there is no cure or medication. The immunity is lost and one can get one or more of the opportunistic diseases. The respondents also called it a very dangerous sexually transmitted disease which can kill.

AIDS was described to be a more developed form of HIV or the last and active stage of it with no cure (Consequence of HIV). A stage when the virus produces the signs and symptoms of AIDS. It can take several years before immunity will be suppressed by the HIV. There were descriptions such as “A developed form of HIV, no cure, relieving the symptoms and disease,” or “a form of HIV leading to death. I think it almost the same as HIV” or “HIV-virus usually leads to AIDS, which generally kills,” or “optimistic infections that result after the body immunity has been suppressed by the HIV, acquired immune deficiency syndrome.”

The other definitions were as follows: an Acquired Immune Deficiency Syndrome, an immune deficiency and lethal. The students who named it to be an Acquired Immune Deficiency Syndrome did not describe it much. They only mentioned that “this is where the body presents signs and symptoms of a fully blown HIV and a person with HIV suffers from a group of signs and symptoms.” There were more answers from male students (23.2%) than female students (14.6%) in this group.

Immune deficiency was mentioned in 96 (18.3%) cases. The respondents said that “It is caused by the HIV-virus and it usually leads to death because the resistance of the body doesn’t work”. “Some kind of disease for instance cancer is the reason for the final death.” It was also regarded as “an autoimmune disease, which weakens the human immunity and even a smallest sickness can cause the danger of death.”

Under ten per cent of the students (6.3%) saw its finality, like death, as an incurable and lethal disease because the immune system will be totally crashed down. The last stage of HIV with no hope of cure. “AIDS is a deadly disease that is finally staged after severe destruction of the immune system by the HIV virus so far the victim’s life can be prolonged but never treated.”

Differences in definitions between the Finnish ands Kenyan university students

The comparison between the male and female students (Table 7) showed a statistically significant difference (p = 0.090) in the definition of AIDS. Near to
one forth (23.2%) of the male students defined AIDS to be Acquired Immuno Deficiency and the female students in 14.6% of the cases.

More than thirty per cent (34.5%) of the students at Oulu University of Applied Sciences thought AIDS to be an effect or developed form of HIV. None of the students named it by the official term “Acquired Immune Deficiency Syndrome”. Most of the students (38.9%) from Oulu University said the concept AIDS to mean immune deficiency. There were no responses using the formal term. Students of the University of Helsinki expressed most often AIDS to be a disease or sickness (37.9%). Only the students from Moi University called it by the official term “Acquired Immune Deficiency Syndrome” but they did not explain the content of the term. The results showed statistical significance (p < 0.0001).

Fig. 5. The concept of AIDS defined by the students at the universities of Oulu, Helsinki, OUAS and Moi University

There were not very many differences in the definition of HIV and AIDS by the age groups related to the kind of life condition the students told they were living in. There were no relationship between the definition of HIV/AIDS and the year the students had started their studies.
Main information sources

The students were asked to name the three most important sources from where they had obtained their information concerning HIV-infection/AIDS. Altogether the respondents gave 6120 mentions, the average number was 2.3 from each of them. The number of information sources were named as dissemination (21.3%), cause (20.0%), risk group (19.5%), cure (18.1%) and prevention (21.1%), almost all in the same proportion.

Most of the information had been obtained from TV (17.8%) and campaigns (15.0%) followed by newspapers (14.2%) and information packages (9.6%). Next in importance were public health nurses (9.1%), teachers (8.6%) and educational sessions (5.6%). Mothers (1.3%), fathers (0.3%) siblings (0.2%) or relatives (0.2%) were not usually used as information sources, yet mothers were a source of knowledge to their daughters and fathers to their sons. The role of radio and the school journal was small, about 4 per cent each. Students’ health care was used only in 2.9 percent of the cases and a physician in 1.7% (Appendix 1).

The importance of the information source varied according to the dissemination, cause, risk group, cure or prevention. Concerning dissemination of HIV/AIDS the students named TV, newspapers, campaigns, information packages and the teacher to be the most common information sources. The situation was almost the same but the number of naming teachers was higher concerning the cause of HIV/AIDS. As to the prevention the role of teachers was the third important source after campaigns and TV.
Fig. 6. The main information sources for the Finnish and Kenyan students.
Differences between the information sources of Finnish and Kenyan university students

The public health nurses were better information sources for the female students than for the male students (Fig. 6). The female students named public health nurses as the main information source concerning dissemination of HIV/AIDS in 17.6% of the cases (male students, 12.2%, \( p = 0.070 \)), the risk groups in 19.3% of the cases (male students, 16.3%), cure in 20.2% of the cases (males 15.7%) and the prevention in 35.2% of the responses (male students 25.6%, \( p = 0.016 \)).

The radio was more often a statistically significant information source for the male respondents than the female respondents concerning the dissemination (male 14.5%, female 6.5%, \( p = 0.003 \)), the cause (male 11.0%, female 4.8%, \( p = 0.008 \)), the risk group (male 13.4%, female 5.4%, \( p = 0.002 \)) the cure (male 9.9%, female 4.3%, \( p = 0.012 \)) and the prevention of HIV/AIDS (male 15.7%, female 6.3%, \( p = 0.001 \)).

The information sources varied when the results were compared between different universities. According to dissemination, the results were significant. The students of Moi University used less information sources than the respondents at other universities concerning sources such as newspaper 27.4% \( (p = 0.001) \), the TV 24.8% \( (p < 0.0001) \), teacher 5.3% \( (p < 0.0001) \), campaign 16.8% \( (p < 0.0001) \), information package 3.5% \( (p < 0.0001) \), but they used more information sources such as radio 21.2% \( (p < 0.0001) \) and educational sessions 25.7% \( (p < 0.0001) \) than students from the other universities (Appendix 1).

The respondents reported also other information sources such as the Internet in 44 cases, literature in 43 and school in 40 cases. There were also a few mentioning of other sources, such as AIDS support centre, leaflets, scientific publications, magazines, job and the Red Cross.

Knowledge based on experience

The respondents did not have much experience-based knowledge. Only one fifth of the students (20.1%) informed that they had spoken with an HIV/AIDS patient often and very often only 8.9%. More than ten per cent (14.5%) of the respondents had been in direct physical contact with HIV/AIDS patients. Two thirds (66.2%) of the respondents had never been in any kind of connection with a patient, excretion, equipment or the family members of an HIV/AIDS patient.
Differences between the Finnish and Kenyan university students

Comparing the female and male students, the male students (23.3%) had spoken more often with HIV/AIDS patients than the female students (18.7%). They (17.4%) had also been in direct contact with HIV/AIDS patients more often than the female students (11.1%), the difference was statistically significant (p = 0.007).

When the students’ answers from different universities were compared, the students from Moi University were most experienced at every level; half of them had discussed with an HIV/AIDS patient (58.4%), been in direct physical contact (48.1%), handled equipment (30.9%), discussed physical (65.2%) and emotional (73.4%) problems with the patients or their families (53.7%).

The students from Oulu (University of Oulu and Oulu University of Applied Sciences) had only little contact with HIV/AIDS patients. The students from Helsinki had twice as much contact. About ten per cent (14.1%) had discussed and had physical contact (8.1%) with HIV/AIDS patients. Both differences between universities concerning experience-based knowledge in direct contact and discussion with HIV/AIDS patients showed statistical significance (p < 0.0001).

Connection between the experience-based knowledge and definition of HIV and AIDS

The connection between the correct definition of the concept HIV and AIDS and the amount of discussion and contact with HIV/AIDS patients showed statistical significance. If the students had never spoken with HIV/AIDS patients or been in direct contact with them, they defined more often HIV and AIDS incorrectly. (HIV/discussion p = 0.008, HIV/direct contact p = 0.015, AIDS/discussion p = 0.000, AIDS/direct contact p < 0.0001) (Fig. 7).
Sufficiency of knowledge about HIV/AIDS

Knowledge of physical health. The respondents estimated their knowledge concerning the physical health of HIV/AIDS patients in 53.2% to be insufficient or very insufficient. Close to forty per cent (37.5%) of the students had sufficient information and almost half of them (48.2%) had insufficient information. Four per cent of the respondents could not estimate the amount of their knowledge. The female students (56.0%) estimated their knowledge to be insufficient or very insufficient more often than male students (47.1%).

Knowledge of the emotional well-being. The situation concerning the knowledge of HIV/AIDS patient’s emotional well-being was worse. More than half of all the respondents (51.0%) reported their knowledge to be insufficient and 18.3% very insufficient. The differences between male and female students were not large. Ten per cent of the respondents could not tell their opinion.
Fig. 8. The number of knowledge and ability to get along with HIV/AIDS patients.

Table 8. Differences of the Finnish and Kenyan university students’ knowledge of physical health and emotional well-being.

<table>
<thead>
<tr>
<th>Knowledge of Physical health</th>
<th>Very sufficient n (%)</th>
<th>Sufficient n (%)</th>
<th>Insufficient n (%)</th>
<th>Very insufficient n (%)</th>
<th>I cannot tell n (%)</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUAS</td>
<td>3 (2.0)</td>
<td>44 (29.5)</td>
<td>82 (55.0)</td>
<td>11 (7.4)</td>
<td>9 (6.1)</td>
<td>149 (100)</td>
</tr>
<tr>
<td>Oulu</td>
<td>0</td>
<td>34 (29.8)</td>
<td>70 (61.4)</td>
<td>7 (6.2)</td>
<td>3 (2.6)</td>
<td>114 (100)</td>
</tr>
<tr>
<td>Helsinki</td>
<td>9 (6.0)</td>
<td>58 (38.9)</td>
<td>74 (49.7)</td>
<td>5 (3.4)</td>
<td>3 (2.0)</td>
<td>149 (100)</td>
</tr>
<tr>
<td>MOI</td>
<td>15 (13.5)</td>
<td>61 (55.0)</td>
<td>27 (24.3)</td>
<td>2 (1.8)</td>
<td>6 (5.4)</td>
<td>111 (100)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knowledge of Emotional well-being</th>
<th>Very sufficient n (%)</th>
<th>Sufficient n (%)</th>
<th>Insufficient n (%)</th>
<th>Very insufficient n (%)</th>
<th>I cannot tell n (%)</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUAS</td>
<td>2 (1.3)</td>
<td>16 (10.7)</td>
<td>79 (53.0)</td>
<td>32 (21.5)</td>
<td>20 (13.4)</td>
<td>149 (100)</td>
</tr>
<tr>
<td>Oulu</td>
<td>0</td>
<td>5 (4.4)</td>
<td>70 (61.9)</td>
<td>29 (25.7)</td>
<td>9 (8.0)</td>
<td>113 (100)</td>
</tr>
<tr>
<td>Helsinki</td>
<td>4 (2.7)</td>
<td>18 (12.1)</td>
<td>80 (53.7)</td>
<td>35 (23.5)</td>
<td>12 (8.1)</td>
<td>149 (100)</td>
</tr>
<tr>
<td>MOI</td>
<td>8 (7.1)</td>
<td>51 (45.5)</td>
<td>39 (34.8)</td>
<td>0</td>
<td>14 (12.5)</td>
<td>112 (100)</td>
</tr>
</tbody>
</table>

There were some differences between the students from different university. The students from Oulu University estimated their knowledge to be insufficient or very insufficient concerning both physical health (67.6%) and emotional life (87.6%) of HIV/AIDS patients (Table 8). None of them had very sufficient knowledge. Concerning the physical health of HIV/AIDS patients the respondents of the University of Helsinki estimated their knowledge to be more often sufficient or very sufficient (44.9%) than that of the other Finnish students.
As for the patients’ emotional life only 14.7% of the respondents at the University of Helsinki estimated their knowledge to be very sufficient or sufficient compared to other Finnish students. The respondents from Moi University had sufficient or very sufficient knowledge (68.5% physical health, 52.7% emotional life).

More than half of the respondents (52.8%) estimated their capacity to get along with HIV/AIDS patients to be good or very good. There was no statistically significant difference between either the universities or between the male and female students.

5.2.2 Feelings about HIV/AIDS and people with HIV/AIDS among Finnish and Kenyan university students

Positive/negative feelings about HIV/AIDS and/or contact with people with HIV/AIDS

Positive feelings. Most of the students had positive feelings (the affective component of an attitude) towards HIV/AIDS. The strongest positive feelings were such as “patients with HIV/AIDS have an equal right for care just like anyone else” (97.5%) or “if I had HIV/AIDS I would not be worried that I would be regarded homosexual” (86.1%). The students also reported that it was not unpleasant to meet HIV/AIDS patients (77.2%) and that they felt sympathy towards such patients (76.7%). In their opinion the high expenses of the HIV/AIDS patients’ care were not fair (73.3%). It did not bother them to continue their relationship with a friend with HIV/AIDS (77.9%).

The students also estimated that the HIV/AIDS patients are not insulting them morally (90.9%). Almost eighty per cent (77.9%) of the students reported that it was not difficult to continue a relationship with an acquaintance of theirs with HIV/AIDS and that they would not change their study institution if they had to study with HIV/AIDS patients in the same place (95.7%).

Female students (33.9%) had more positive feelings than the male students (27.6%) concerning the item “working with HIV/AIDS patients can be a rewarding experience” (p = 0.005). Also 35.4% of females and 26.4% of males felt that “homosexuals must be allowed to be in contact with anyone” (p < 0.0001).
The meaning of religion reported by the students did not have statistical significance with the main factors.

**Negative feelings.** As far as the negative feelings are concerned almost one fifth of the respondents felt it unpleasant to touch a person with HIV (18.9%). They also felt that “if a child shows homosexual features I would take him/her to psychiatric care” (20.0%). One third of the respondents (34.7%) told that “contact with HIV/AIDS patients is different from having contact with the healthy.” “In future HIV/AIDS will make my work prone to risks” (29.9%). About thirty per cent (27.0%) of the respondents estimated that it may not be rewarding to work with HIV/AIDS patients or that homosexuals must not be allowed to be in contact with anyone they would like to (25.8%).

More than half of the respondents did not want to have anything to do with the intravenous drug users (59.5%). A study friend with HIV/AIDS was felt bothersome in 66.5% of cases. A minority of the respondents regarded HIV/AIDS a punishment of God for immorality (33, 6.3%) and homosexual relationships (18, 3.4%). The respondents also reported that “homosexuals have got what they have deserved” (46, 8.7%).

**Cannot tell.** One fifth of the students answered “I cannot tell” to five items. The questions concerned a change in attitudes (18.9%) towards HIV/AIDS in general, the feelings concerning meeting HIV/AIDS patients (18.7%), working with HIV/AIDS patients (19.2%), feelings towards having HIV/AIDS patients around (25.7%) and feelings about touching an HIV/AIDS patient (24.4%).

**Differences in the feelings about HIV/AIDS and people living with HIV/AIDS**

Feelings (the affective components of attitudes) among the students at Moi University differ from those of the Finnish students. There were statistically significant results and differences concerning almost all of the items (Appendix 2).

The grouping of the variables of the feelings towards HIV/AIDS and people living with HIV/AIDS resulted in three main factors:

1. beliefs/prejudices against HIV/AIDS,
2. feelings concerning contact with HIV/AIDS patient and
3. sensations/emotions towards HIV/AIDS patients.
Beliefs and prejudices against HIV and AIDS

A comparison of the Finnish and Kenyan students’ feelings concerning beliefs and prejudices showed a difference between the universities and between the male and female students. The beliefs and prejudices of the students at Moi University were stronger and more negative than those of the other students. The Finnish female students disagreed or partly disagreed more often than the Finnish male students with the negative items of beliefs and prejudices. The difference between the male and the female students was statistically highly significant (p < 0.0001). The male students at Oulu University of Applied Sciences had more negative attitudes than the other Finnish male students (Fig. 9).

Fig. 9. Beliefs and prejudices of the male and female students against HIV and AIDS at the universities of OUAS, Oulu, Helsinki and MOI.

More than half of the students (59.5%) who had incorrect knowledge of HIV and two thirds of the students (67.6%) who had incorrect knowledge of AIDS disagreed with the item of beliefs and prejudices. The students who had incorrect knowledge had less beliefs and prejudices. The relationship between the incorrect
knowledge of HIV/AIDS and beliefs and prejudices was statistically significant (the incorrect knowledge of HIV, and the incorrect knowledge of AIDS).

When the Finnish and Kenyan students were compared with each other concerning their level of knowledge to the beliefs/prejudices the result showed that the level of knowledge (correct or incorrect definition of HIV/AIDS) did not have an effect on the level of their beliefs and prejudices (Fig. 10). The Finnish students who had defined HIV/AIDS correctly had as many beliefs/prejudices as the Finnish students who defined HIV/AIDS incorrectly. The situation was the same with the Kenyan students. The difference between the Finnish and Kenyan students was that the Finnish students had less beliefs and prejudices towards HIV/AIDS than did the Kenyan students. The Kenyan students had a high level of knowledge of HIV/AIDS; HIV was defined correctly in 86.5% of the cases (65.4% of the Finnish students) and AIDS in 92.8% of the cases (64.1% of the Finnish students). The difference was statistically significant, concerning the definition of HIV, \( p < 0.0001 \) and AIDS, \( p < 0.0001 \).
The beliefs and prejudices of the respondents included the items towards immorality and homosexuality. The prejudices to homosexuals showed that one third (29.2%) of the respondents at Moi University agreed or mostly agreed that HIV/AIDS is a punishment by God for immorality (p < 0.0001). Fifteen per cent found it to be a punishment to the homosexuals. The attitude of the Kenyan students was (25.7%) that homosexuals have received what they have deserved (4.2% Finnish students). The Kenyan respondents (73.9%) disagreed with the item “Homosexuals must be allowed to be in contact with anyone” (14.3% Finnish students, p < 0.0001).
Feelings about contacting HIV/AIDS patients

The male students at the universities of Oulu were more negative in their attitudes describing their feelings compared with the other students’ attitudes. More than two thirds of the female respondents (67.6%) disagreed or partly disagreed with the negative feelings of having contact with HIV/AIDS patients. Half of the male students (51.8%) disagreed with this item. The result is statistically significant (p = 0.002). The correct or incorrect knowledge about HIV/AIDS did not have a statistically significant connection to the students’ feelings concerning contact with HIV/AIDS patients.

Fig. 11. Feelings of the male and female students of HIV/AIDS patients at the universities of Oulu, Helsinki, at OUAS and Moi University.

The feelings of the respondents included the feelings of discomfort and inconvenience to touch, to have contact with or to meet HIV/AIDS patients. More than ten per cent (14.2%) of the respondents thought it unpleasant to touch a person with HIV (p < 0.0001). The Kenyan students reported that “Contact with HIV/AIDS patients is different compared to that with the healthy” (37.8% agreed,
p < 0.0001). Seventy per cent (72.6%) of the Kenyan students disagreed with the item “It is unpleasant to meet HIV/AIDS patients”, whereas 44.8% of the Finnish students did so (p < 0.0001).

**Feelings of HIV and AIDS**

The answers in the open questions concerning feelings, included feelings, emotions and beliefs. The reasons for the feelings were also expressed in some of the answers.

**Feelings of HIV**

Almost one third of the respondents (28.4%) reported that they regarded HIV frightening, dangerous and a mess because “it leads to death.” HIV was also regarded scaring because there is no healing cure or medication. The students described HIV for instance: “I am afraid that I will get it sometimes” or “Fearful because you can be a carrier” or “The first stage of a killing disease” or “It is a dangerous virus which will sweep away this generation.” Some of them also told that they hate HIV and felt it repugnant.

Twenty per cent (20.4%) of the students felt HIV to be distant and neutral as most of the students did not have any experience of HIV or people living with HIV. The respondents told: “I have not thought about it” or “It is a disease among other diseases” or “I cannot say, quite strange the whole thing” or “I don’t know anyone with HIV” or “I know only the statistics and the general facts.” They also described HIV to be a virus which anyone can have. It does not choose its victims.

HIV was felt negative by 17.7% of the students because it causes big and serious problems. They regarded HIV a disease they would not like to have themselves or any of their friends. They felt sad because “it causes misery and suffering.” The respondents described it to be “A terrible sickness, the whole world is suffering of” or “It is a terrorist and seems to be everywhere” or “Negative feelings since they will have to suffer in life before death and some of them will not achieve their goals.”

The students (12.8%) had also positive feelings towards HIV. They felt sympathy. They wanted to know more and give more information about HIV. The respondents were confident that a cure and a healing medication would be found. “It awakens my desire to help those who have been infected and to distribute more information in order to prevent the dissemination of HIV. I feel deep
sympathy for the HIV positives. The situation in Africa is so bad that one just cannot understand it.”

HIV was felt depressing and risky by 7.8% of the students because HIV in itself is a problem and causes global problems. The students felt it to be also an economic problem “It’s going to have a negative impulse on economic production in the near future.” The students described HIV in the following ways: “It is very traumatising to the individual, family, community and the country at large since it reduces the immunity and thus the AIDS infection” and “It has been used as a biological weapon. Mostly it has affected the under-developed countries which at the same time are hiding and at the same time are not seriously affected to struggle to get cure for it.”

Differences between the feelings of the male and female students concerning HIV

The female students find HIV more frightening and distant than do the male students. More than one third of the female students (34.9%) and 27.7% of the male students felt frightened of HIV. The difference was statistically significant (p = 0.041). The age of the students did not have any statistically significant affect on the feelings of HIV. (Fig. 13).

![Fig. 12. The feelings of the male and female students concerning HIV.](image-url)
**Differences between universities**

Comparing the students in different universities, the respondents studying in the Finnish universities (34.2%) described HIV more often frightening and distant than the Kenyan students (27.4%). The Kenyan students reported HIV (7.5%) not so distant but they felt it a global problem (16.0%) more often than the Finnish university students (distant 28.2%, global problem 6.8%). The difference was statistically highly significant ($p < 0.0001$).

![Diagram](image.png)

**Fig. 13. The feelings of the students in the different universities.**

**Feelings of AIDS**

Almost forty per cent of the students (37.9%) told that they find AIDS frightening and dangerous (Fig. 15). Because there is no healing cure it means death. The respondents described for instance the concepts as a scaring disease, awful, a killer disease, bad, more scary and serious than HIV and a disaster. They reported that they felt hate and sadness towards AIDS. “It is a dreadful disease that will wipe out a large population if no cure is found, it is a world disaster” and “Almost same as death” and “AIDS sounds so final, frightening.” “Fatal.”

The students (15.0%) described AIDS to be negative and regrettable but more of a problem of the society rather than their own. “My opinion is that AIDS and HIV have been developed by the nature to shelter against overpopulation when the middle-aged people are getting older. The capacity of the earth is not enough for all of us. I am not afraid of AIDS, I am more worried of the AIDS patients...
rather than paranoid of getting infected myself.” “AIDS is a silent epidemic because it is spreading so rapidly. AIDS has been described as the worst epidemic in the history of the world.” They wished that they or their relatives or friends would never have it themselves.

About ten per cent of the students (11.0%) had positive and empathic feelings towards AIDS and the AIDS patients. They reported of being open-minded and they trust in prevention: “Positive feelings, I know the risks and also know how to live minimizing the risks.” They relied on a better medication to be available in the future, “I feel that one day the treatment will be found.” The students thought that there should be more information available about AIDS, how to prevent it and information so that the people would not be so afraid of those who are infected.

Five per cent of the respondents felt that there is a risk to get AIDS. It depends on everyone’s own behaviour or you may get it because of your profession. Some of the students felt that AIDS is “some sort of a punishment of God for their immorality.” 17.9% of the students did not reply to the question.

Differences in emotions between the male and female students concerning AIDS

Comparing the male and female students the male students had less positive and empathic (11.5%) as well as neutral and distant (13.0%) feelings than the female students (positive and empathic 14.3%, neutral and distant 17.3%). The male students (12.2%) found AIDS more often risky than did the female respondents (3.3%). The difference was statistically significant, \( p = 0.009 \).
Differences between the universities

The students in the Finnish universities described their emotions on AIDS almost the same way as the Kenyan students (Fig. 16). The Finnish students (19.8%) had more often neutral and distant feelings towards AIDS than did the Kenyan students (3.9%). Over half of the Kenyan students (54.4%) found AIDS frightening and dangerous. More than forty per cent (43.6%) of the Finnish respondents had the same kind of emotions ($p = 0.005$).

Fig. 14. The feelings of the male and female students on AIDS.
More than two thirds of the students (69.2%) did not regard their future job stressful because of HIV/AIDS patients. Almost the same number of respondents (61.5%) felt their job to be in the future low risky or very low risky. The students of the Finnish universities did not differ from each other concerning their feelings of the risk in a job (21.5% of the students at OUAS, 11.9% at Oulu University, 17.8% in Helsinki). The students at Moi University (69.9%) estimated their future job risky and very risky more often than the Finnish students (p < 0.0001).
Female respondents had more positive attitudes than the males. They (72.3%) felt their future jobs less stressful than did the male students (62.8%) \( (p = 0.029) \). One quarter of the female students (25.9%) and 14.6% of the male students felt very comfortable with the family and friends of the HIV/AIDS patients \( (p = 0.001) \).

**Jobs for the HIV/AIDS patients in the service sector**

**Table 9. Opinions of the students concerning the possible jobs for HIV/AIDS patients.**

<table>
<thead>
<tr>
<th>Opinions</th>
<th>Elementary School</th>
<th>University</th>
<th>Service sector</th>
<th>Service sector direct contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>All jobs suite well</td>
<td>280</td>
<td>53.5</td>
<td>372</td>
<td>71.3</td>
</tr>
<tr>
<td>In certain circumstances</td>
<td>163</td>
<td>31.2</td>
<td>105</td>
<td>20.1</td>
</tr>
<tr>
<td>Only in exceptional cases</td>
<td>33</td>
<td>6.3</td>
<td>21</td>
<td>4.0</td>
</tr>
<tr>
<td>In no case</td>
<td>23</td>
<td>4.4</td>
<td>9</td>
<td>1.7</td>
</tr>
<tr>
<td>Cannot tell</td>
<td>24</td>
<td>4.6</td>
<td>15</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>523</td>
<td>100</td>
<td>522</td>
<td>100</td>
</tr>
</tbody>
</table>

The students responded that the most suitable jobs for HIV/AIDS positive individuals were jobs in the service sector (81.0%) \( (Table 9) \). In their opinion such jobs were more suitable than jobs in an elementary school, university or in the service sector but not where an HIV/AIDS patient would be in a direct contact with a client. Jobs which presumed a close connection with HIV/AIDS positives...
were not recommendable. The results showed a statistically significant difference (p = 0.003) in comparison between male and female students concerning jobs in the service sector. Female students (85.1%) estimated such jobs suitable for HIV/AIDS patients more often than did the male students (72.5%).

In comparison between the meaning of religion and the working possibilities in the service sector the majority of the students (81.0%) said that a job in the service sector would be suitable regardless of how meaningful they felt their religion (p = 0.007).

**Jobs in education**

The students at Moi University (68.1%) and at Helsinki University (67.1%) regarded an elementary school a suitable working place for the HIV/AIDS positives. Ten per cent (10.1%) of the students of Oulu University of Applied Sciences regarded it unsuitable in any case. The students’ attitudes concerning working as a university lecturer were similar. They agreed that it was a good solution for a job or at least in certain circumstances.

**Jobs with a closer contact**

They agreed that working in the service sector with no close contact with the clients provide good working places for HIV/AIDS positives (for instance working in a bank, shop or in a travel agency). The students were more critical in their responses if the job required a closer contact with a client for instance as a barber or a public health nurse.

A job which presumed a closer contact in the public or private service sector made the attitudes less positive. The attitudes of the students at the universities of Oulu and Helsinki were more allowing and they agreed to people living with HIV/AIDS working in certain circumstances in jobs requiring a closer contact. Forty per cent (38.9%) of the respondents at Moi University would not allow it in any case (22.6% of the Finnish students, p < 0.0001).
Fig. 17. The feelings of the students concerning a job involving close contact with an HIV/AIDS positive person.

When considering jobs which require close contact with a client, religion had more influence on the respondents’ opinion. Almost half of those who found religion very meaningful (48.2%) responded that a person with HIV/AIDS should be allowed to work also in close contact with a client (p < 0.0001).

Description of suitable jobs

Respondents were asked to describe openly their opinion concerning the best possible job for an HIV/AIDS patient. The respondents identified four main categories with certain features: 1) the HIV positives or AIDS patients may work where they like; 2) all the jobs if there is no risk of infecting others or get infected; 3) the work does not include a possibility of close contact with other people or with sharp things; and 4) jobs in the service sector with not so big stress.

Table 10. Jobs that the respondents regarded suitable for people with HIV/AIDS.

<table>
<thead>
<tr>
<th>Requirements of suitable jobs</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>All jobs</td>
<td>98</td>
</tr>
<tr>
<td>No danger of infection</td>
<td>84</td>
</tr>
<tr>
<td>No direct contact/no sharp things</td>
<td>95</td>
</tr>
<tr>
<td>Service/not stressing</td>
<td>42</td>
</tr>
<tr>
<td>Something else</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>146</td>
</tr>
</tbody>
</table>
One third (29.7%) of the female students reported that all the jobs are suitable for the HIV/AIDS positives. One third of the male students thought of the jobs with no danger of infection. The result was statistically significant (p = 0.011).

More than one third of the Finnish students (33.6%) reported that the most suitable job for the HIV/AIDS positive would be a job with no danger of infection. Nearly half of the Kenyan students (45.9%) suggested a job in a service sector was a job with no stress. The result was statistical significant (p < 0.0001).

5.2.3 Sensations and emotions towards the HIV/AIDS patients

The attitudes describing sensations and emotions towards the HIV/AIDS patients were in general more negative than beliefs/prejudices and feelings. Particularly the male students at the Oulu University of Applied Sciences and at the University of Oulu were more negative concerning the sensations and emotions of the HIV/AIDS patients (Fig. 12).

The emotions and sensations of the respondents included for instance items concerning intravenous drug users, the HIV/AIDS patients’ rights for care and the high expenses of the treatment of HIV/AIDS patients. Regarding attitudes towards intravenous drugs, the Finnish students (36.3%) did not want to have anything to do with intravenous drug users compared to the Kenyan students.
(28.6%) \((p < 0.0001)\). The Kenyan respondents (67.6%) disagreed more often than did the Finnish students (46.2%) \((p < 0.0001)\) with the item “Intravenous drug users with HIV/AIDS should be admitted for care only after other patients.”

5.2.4 Health/Sexual behaviour and prevention of Finnish and Kenyan university students against HIV/AIDS

Risky health behaviour

*Smoking and snuffing.* Smoking was not very common. Almost 70 percent of the students responded that last month they had not smoked at all. Male students smoked more often (35.1%) than female students (27.4%). About every tenth student (10.1%) was smoking daily (Fig. 19). Most of the non-smoking students (79.5%) came from the countryside. 86.7% of the students who reported religion to be very meaningful did not smoke at all.

Comparing different universities, 28.1% of the students at the University of Oulu and 33.5% of the students in the University of Helsinki were smoking. Smoking was most common at the Oulu University of Applied Sciences (43.6%). One fifth (20.1%) of the smokers were smoking daily. More than ninety percent (92.0%) of the respondents of Moi University reported that they did not smoke at all. The difference is statistically highly significant \((p < 0.0001)\).
Only 25 (4.8%) students responded that they were snuffing and 5 (1.0%) of them did so daily. Most of them were from the Finnish universities (23), eighteen being males.

Use of alcohol and drugs. More students were dinking alcohol (34.8%) than were smoking (29.8). More than twenty percent of the respondents (23.6%) reported that they had used alcohol when having sexual intercourse during the previous month (Fig. 20). Religion had no significant correlation with the students’ use of alcohol. There were no big differences between the male (28.1%) and the female (21.6%) students.
Fig. 20. Students’ use of alcohol at Oulu University, OUAS, Helsinki and Moi University during intercourse in the previous month.

Only a few students (4.5%) reported that they had used drugs with sex during the previous month. Eight of them were female students. When the students were asked in an open question about the drugs they had tried or used in general some of the students had used more than three different kinds of drugs. The most common of the named drugs were cannabis, hashish and marijuana (16.5%). The female students (17.0%) reported that they used amphetamine, ecstasy and LSD more often than the male students (8.7%). One fifth of the male students (20.3%) informed that they had used cannabis, hashish and marijuana while 14.5% among the female students had done so. The difference is statistically significant (p < 0.0001). There were only a few other drugs called mira (used by 6 students), changa (4 students) and THC (1 student) being common in Kenya.

There was a relationship between the use of alcohol and smoking and the use of drugs and smoking. Most of the students who were not smoking did not use alcohol either (74.1%). Half of those students who were daily smokers reported the use of alcohol sometimes (49.1%). Most of the students who did not smoke at all did not use drugs either (60.5%) but almost half of the daily smokers had used also cannabis, hashish or marijuana (43.4%). The result was not statistically
significant because the number of respondents who were smoking daily was so low (3.4%).

Sexual behaviour

Sexual behaviour included the assessment of the students’ sexual activity, the number of sexual partners and prevention both against pregnancy and sexual diseases and the number of HIV tested.

Sexual activity. Female students were more active in their sexual behaviour than the male students. Forty percent of the female (40.6%) and 30.8% of the male respondents had been in sexual relationship once a week or they had had sex several times a week during the previous month. The students who had sexual contacts came more often from a city (63.2%) than from the countryside (p = 0.004). The students (65.5%) who reported that religion was very meaningful had no sexual relationships (p < 0.0001).

One fifth of the students (21.3%) had sex two to three times a week or more. The most active students were in the University of Helsinki. About one third of the students had sex from two to three times a week or more. Comparing the Finnish universities, 42.1% of the respondents at the University of Oulu had had no sex during the previous month. There was a statistically significant difference (p < 0.0001) between the students’ sexual activity at the different universities.
Comparing the marital status of the students to their sexual activity, 75.3% of the students who had a cohabitation relationship were sexually active once or several times a week. Also, 66.1% of the respondents who had a permanent relationship but were not living together were more active having sex once or several times a week compared to the married (44.7%) or engaged (53.6%) students. The respondents who described their state of life as relationship oriented or with positive feelings were sexually more active than the other students (Fig. 22). More than half of the relationship oriented respondents (57.2%) and 43.3% of the students with positive feelings had sex once or several times a week. More than fifty percent of the students (57.1%) with negative state of life had had no sexual experiences during the previous month (p = 0.005).

It was not very common to have anal sex. Only 4.7% (24) of the students had been in anal sex contact during the previous month.

Fig. 22. The sexual activity of the students related to the described state of life.

Oral sex. More than half of the students (56.4%) had not had oral sex contacts during the previous month. There was no significant difference between the male and female students. Smoking or use of alcohol had no influence on the frequency of oral sex. More than seventy percent of students in a cohabitational relationship (72.8%) had had oral sex compared to the married (38.3%) or the engaged (61.4%) couples or students with temporary (32.2%) and permanent relationship not living together (65.1%). The result showed a statistically significant difference
Oral sex behaviour was not common in Kenya. More than eighty per cent (81.8%) of the Kenyan students reported that they had not had oral sex contacts during the previous month ($p < 0.0001$).

The importance of religion was statistically significantly related to the oral sex behaviour ($p < 0.0001$). Those who reported religion to be very meaningful (38.9%) had not had oral sex at all during the previous month. Almost half of the students (48.5%) who reported religion to be rather meaningless had had oral sex three or four times during the previous month.

Only a few students (23, 4.5%) reported that they had used drugs when having sex during the previous month. Eight of them were female students.

The number of sex partners during the previous month. More than half of the respondents (57.5%) had one partner and 10 students (1.9%) had two partners. The students reported that 40.3% of them did not have any sexual relationships, 42.4% of the male and 41.1% of the female students. Smoking or use of alcohol had no impact on the number of sex partners. As many of the students who had one partner used prevention always or almost always (44.9%) as did so never or hardly ever (46.3%). The number of sex partners and the reported meaning of religion did not have any correlation.

Comparing different universities 59.5% of the respondents at Moi University informed that they had no sexual partner. Almost two thirds of the students (57.2%) at the universities of Oulu, Helsinki, at OUAS, and at MOI had one
partner. Over ten per cent (16.7%) of those who had one partner described their state of life as relationship oriented and 48.6% with positive feelings. In this regard there was no difference between the male and the female students. Six (10.9%) of the students who had temporary relationships had had two partners during the previous month.

**Prevention against pregnancy**

Two thirds (66.3%) of the students responded to the question on the prevention against pregnancy. More than half of the students (57.5%) used prevention themselves. They also informed that 47.9% of their partners used prevention, too. Eighty of the students and their partners did not use prevention at all. The respondents reported that during the previous month they had had 331 partners. The most frequently used prevention methods were condoms and pills. In the category of other prevention methods they mentioned methods such as interrupted sexual intercourse (3), sterilisation (1), prevention capsule (1), prevention ring (2), plaster (2), abstinence (1), safe days (3), being a homosexual (2) or a virgin (1) (Appendix 3).

*The reported prevention methods.* The most popular prevention method was the pill concerning the Finnish students. More than thirty per cent of the students at the Finnish universities used pills (31.5% of the students at OUAS, 25.9% at Oulu University, 38.9% of the students at Helsinki University). In this study two thirds of the students were female (67.2%). Forty per cent (40.4%) of the Kenyan students used condoms. The pills were used for preventing pregnancy and the condoms against pregnancy and sexual diseases. More than ten per cent of the respondents (13.2%) and 12.0% of their partners did not use any prevention methods (Appendix 3). One third of the first year students (35.3% of the male students and 29.6% of the female students) had no relationships at the moment.
Prevention against sexual diseases

Sexual diseases. Respondents reported that 48 of them (9.3%) had had a sexual disease once while seven of the respondents had had a sexual disease twice and three students more often than that (Table 11). There was no difference there whether they were studying in Oulu, Helsinki or in Eldoret, Kenya. The number of male and female students was equal. The students (19.4%) who described their state of life as future oriented had had a sexual disease more often than the other students (relationship oriented 7.9%, positive feelings 6.9%, negative feelings 5.4%, study focused 7.1%) (p = 0.027). Two of the students were HIV positive (one student from Kenya and the other from Finland).

Table 11. The number of students who contracted sexual disease once, twice or more than twice (n = 525).

<table>
<thead>
<tr>
<th>Sexual disease</th>
<th>Once</th>
<th>%</th>
<th>Twice</th>
<th>%</th>
<th>More often</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>2</td>
<td>0.4</td>
<td>2</td>
<td>0.4</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>8</td>
<td>1.5</td>
<td>2</td>
<td>0.4</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>15</td>
<td>2.8</td>
<td>2</td>
<td>0.4</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Syphilis</td>
<td>3</td>
<td>0.6</td>
<td>2</td>
<td>0.4</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Genital herpes</td>
<td>3</td>
<td>0.6</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Condyloma virus</td>
<td>15</td>
<td>2.8</td>
<td>1</td>
<td>0.2</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Something else</td>
<td>2</td>
<td>0.4</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>9.3</td>
<td>7</td>
<td>1.4</td>
<td>3</td>
<td>0.6</td>
</tr>
</tbody>
</table>
Prevention against the sexual diseases. Almost half of the students (43.8%) informed that they always or almost always used prevention against sexual diseases. 18.9% of them responded that they never used prevention. One third of the male (32.4%) respondents reported that they always use prevention. It was more frequently than the female students (26.9%). One fifth of the students (20.3%) told they had no sexual relationship. More than thirty per cent (34.9%) of the students in the University of Helsinki always used prevention against sex diseases while 28.4% of the students at the Oulu University of Applied Sciences informed that they had never used prevention. The difference between the Finnish and the Kenyan students was statistically significant (p < 0.0001). There was no statistically significant difference between the Finnish male and female students compared to the Kenyan students.

![Fig. 25. The use of prevention by the Finnish and Kenyan students.](image)

More than thirty per cent (33.9%) of the relationship focused students never used prevention (p = 0.004). Half of the students who never used prevention were married (51.1%). The importance of religion influenced the use of prevention. More than fifty per cent (56.6%) of the respondents who reported religion to be very meaningful had no sexual relationships. Almost half of the students (45.7%) reporting religion to be rather meaningless hardly ever used prevention against sexual diseases. The difference was statistically significant (p < 0.0001).
Nearly thirty per cent (28.4%) of the students who reported that they never used prevention studied at the Oulu University of Applied sciences. Twenty per cent (21.9%) of them were female students while 13.5% of them were male. Forty per cent (41.2%) of them were at the age of 30 or more. Half of these respondents (50.0%) were married and 14.3% were divorced and 3.6% had temporary relationships. These respondents described their state of life as relationship oriented in 33.3% of cases.

**HIV-test.** Two of the students of 20–24 years of age were HIV positive. Almost one fifth of the respondents (19.8%) told that they did not know whether they were HIV positive or not. More than half of them (52.9%) studied at Moi University. Almost half of the HIV tested individuals (47.7%) had a sexual disease (ten of them condyloma virus, eight chlamydia and three syphilis) \( (p = 0.002) \). Sixteen of the tested students were married or engaged (32.0%) and 52.6% had temporary relationships \( (p = 0.005) \).

One quarter of the students (27.3%) had been tested for HIV, 28.1% of male and 27.0% of the female students. One third of the tested students studied at the University of Helsinki (33.6%) and about ten per cent of the students (12.3%) at the University of Oulu \( (p < 0.0001) \).

There was no statistical significant correlation between the correct knowledge of HIV and HIV test but there was found statistically significant correlation \( (p = 0.025) \) between the correct knowledge of AIDS and HIV test. One third of
the students (32.3%) who had the correct knowledge of AIDS were tested while 24.0% of the respondents with the incorrect information were tested.

Table 12. The number of HIV tested students.

<table>
<thead>
<tr>
<th>Country / University</th>
<th>HIV-test</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>N %</td>
<td>No</td>
<td>N %</td>
</tr>
<tr>
<td>Finland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUAS</td>
<td></td>
<td>31</td>
<td>20.8</td>
<td>118</td>
<td>79.2</td>
</tr>
<tr>
<td>Oulu</td>
<td></td>
<td>14</td>
<td>12.3</td>
<td>100</td>
<td>87.7</td>
</tr>
<tr>
<td>Helsinki</td>
<td></td>
<td>50</td>
<td>33.6</td>
<td>99</td>
<td>66.4</td>
</tr>
<tr>
<td>Kenya</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOI</td>
<td></td>
<td>49</td>
<td>43.8</td>
<td>63</td>
<td>56.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>144</td>
<td>27.5</td>
<td>380</td>
<td>72.5</td>
</tr>
</tbody>
</table>

The reason for having a test was in most cases security (38.1%). The other reasons were unsafe sex, pregnancy, blood spending or another reason such as starting a new relationship, having been raped or curiosity. 29 of the Finnish tested students (29.9%) had had themselves tested because of unsafe sex. Security was the most common reason for the Kenyan students (81.4%, 35) to be tested. They “just wanted to be sure” of their status (p < 0.0001). Compared to the Finnish universities, one third of the students (33.6%) at the university of Helsinki had been tested. The difference was statistically highly significant (p < 0.0001).

Some of the reasons for neglecting the test were the following: no reason to go for a test, they had used prevention and they did not have any temporary relationships. The students also reported that they had not had time and it had not occurred to them to have a test. They also reported that they relied on their partner and on themselves. Seventeen of the students reported that they did not dare to undergo the test or they were afraid of having the test. Half of the respondents who became tested used always or almost always prevention against sexual diseases.
Almost one fifth (19%) of the students responded that they intended to get tested because of security, awareness, the requirement of a job or a school or temporary relationships. More than seventy per cent (73.0%) of the students did not have any intention to go for the test. The most common reason was that the test was regarded unnecessary. The respondents reported that they do not have temporary relationships, they had not been in that kind of situations or their behaviour was not risky. Eight students reported that it was too dangerous to have a test.

5.2.5 Finnish and Kenyan students’ knowledge of and feelings about HIV/AIDS related to prevention

The students’ correct and incorrect knowledge was compared to the frequency of the reported prevention against sexual diseases. No statistically significant correlation was found between the knowledge and the prevention used.
Fig. 28. Students’ knowledge of HIV compared to the frequency of prevention against sexual diseases.

Fig. 29. Students’ knowledge of AIDS compared to the frequency of prevention against sexual diseases.

It was almost the same number of students who reported to use prevention always or almost always identified both HIV correctly (43.4%) and incorrectly (45.7%). The situation concerning AIDS was similar. The students who used prevention always or almost always identified AIDS correctly in 39.2% of the cases and incorrectly in 48.6% of the cases.
In order to find the connection between the attitudes and the risky sexual behaviour, the students’ attitudes of beliefs/prejudices and feelings were compared with the frequency of prevention. The Finnish students had less prejudices and beliefs against HIV/AIDS compared to the Kenyan students. The Finnish students’ attitudes concerning beliefs and prejudices were more often weak than strong towards HIV/AIDS. Fifty per cent of them reported to use prevention always or almost always. More than thirty per cent (31.8%) of the Finnish students with weak attitudes of beliefs/prejudices responded that they never or hardly ever used any prevention.

More than fifty per cent (53.3%) of the Kenyan students with moderate attitudes related to beliefs/prejudices against HIV/AIDS reported that they always used prevention. Almost the same number of the Kenyan students with strong prejudices used prevention always/almost always or occasionally. One third of the Kenyan students who had no sexual relationships had strong or very strong attitudes towards HIV and AIDS.
Fig. 31. Attitudes of the Finnish and Kenyan students concerning feelings towards HIV/AIDS patients compared with the frequency of prevention against sexual diseases.

The attitudes concerning the students’ feelings towards HIV/AIDS patients were compared with the frequency of prevention. The Finnish students who used prevention always/almost always had strong feelings towards HIV/AIDS patients. Students who had mild feelings towards HIV/AIDS patients also never used prevention or almost never in 63.1% of the cases. The feelings of being in contact with or touching an HIV/AIDS patient did not have a significant influence on the use of prevention.
6 Discussion

6.1 Study population

The study population consists of 525 students (172 male and 352 female). Half of the students were studying in the north of Finland, 149 students at Oulu University of Applied Sciences and 114 students at the University of Oulu. 149 students came from the University of Helsinki in the south of Finland and 113 students were studying at the University of MOI in Kenya. The age range was between seventeen and forty nine years. One third of the students were male. The response rate was 87.5%.

These university students were selected to act as the study population because they already had sexual experience, knowledge and thoughts concerning global problems such as HIV/AIDS. One day they will be parents and also may act as educators, councillors, etc. for the younger generations.

This is a comparative research where the attitudes (knowledge, feelings and behaviour of Finnish and Kenyan university students towards HIV/AIDS were compared. The comparison was carried out in Finland between students of the universities of Oulu, Oulu Applied Sciences and Helsinki, one in the south and the other in the north of Finland. The statistics of HIV and AIDS are much higher in southern Finland (1628 HIV positives) than in the Oulu region (80 HIV positives) (KY). The Kenyan students have a lot of knowledge about HIV/AIDS both on the personal level and also based on experience. The situation in Kenya regarding HIV/AIDS has been traumatic. There are more than one million orphans because of AIDS (National AIDS Control Council 2005). In the present study population there are two HIV positive students.

As for personal beliefs and ideology more than half of the respondents thought that religion was very or somewhat meaningful to them. The Kenyan students thought they were more religious than the other students did. The students of the University of Helsinki reported religion to be more often meaningless than did the other Finnish students.

With regard to their marital status or sexual relationships one fifth of the students were married or engaged. One third of the male students (35.3%) had no sexual relationship. Similar results concerning the marital status were presented in the study of Salonen (2003). More than twenty per cent (24%) of the Finnish female and 16% of the male first year university students were married or
cohabiting. In Kenya open relationship was not common. In this study the Kenyan respondents had more often permanent relationships (married and engaged) than did the Finnish students.

Concerning the state of their present life nearly half of the students (45%) described it with positive feelings. The students felt positive because their life was satisfying, good, comfortable, happy and stress free. The Kenyan students described their situation of life as positive in 58.0% of the cases and negative in 28.0% of the responses. The negative state of life was caused by stress, frustrations and difficulties. They also felt their life boring, lonely and risky. According to Kunttu (2004) the Finnish physically healthy students had several symptoms. More than twenty per cent (26%) of male and 41% of female university students had at least one symptom a day in 2000. A lot of stress felt 22% of male students and 28% of female students. Four per cent of the Finnish university students felt themselves lonely.

6.2 The attitudes of Finnish and Kenyan students’ towards HIV/AIDS

6.2.1 Knowledge of HIV and AIDS

The definition of the concepts of HIV/AIDS described the knowledge and awareness of the students concerning the infection and the disease. In this study the Finnish and Kenyan students had a good level of knowledge concerning HIV and AIDS in general. The result was in contrast with some of the previous studies (Muinonen et al. 2002, Ganczak et al. 2007, Avina & O’Connell 2006). The respondents identified the concept of HIV correctly (virus, infection) in 70% of the responses. AIDS was defined correctly by 70.4% of the respondents. The results were similar to the previous studies concerning the knowledge of the Finnish adolescents (Pötsönen & Kontula 1999), nursing staff (Suominen et. al) and German nursing students (Lohmann et al. 2000, Bektas & Kulakac 2007).

In this study the awareness of HIV/AIDS was found somewhat higher compared to the responses of the Finnish university students (62%) in 1999 (Serlo & Aavarinne). The students at the University of Helsinki identified HIV to be a virus and AIDS to be a disease or sickness more often than did the other Finnish students. The Kenyan students recognised the term AIDS correctly but they all could not explain or define the concept.
Although in this study the students had plenty of information sources they reported that they needed more information both concerning the physical health and the emotional well-being of the HIV/AIDS patients. Particularly the respondents at Oulu University of Applied Sciences and at the University of Oulu reported that they would need more knowledge concerning the physical and emotional well-being of the HIV/AIDS patients. The need for more knowledge has also been reported in other studies (Serlo & Aavarinne 1999, Avina & O’Connell 2006). The lack of information was reported concerning prevention possibilities (Alberg et al. 2001, Yoo et al. 2005) and risk behaviour (Eriksson et al. 1997). In the study of Eriksson et al. (1997) the Swedish and Kenyan teenagers’ overall knowledge of HIV/AIDS was on a good level but there was a lack of knowledge for instance concerning the awareness of the risk behaviour. In the study of Ahlberg et.al (2001) the largest differences between the Swedish and the Kenyan young people were found in the level of knowledge of the matters of sexuality and the ability to discuss these matters.

Most of the information had been obtained from the TV, campaigns, newspapers, and the information packages. The television was found to be the most important information source of HIV/AIDS in several studies (Pötsönen & Kontula 1999, Yoo et al. 2005, Serlo & Aavarinne 1999). The Kenyan students more often than the Finnish students named the radio and educational sessions as their information sources.

In this study the family members and relatives had a very small role in informing the students about HIV/AIDS both in Finland and in Kenya. More often for the male students than for the female students the newspapers were the information source concerning the dissemination, cause, risk group, cure or the prevention of HIV/AIDS. The role of the health care professionals was very small. Yet, public health nurses were more often the information source for the female students than for the male respondents. There was a recommendation in the study of Muinonen et al. (2002) that schools and school nurses should take a bigger role in the sexual health education. Different results were reported in the study of Ganczak et al. (2007). In that study the university students of the United Arab Emirates named books, media and the health care professionals as the most important information sources. The study of Yoo et al. (2005) on Korean adolescents reported that 94% indicated a need of receiving prevention education in the future. The respondents identified TV (52.5%) and school classes (32.1%) as the two main sources of information. Only a few referred to their parents (1.3%) as a source of information.
In this study the Finnish students had very few experiences concerning HIV/AIDS or people living with HIV or AIDS. If the students had never spoken with the HIV/AIDS patients or been in direct contact with them, they defined the concepts of HIV and AIDS incorrectly. The experience of the HIV/AIDS patients increased the level of information of German nursing students according to the study of Lohmann et al. (2000) as well.

### 6.2.2 The feelings of Finnish and Kenyan students towards HIV/AIDS and people with HIV/AIDS

In general the feelings of the respondents towards HIV/AIDS were positive. The most negative attitudes were found towards homosexuality and intravenous drug users. These results seem to be similar to the findings of the study of Serlo & Aavarinne in 1999. In this study the students of the University of Helsinki were more allowing and more positive in their feelings than were the students in the other Finnish universities. The students of Oulu University of Applied Sciences felt less sympathy towards the HIV/AIDS patients than did the other Finnish students. In general, the female students had more positive feelings than the male students towards HIV/AIDS and homosexuals. The feeling of sympathy and a minority feeling of homophobia was also found in the studies of Pötsönen & Kontula 1999, Peate et al. 2002 and Röndahl et al. 2003.

The beliefs and prejudices concerning HIV/AIDS and people living with HIV/AIDS of the students at Moi University were stronger and more negative than those of the other students. The beliefs and prejudices included items such as “HIV/AIDS is a punishment of God” or “HIV/AIDS is a punishment of God for the homosexuals” and “If I become aware of an acquaintance of mine having HIV/AIDS it would make it difficult to continue my relationships with him/her.” The results were similar with the studies of Peate et al. (2002). In that study older age and reluctance to care for AIDS patients were associated with a high level of homophobic attitude.

The level of knowledge did not have an effect on the level of their beliefs and prejudices. The Finnish students who had defined HIV/AIDS correctly had as many beliefs/prejudices as the Finnish students who defined HIV/AIDS incorrectly. The situation was the same with the Kenyan students. The result was surprising and opposite to the study of the German nursing students who had a high level of AIDS knowledge. They tended to have less negative attitudes and homophobia than those with a low level of knowledge (Lohmann et al. 2000).
The reason for the result concerning the Finnish students may have been the students’ few concrete experiences and contacts with individuals with HIV/AIDS.

The male students’ feelings about contacting HIV/AIDS patients at the universities of Oulu were more negative compared to the other students. The feelings included the items of discomfort and inconvenience when touching, having contact or meeting HIV/AIDS patients. In this study the correct or incorrect knowledge of HIV/AIDS did not correlate with the students’ feelings about contacting HIV/AIDS patients. Similar results were found in the study of nearly half of the students at the Turkish high school expressed discomfort to contact people with HIV/AIDS. Negative attitudes and discrimination were prevalent.

Fear was found in some of the studies. In the United Arab Emirates the university students felt fear and intolerant attitudes towards people living with HIV (Ganczak 2007). The British medical students felt fear of treating HIV/AIDS patients (Parker & Bhugra 2000) and needle stick injuries appeared to be the main source of fear among the South-African nurses in the study of Ncama and Uys (2003) and contagion in the study of McCann & Sharkey 1998. Fear of HIV infection, futility to provide care for HIV patients was felt by the physicians and nurses in the study of Olley (2003). Also the nursing and midwifery students in Ethiopia reported fears of occupational exposures to HIV/AIDS (Aga & Mekonnen 2004). Fear of HIV/AIDS was also reported in the results of Olley et al. (2003).

In this study one third of the students in the Finnish universities described HIV more often frightening and distant than did the Kenyan students. The Kenyan students reported HIV not to be so distant but they felt it to be a global problem more often than the Finnish university students. Over half of the Kenyan students found AIDS frightening and dangerous. More than forty per cent of the Finnish respondents had the same kind of feelings.

The male students at the universities of Oulu were more negative in their sensations and emotions compared to the other students. The emotions and sensations of the respondents included for instance items concerning intravenous drug users, the HIV/AIDS patients’ rights for care and the high expenses of the treatment of HIV/AIDS patients.

The students found the most suitable jobs for HIV/AIDS positive individuals were jobs to be in the service sector (80.6%). In their opinion such jobs were more suitable than jobs in an elementary school, university or in the service sector but not where an HIV/AIDS patient would be in a direct contact with a client.
Jobs which presumed a close connection with the HIV/AIDS positives were not recommendable. Female students estimated such jobs suitable for HIV/AIDS patients more often than did the male students. In the study of Pötsönen and Kontula (1999) approximately half of the respondents would not allow infected children to go to school with other children or work as teachers. The study by Wody (2005) in Nigeria concerned the secondary school students’ attitudes towards HIV/AIDS. The students’ median age was 19 years. They believed that an infected teacher or a student should not be allowed to continue teaching or attending school.

6.2.3 Risky health/sexual behaviour and prevention against HIV-infection

Risky health behaviour

Smoking is considered to be the most addictive substance of all and a stepping stone to other substances, including narcotics. It almost always promotes other drug use. In a five-year-long follow-up study of Salonen (2003) smoking seemed to decrease and cannabis seemed to be an increasing problem among both the first-year and the fifth-year university students. More than half of the heavy smokers (56.1%) reported some cannabis use in their fifth study year. Cannabis was found to be the most common initial substance in the progression of narcotics abuse. The results also showed a strong relationship between smoking and the use of alcohol. Almost one third (31%) of the heavy smoking male students and 17% of the heavy smoking female students were also heavy drinkers. According to Kunttu (2004) university students who were heavy drinkers were also smokers and tried or used drugs more than other students.

In this study the results indicated that almost 70 per cent of the students replied that they had not smoked at all during the last month and 92.0% of the Kenyan students were non-smokers. More than sixty per cent of the students (64.9%) never drank alcohol. There were no large differences in the use of alcohol between the male and the female students. More than ten per cent of the respondents reported that they had used drugs. The female students had used amphetamine, ecstasy and LSD more often than the male students. One fifth of the male respondents informed that they had used cannabis, hashish and marijuana while the corresponding percentage of the female students was 14.5%.
The number of the different drug users is similar in the studies of Rimpelä et al. 2005 and KTL (2007).

There was a relationship between the use of alcohol and smoking and the use of drugs and smoking. Most of the students who were daily smokers reported to use alcohol sometimes (49.1%). The majority of the daily smokers had also used cannabis, hashish or marijuana (43.4%). The result showed similar effects of smoking as was reported in the studies of Salonen (2003), Shillington and Clapp (2006) and Haukkala et al. (2006). In the study of Salonen (2003) it was reported that the use of cannabis was increasing among the Finnish university students. The association between cigarette smoking and the use of cannabis was obvious. The results by Salonen showed a strong relationship between smoking and the use of alcohol, too.

**Sexual behaviour**

The students did not have much sexual experience. The female students were more active sexually than the male respondents. The students who were studying at the University of Helsinki were more active in their sexual behaviour than the other students. The results were similar to the study in 1999 (Serlo & Aavarinne) and contradictory to the results of the study of Aras et al. (2007). The frequency of the sexual intercourse of the Turkish male students was three times higher than that of the female students. In the study of Huang et al. (2005) 14% of the Chinese nursing students were sexually active and 40% of them never used condoms.

The results showed that it was common for the respondents to be single during their first study year. Nearly two thirds of the students of Moi University responded that they did not have any sexual relationships. More than forty per cent of the students at Oulu University had not had any sex during the previous month. The result was similar with the study of Nikula et al. (2007) where the result showed that it was common for younger men to stay single and have multiple partners.

The respondents at the University of Helsinki were more active, they had sex two to three times a week or even more. Two thirds of the respondents who reported religion to be very meaningful had no sexual relationships. More than eighty per cent of the students of Moi University (85.5%) and of the universities of Oulu (17.5%) and OUAS (14.8%) replied that religion was very meaningful for them. According to Kontula (1991), religion was named to be one of the main
factors influencing the sexual behaviour of the youngsters. Religion has also been regarded an important factor of the ethical dimension in human sexuality by Greenberg et al. (1993).

Smoking and the use of alcohol have no correlation with either the frequency of the sexual activity or the number of partners.

**Prevention against pregnancy and sexual diseases**

More than two thirds of the students reported the use of prevention with their partner in order to prevent pregnancy. Almost half of the students informed that they always or almost always used prevention against sexual diseases. Among the Finnish students the most common prevention method was the Pill. The Pill was used for preventing pregnancy and the condoms against pregnancy and sexual diseases. Forty per cent (40.7%) of the Kenyan students used condoms. The rate of the condom use of the Finnish university students themselves was 37.7% and 65.3% concerning their partners. Among the university students in Turkey the rate of condom use was 47.4% as reported in the study of Aras et al. (2007). Among the young Finnish people, 70% of the male and 55% of the female adolescents had used condoms during their last intercourse in 1994 (Pötsölä & Kontula 1999).

In the study of Nikula et al. (2007) it was common for younger men to stay single and have multiple partners. The mean number of sexual partners for men was 5.0 and for women 3.4. Casual sex was common among young adults in Finland and it often occurred without using a condom.

Almost ten per cent of the students had had sexual disease. The percentage was smaller than that of the Finnish adolescents normally in Finland. The prevalence of Genital herpes is 20% among Finnish adolescents at the age of 15 to 25 and also 20% concerning Clamydia trachomatis. The prevalence of reported Clamydia is four times higher among the girls than among the boys of the same age (Lehtinen et al. 2007, KTL 2007). Two of the students had HIV.

**Factors affecting the use of prevention**

The age of the students had influence on the use of prevention. More than seventy per cent of the students being older than 30 years of age reported that they did not use prevention. An explaining factor might be the marital status of the students. More than sixty per cent of the respondents were married. Nevertheless almost
twenty per cent (18.9%) of the students had a temporary or a permanent but not living together relationship at the age of 30 years or over.

The importance of religion influenced the use of prevention. More than fifty per cent (56.6%) of the respondents who reported religion to be very meaningful had no sexual relationships. Almost half of the students (45.7%) reporting religion to be rather meaningless hardly ever used prevention against sexual diseases. Religion was also the reason for avoiding premarital relationships among the university students in the United Arab Emirates in the study of Ganczak et al. in 2007. In the study of Yarber et al. (2002) sex before the age of 15 and regular smoking were associated with non-condom use by the males.

Almost one fifth of the students reported that they did not know whether they were HIV positive. One quarter of them had been tested against HIV. The reason to have a test was in most cases security. The number of tested Finnish (23.1%) and Kenyan students (43.8%) was higher than that of the Indian students (10%) in the study of Pelzer et al. in 2004. Female sex, older age and children at home were associated with more cautious attitudes to sexual risk behaviour Peate et al. (2002).

Students' knowledge of and feelings about HIV/AIDS in relation to the sexual behaviour and prevention

In the study of Turhan et al. 2006 the results showed that knowledge is not always enough to change attitudes. The students’ knowledge was compared to the number of the reported sex partners and sexual activity in order to investigate the influence of the students’ knowledge of HIV/AIDS on their sexual behaviour. No influence was found between the students’ knowledge and the number of their sex partners or the frequency of the sexual activity.

Almost the same number of students who reported using prevention always or almost always identified both HIV correctly (43.4%) and incorrectly (45.7%). The situation concerning AIDS was similar. The students who used prevention always or almost always defined AIDS correctly in 39.2% of the cases and incorrectly in 48.6% of the cases. In the previous study (Serlo & Aavarinne 1999) knowledge did not increase the use of safe sex but limited the students’ sexual behaviour.

No statistically significant correlation was found between the correct knowledge of HIV and an HIV test but there was statistically significant correlation between the correct knowledge of AIDS and HIV test. One third of the
students who had the correct knowledge of AIDS were HIV tested individuals while of the students who had incorrect knowledge only 24.0% were tested.

The results showed that knowledge and information might not be enough in order to raise the students’ awareness and to promote healthy sexual behaviour among the university students. At that age the students already had a lot of information and knowledge gained from different sources before they had started their studies at the university. They did have both correct and incorrect knowledge of HIV and AIDS. The influence of the correct and incorrect knowledge was the same as the prevention against sexual diseases.

The influence of the students’ beliefs/prejudices and feelings concerning their sexual behaviour and prevention

The students’ beliefs/ prejudices and feelings were compared with the number of sex partners, sexual activity and the frequency of prevention. No statistical significance between the beliefs/prejudices and the number of the partners or the reported sexual activity was found. There were not any previous studies to be compared with the results that exactly reported about the connection between the cognitive, affective components of attitudes in connection with the behavioural component.

The Finnish students had less prejudices and beliefs against HIV/AIDS compared to those of the Kenyan students. The Finnish students’ beliefs and prejudices towards HIV/AIDS were more often weak rather than strong. Fifty per cent of the Finnish respondents reported using prevention always or almost always. More than thirty per cent (31.8%) of the Finnish students with weak attitudes to beliefs/ prejudices responded that they never or hardly ever used any prevention.

More than fifty per cent (53.3%) of the Kenyan students with mild beliefs/ prejudices against HIV/AIDS reported that they always used prevention. Almost the same number of Kenyan students with strong prejudices used prevention always/almost always or occasionally. One third of the Kenyan students who had no sexual relationships had strong or very strong attitudes towards HIV and AIDS. In the study of Venier (1998) the female students in Kenya, Nigeria and Zimbabwe reported less anxiety than male students concerning the use of condoms.

The students who had weak beliefs/prejudices (partly disagreed/disagreed with the negative items) were not HIV tested in 75.4% of cases.
The reason for the fact that the Finnish students did not have strong beliefs or prejudices against HIV/AIDS might be the lack of experiences with people with HIV/AIDS. HIV/AIDS was regarded distant and not to belong in the students’ everyday life in Finland. In Finland the total number of HIV positives is very low compared to other European countries (2,288 HIV infected). There is a law in Finland which makes it voluntary for everyone to report their HIV positive status at schools, nurseries and hospitals. The health care personnel have to work safely so that there is no risk of becoming infected. There are only a few individuals who have publicly admitted being HIV positive. Secrecy prevents an open and free discussion of being HIV positive.

The Kenyan students had many strong beliefs and prejudices against HIV and AIDS. The correct or incorrect knowledge of HIV and AIDS did not have any influence on the strength of the beliefs and prejudices of the Kenyan students. In Kenya the discussion about HIV/AIDS has become more open lately. The universities have an HIV/AIDS policy, voluntary testing and counselling services and the treatment of HIV/AIDS related illnesses (Moi University HIV/AIDS policy 2006).

No statistically significant correlation has been found between the feelings of the respondents and their sexual behaviour (sexual activity, number of sex partners, HIV test).

The Finnish students who used prevention always/almost always had strong negative feelings about being in contact with an HIV/AIDS patients or to touch one. The students who had mild negative feelings towards HIV/AIDS patients never or hardly ever used prevention. The attitudes concerning feelings associated with being in contact with or touching an HIV/AIDS patient did not have a significant influence on the use of prevention.

6.3 Reliability and validity

Reliability refers to the accuracy and consistency of information obtained in a study. According to Polit & Hungler (2004) the reliability of a measuring tool can be assessed in various ways. The aspects that have received major attention are stability, internal consistency and equivalence. Validity refers to the degree to which an instrument measures what it is supposed to be measuring.

In this study the questionnaire included structured and open ended questions. The definition of the concept of AIDS was problematic concerning the responses
of the Kenyan students. Instead of the content of the concept they only explained what the abbreviation AIDS meant or where the name came from.

The questionnaire was translated into English and back into Finnish by two experts. The results were compared and discussed. The Kenyan responses in English to the open ended questions were analysed by the investigator. The Kenyan experts were consulted in problematic cases and the results were discussed with them to obtain the right interpretation.

It was not possible to determine the population of the students in this study. In the universities the lectures are open for all interested students. This means that the number of students is varying. The possibility to respond to the questionnaire was given to 50 students of three faculties in each university. The response rate was 87.5%.

6.4 Ethical considerations

The ethical principles of research include certain requirements for the researcher: the research information given to the participants, voluntary and autonomous participation and the possibility to withdraw at any time they wish (Polit & Hungler 1999, Polit & Beck 2004). In this study the investigator informed the participants about the purpose and aims of the study, its acceptance by the authorities, the principle of voluntariness, anonymity and the choice of withdrawing at any time they wish (Attachment 5). The students returned the questionnaires in an anonymous envelope to the student office or to the info desk of the faculty where the investigator picked them up later. It was not possible for the investigator to identify the respondents or to identify an envelope with a certain student.

Some of the questions were very intimate. The study plan including the questionnaire was accepted by the Ethical Committee in 2001.

6.5 Suggestions for health education and prevention of HIV/AIDS

According to the results of this study the following suggestions for health education and promotion may be presented concerning the attitudes and health/risk behaviour of HIV/AIDS.

Drinking alcohol was more prevalent among students (34.8%) than smoking (29.8%). More than ten per cent of the respondents reported that they had used drugs. Some of the students had used more than three different kinds of drugs.
The most common of the named drugs were cannabis, hashish and marijuana (16.5%). The female students (17.0%) reported that they used amphetamine, ecstasy and LSD more often than the male students (8.7%). One fifth of the male respondents (20.3%) informed that they had used cannabis, hashish and marijuana while the corresponding percentage of the female students was 14.5%.

The age of the students in this study ranged from seventeen to forty nine years (mean 22.2 years). The Finnish and Kenyan students had a good level of knowledge concerning HIV and AIDS in general. They already had several information sources. Most of the information had been obtained from the TV, campaigns, newspapers, and information packages. The television has been found the most important information source of HIV/AIDS in several studies (Pötsönen & Kontula 1999, Yoo et al. 2005, Serlo & Aavarinne 1999). The role of the health care professionals was very small.

The information should be more focused and tailored according to the age, profession and risk group. Most of the previous research was focussing on health care staff or students. Information should be directed also to the other professions, for instance in business and technology. The reception of the students’ health care, the public health nurse or occupational health care is a suitable situation to share correct information of HIV/AIDS and HIV test possibilities. The results of this study showed that although the Finnish and Kenyan students had plenty of information sources they reported that they needed more information both concerning the physical health and the emotional well-being of the HIV/AIDS patients.

The students did have both correct and incorrect knowledge of HIV and AIDS. The influence of correct and incorrect knowledge was the same regarding the prevention of sexual diseases. According to the results the information and knowledge of HIV/ADS is not enough to change the sexual behaviour. New health education methods are needed to develop to achieve the awareness of the risk behaviour. It is necessary to influence the beliefs, prejudices and feelings of the university students. Discussions with HIV/AIDS patients, socio drama and workshops could be methods of providing an opportunity to face the feelings and prejudices of the students. The religion was very significant for the respondents. As to HIV/AIDS the ethical and religious approach should be included in the information. The results were similar with Turhan et al. (2006).

The Pills is the most common method of prevention used against pregnancy among the Finnish students. The motivation to use condoms is needed to get stronger. The female condoms should be available and it should be easy for the

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young adults to buy both male and female condoms. HIV is invisible. Young adults should be supervised as to healthy sexual behaviour by the health care personnel and educators at all levels of education.

In order to correct the lack of information the Ministry of Social Affairs and Health has compiled the first national action programme for the promotion of sexual and reproductive health. Sexual and reproductive health studies are included in the health education studies and curriculum of the comprehensive and vocational schools (Ministry of Social Affairs and Health 2007). These guidelines could be generalized also in the Kenyan educational system.

### 6.6 Suggestions for future research

This study provided information about the attitudes and behaviour of university students towards HIV/AIDS and people with HIV/AIDS. The Health Behaviour in School-aged Children study has reported internationally about health and well-being, smoking, alcohol consumption, physical activity, cannabis use and sexual health. The data have been collected with an international survey. There are also several studies concerning the knowledge and attitudes of the nursing students and health care personnel towards HIV/AIDS. In the future, it would be interesting to study and compare the attitudes of the personnel in technology and business towards HIV/AIDS.

The questionnaire has been translated into Swedish and Norwegian. In Norway the number of HIV positive individuals is twice and in Sweden three times higher than in Finland. The comparison between the Nordic countries with different kind of culture and border neighbours would be necessary and interesting.

The approach of this study is preventive and supports health promotion at universities. The new action programme 2007–2011 of the promotion of sexual and reproductive health is presenting the responsibility of HIV/AIDS knowledge and education to be included in the curriculum and health education studies at all levels of education. Follow-up research is needed to show the gaps in the knowledge, attitudes and behaviour of the young people. Knowledge is not enough to raise awareness of high risk sexual behaviour.

In this study the results showed that the most popular information source was the television both in Finland and in Kenya. The parents did not inform their children. New information may be found by interviewing voluntary parents about the views of their role in the sexual education and support of their children.
7 Conclusion

The purpose of this study was to describe and to compare the university students’ attitudes (knowledge, feelings and behaviour) towards HIV/AIDS in Finland and in Kenya and to find explanatory factors associated with the sexual risk behaviour. For educators and managers in health care and in health education the results will provide an opportunity to deepen their knowledge and awareness of students’ sexual behaviour. These results may also be used for planning an educational programme for youngsters and young adults in order to promote healthy sexual behaviour.

The attitudes include the cognitive, affective and behaviour components. The conclusions of the cognitive component of the attitudes are reported in the paragraphs on knowledge of HIV/AIDS. The conclusions of the affective component are reported in the paragraphs on feelings of beliefs/prejudices, feelings and emotions/sensations respectively. The conclusions of the behaviour component are presented in the section on students’ sexual behaviour.

Knowledge of HIV/AIDS

1. The Finnish and Kenyan students had a good level of knowledge concerning HIV and AIDS. The students of the University of Helsinki identified HIV to be a virus and AIDS to be a disease or sickness more often than did the other Finnish students. The Kenyan students defined the concept of AIDS correctly but they could not all explain or define the contents of the concept.

2. Most of the information had been obtained from the TV, campaigns, newspapers, and information packages. The role of the health care professionals was very small in both countries. Yet, the public health nurses served more often as a source of information for the female students than for the male respondents.

3. The Finnish respondents did not have much experience-based knowledge of HIV/AIDS. Two thirds of the respondents had never been in any kind of contact with a patient, excretion, equipment or a family of an HIV/AIDS patient. The students of Moi University were the most experienced at every level.

4. Although the students had plenty of information sources they reported that they needed more information concerning both the physical health and the emotional well-being of HIV/AIDS patients.
Beliefs/prejudices, feelings and emotions/sensations against HIV/AIDS and people with HIV/AIDS

5. The attitudes of the respondents towards HIV/AIDS were mainly positive. The students felt sympathy and they did not feel it unpleasant to meet people with HIV/AIDS. The most negative attitudes were found towards homosexuals and intravenous drugs users. The female students had more positive attitudes than the male students towards HIV/AIDS and homosexuals.

6. The level of knowledge of HIV/AIDS did not have an effect on the level of the beliefs and prejudices. The Finnish students who had defined HIV/AIDS correctly had as many beliefs/prejudices as the Finnish students who defined HIV/AIDS incorrectly. The situation was the same with the Kenyan students. The Finnish students had less or not so strong beliefs and prejudices concerning HIV/AIDS than did the Kenyan students.

7. The male students in the universities of Oulu were more negative in their attitudes to describing their feelings of being in contact with or touching an HIV/AIDS patient and describing their sensations and emotion concerning HIV/AIDS patients compared to the other students. The correct or incorrect knowledge of HIV/AIDS did not correlate with the students’ feelings about contacting HIV/AIDS patients.

8. The Finnish universities felt HIV more often frightening and distant than did the Kenyan students. The Kenyan students reported HIV not to be so distant but they felt it to be a global problem. Over half of the Kenyan students found AIDS frightening and dangerous.

9. The most suitable jobs for HIV/AIDS positive individuals were regarded to be the jobs in the service sector. The jobs which presumed a close contact with the HIV/AIDS positives were not recommendable. Female students estimated such jobs suitable for HIV/AIDS patients more often than did the male students.

Students’ sexual behaviour

10. It was common for the respondents to be single during their first study year. The female students were more active sexually than the male respondents. The students who were studying at the University of Helsinki were more active in their sexual behaviour than the students in the other universities. The
respondents who reported religion to be very meaningful had no sexual relationships.

11. It is usual for the students to use prevention with their partner in order to prevent pregnancy. Among the Finnish students the most common prevention method was the Pill while the Kenyan students used condoms. The male respondents reported to use prevention more frequently than the female students.

12. Smoking and the use of alcohol had no effect on either the frequency of the sexual activity or on the number of partners.

13. The age and the importance of religion of the students had influence on the use of prevention.

14. The students’ knowledge had no effect on the number of their sex partners or the frequency of the sexual activity. Almost the same number of students who reported always or almost always using prevention identified both HIV correctly and incorrectly. The situation concerning AIDS was similar.

15. The beliefs/prejudices had no relationship with the number of the partners or the reported sexual activity. The Finnish students’ beliefs and prejudices towards HIV/AIDS were more often weak than strong.

16. The Finnish students who used prevention always/almost always had strong negative feelings about being in contact with an HIV/AIDS patient or touching one.
References


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Appendices

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## Appendix 1 Main information sources of the Finnish and Kenyan students

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Appendix 2 Comparison of attitudes of the Finnish and the Kenyan university students (significant results)

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<tr>
<td>An intravenous drug user with HIV/AIDS should be admitted for care only after other patients.</td>
<td></td>
<td></td>
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<td>Kenyan</td>
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<td>6.3</td>
<td>8.1</td>
<td>67.6</td>
<td>9.9</td>
<td>111</td>
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</tbody>
</table>

*not significant
### Appendix 3 Prevention methods of the Finnish and Kenyan students and their partners against pregnancy

Table 13. Prevention methods of the Finnish and Kenyan students and their partners against pregnancy (n = 348 students, n = 282 partners).

<table>
<thead>
<tr>
<th>Prevention method</th>
<th>OUAS N</th>
<th>Oulu N</th>
<th>Helsinki N</th>
<th>MOI N</th>
<th>Total N</th>
<th>p</th>
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<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
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</tr>
<tr>
<td><strong>Condom</strong></td>
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</tr>
<tr>
<td>Him/herself</td>
<td>25 21.9</td>
<td>20 17.5</td>
<td>23 20.2</td>
<td>46 40.4</td>
<td>114 100</td>
<td>0.0001</td>
</tr>
<tr>
<td>Partner</td>
<td>40 25.0</td>
<td>34 21.3</td>
<td>46 28.7</td>
<td>40 25.0</td>
<td>160 100</td>
<td></td>
</tr>
<tr>
<td><strong>Pills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Him/herself</td>
<td>51 31.5</td>
<td>42 25.9</td>
<td>63 38.9</td>
<td>6 3.7</td>
<td>162 100</td>
<td>0.0001</td>
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<tr>
<td>Partner</td>
<td>19 29.2</td>
<td>16 24.6</td>
<td>20 30.8</td>
<td>10 15.4</td>
<td>65 100</td>
<td></td>
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<tr>
<td><strong>Spermicidal foam</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Him/herself</td>
<td>1 50.0</td>
<td>– –</td>
<td>1 50.0</td>
<td>– –</td>
<td>2 100</td>
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<tr>
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<td>1 50.0</td>
<td>1 50.0</td>
<td>– –</td>
<td>– –</td>
<td>2 100</td>
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<tr>
<td><strong>Intrauterine device</strong></td>
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</tr>
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<td>1 8.3</td>
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<tr>
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<td></td>
<td></td>
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<td>– –</td>
<td>3 25.0</td>
<td>6 50.0</td>
<td>12 100</td>
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<tr>
<td>Partner</td>
<td>2 28.6</td>
<td>1 14.3</td>
<td>– –</td>
<td>4 57.1</td>
<td>7 100</td>
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</tr>
<tr>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Him/herself</td>
<td>13 28.3</td>
<td>10 21.7</td>
<td>4 8.7</td>
<td>19 41.3</td>
<td>46 100</td>
<td>0.001</td>
</tr>
<tr>
<td>Partner</td>
<td>17 50.0</td>
<td>3 8.8</td>
<td>3 8.8</td>
<td>11 32.4</td>
<td>34 100</td>
<td>0.001</td>
</tr>
</tbody>
</table>
Table 14. Prevention methods of the Finnish and Kenyan students and their partners against pregnancy (n = 348 students, n = 282 partners).

<table>
<thead>
<tr>
<th>Prevention method</th>
<th>OUAS</th>
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<th>Helsinki</th>
<th>MOI</th>
</tr>
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<td>N %</td>
<td>N %</td>
<td>N %</td>
</tr>
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<td>Condom</td>
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<tr>
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<td>25 25.3</td>
<td>20 27.4</td>
<td>23 24.1</td>
<td>46 56.8</td>
</tr>
<tr>
<td>Partner</td>
<td>40 48.2</td>
<td>34 59.8</td>
<td>46 63.9</td>
<td>40 57.1</td>
</tr>
<tr>
<td>Pills</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Him/herself</td>
<td>51 51.5</td>
<td>42 57.5</td>
<td>63 66.3</td>
<td>6  7.4</td>
</tr>
<tr>
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<td>19 22.9</td>
<td>16 28.0</td>
<td>20 27.8</td>
<td>10 14.3</td>
</tr>
<tr>
<td>Spermcidal foam</td>
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<td>Him/herself</td>
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<td>–  –</td>
<td>1  1.1</td>
<td>–  –</td>
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<tr>
<td>Partner</td>
<td>1  1.2</td>
<td>1  1.8</td>
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<td>–  –</td>
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<tr>
<td>Him/herself</td>
<td>13 13.2</td>
<td>10 13.7</td>
<td>4  4.2</td>
<td>19 23.5</td>
</tr>
<tr>
<td>Partner</td>
<td>17 20.5</td>
<td>3  5.4</td>
<td>3  4.1</td>
<td>11 15.7</td>
</tr>
<tr>
<td>Something else</td>
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<td></td>
</tr>
<tr>
<td>Him/herself</td>
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<td>–  –</td>
<td>3  3.2</td>
<td>6  7.4</td>
</tr>
<tr>
<td>Partner</td>
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<td>1  1.5</td>
<td>–  –</td>
<td>4  5.8</td>
</tr>
<tr>
<td>Total</td>
<td></td>
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</tr>
<tr>
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<td>73 100</td>
<td>95 100</td>
<td>81 100</td>
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<td>57 100</td>
<td>72 100</td>
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Appendix 4 Measurement questions and variables

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<td>Age</td>
<td>2</td>
</tr>
<tr>
<td>Faculty</td>
<td>3</td>
</tr>
<tr>
<td>The year of starting the studies</td>
<td>4</td>
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<tr>
<td>Home community</td>
<td>5</td>
</tr>
<tr>
<td>Relationship</td>
<td>6</td>
</tr>
<tr>
<td>State of life</td>
<td>7</td>
</tr>
<tr>
<td>Meaning of religion</td>
<td>8</td>
</tr>
<tr>
<td>Religion</td>
<td>9</td>
</tr>
<tr>
<td>Threat of world situation in future</td>
<td>10</td>
</tr>
<tr>
<td>Awareness of AIDS support centre</td>
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</table>

Questions in the study

1. What kind of attitudes do male and female university students have towards HIV/AIDS in Finland and in Kenya?

* What kind of knowledge do students have concerning HIV and AIDS?
  - How do university students define HIV and AIDS? 11, 19
  - What kind of information sources do university students use? 12
  - How sufficient was university students’ knowledge according to their own estimate? 15, 16, 18

* What kind of feelings do university students have towards HIV/AIDS? 13*, 14, 17, 20, 21, 38

* What kind of health and sexual behaviour do university students have against HIV-infection? 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37

2. What kind of differences in attitudes (knowledge, feelings and behaviour) do Finnish male and female university students have towards HIV/AIDS?

3. What kind of differences in attitudes (knowledge, feelings and behaviour) do male and female university students have towards HIV and AIDS in Finland and in Kenya?

4. What kind of factors in the male and female university students’ attitudes (knowledge, feelings and behaviour) have an influence on the sexual risk behaviour of the students both in Finland and in Kenya?

*-marked question included items of which the grouping variables have been created
Appendix 5 A motivation letter

HYVÄT LÄÄKETIETEEN OPISKELIJAT

Olen jatko-opiskelijana Oulun yliopistossa. Väitöskirjani työnimi on "Korkeakouluopiskelijoiden HIV/AIDSia koskevat tiedot, asenteet, tuntemukset ja käyttäytyminen Suomessa ja Keniassa".


Olen sopinut, että voitte palauttaa lomakkeet nimettömänä suljetussa kirjekuoressa opintotoimistoon, josta ne toimitetaan minulle. Vastauksetta pysty salaisena ja vain tutkijana käsittelen vastauksiasi. HIV lisääntyy naapurimaissa (Venäjä, Baltia) hurjaa vauhtia ja voimme olla tyytyväisiä, että luvut puolestaan ovat olleet matalat. On kuitenkin tärkeää, että näin on tulevaisuudessakin ja voimme osallistua auttamaan myös näiden maittain ja ihmisiin, joiden tilanne on paljon huolestuttavampi.

Vastaamalla annatte oman panoksenne. Nuorten terveyden edistäminen ja seksuaalivalistuksen keinot ovat vähissä ja myös Kenian Kakamegassa sekä Sirisiassa odotetaan tutkimustuloksia ja yhteistyötä nuorten ohjaamisen ja oikean tiedon informoimiseksi tavalla, jolla on vaikuttavuutta nuorten seksuaalikäyttäytymiseen ja uskosten sekä luolojen vähennemiseen.

Tiivistelmä tutkimusuunnitelmasta


Maailmanlaajuisesti tarkasteltuna vuonna 1994 maailmassa arvioitiin olevan 14 miljoonaa HIV tartunnan saanutta, kuitenkin vuonna 2004 tiedettiin HIV positiivisia olevan yli 40 miljoonaa. HIV-tartunnat ovat yleisimpiä siellä, missä äitiys- ja imeväiskuolleisuus on muutenkin korkea, ei-toivottuja raskauksia ja abortteja on paljon, seksuaalisuuteen liittyvää tietoa on vähän ja koulutustaso on alhainen. Erityisen huolestuttavaa on nuorten naisten suuri osuus tartunnan saaneista.


Tutkimustulokset antavat nuorille mahdollisuuden syventää seksuaalikäytäytymiseen liittyvää tietoisuuttaan. Tuloksia voidaan hyödyntää laajasti nuorten ja nuorten aikuisten seksuaalikäytäytymiseen liittyvän terveyden edistämisen suunnittelussa ja toteutuksessa ja alan asiantuntijoiden koulutuksessa. Tutkimus on osa laajempaa Oulun yliopiston hoitotieteiden ja hallinnon laitoksen terveyden edistämistä koskevaa tutkimusta (Terveyttä toiminnan tiedostamisella).

terveisin

Kaijaleena Serlo
jatko-opiskelija
Oulun yliopisto
Lääketieteellinen tiedekunta
Hoitotieteiden ja hallinnon laitos
Appendix 6 Grouping variables with regard to factor analyses

<table>
<thead>
<tr>
<th>Factors</th>
<th>Items</th>
<th>Factor component</th>
<th>Cronbach alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Believes/prejudices to HIV/AIDS</td>
<td>HIV/AIDS is a punishment by God for immorality.</td>
<td>0.772</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>HIV/AIDS is God’s punishment for homosexuals.</td>
<td>0.780</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Homosexuals received what they deserve.</td>
<td>0.774</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Homosexuals must not be allowed to be in contact with anyone.</td>
<td>0.775</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If my child shows homosexual features I would take him/her to psychiatric care.</td>
<td>0.786</td>
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</tr>
<tr>
<td></td>
<td>Should I become aware of an acquaintance of mine having HIV/AIDS, it would make it difficult for me to continue with my relationship to her/him.</td>
<td>0.783</td>
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</tr>
<tr>
<td></td>
<td>HIV/AIDS patients insult me morally.</td>
<td>0.807</td>
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<tr>
<td></td>
<td>I feel uncomfortable with HIV/AIDS patients around.</td>
<td>0.512</td>
<td>0.7</td>
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<tr>
<td>2. Feelings about contact with an HIV/AIDS patient</td>
<td>I find it unpleasant to touch a person with HIV.</td>
<td>0.561</td>
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<tr>
<td></td>
<td>It is unpleasant to meet an HIV/AIDS patient</td>
<td>0.606</td>
<td></td>
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<tr>
<td></td>
<td>Contact with HIV/AIDS patients is different from that with the healthy.</td>
<td>0.677</td>
<td></td>
</tr>
<tr>
<td>3. Sensations/emotions towards HIV/AIDS patients</td>
<td>A person with HIV/AIDS does not have equal rights for care to anyone else</td>
<td>0.554</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>I do not feel sympathy towards HIV/AIDS patients.</td>
<td>0.527</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Working with HIV/AIDS patients cannot be a rewarding experience.</td>
<td>0.532</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I do not want to have anything to do with intravenous drug users.</td>
<td>0.518</td>
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<tr>
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<td>The high expenses of HIV/AIDS patients’ care are not fair towards others in need of care.</td>
<td>0.529</td>
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<td>An intravenous drug user with HIV/AIDS should be admitted for care only after other patients.</td>
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<tr>
<td></td>
<td>One cannot ask anyone to be in contact with a person with HIV/AIDS</td>
<td>0.536</td>
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<tr>
<td></td>
<td>It is important to stop the habit of being helpful with HIV/AIDS patients.</td>
<td>0.555</td>
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<tr>
<td></td>
<td>I would change the study institution if I had to study with HIV/AIDS patients in the same place.</td>
<td>0.546</td>
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</tr>
<tr>
<td></td>
<td>If I had HIV/AIDS, I would be worried that I could be regarded as a homosexual.</td>
<td>0.549</td>
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</table>
Appendix 7 Questionnaire

DEAR RESPONDENT

Circle the right answer in each question or write your answer in the place provided.

1. Gender
   1 male
   2 female

2. Your age ............ years

3. In which faculty/ degree programme do you study?

4. When did you start your current studies?
   1 autumn 2004
   2 some other time ..............................................................

5. Your home community is
   1 country side
   2 town

6. Your relationship is
   1 married
   2 engaged
   3 cohab
   4 divorced
   5 temporary relationships
   6 permanent relationship, not living together
   7 no relationships

7. How do you describe your present state of life?

8. How meaningful do you regard religion from the point view of your life values?
   1 very meaningful
   2 somewhat meaningful
   3 rather meaningless
   4 meaningless
   5 I cannot tell
9. Your religion is
1  Lutheran
2  Orthodox
3  Catholic
4  Jewish
5  Islamic
6  Buddhist
7  Baptist
8  Methodist
9  Free-Church
10 something else........................................................................................................

10. Which of the following alternatives in your point of view threaten the world situation in the future?
Rank the five (5) most important factors.
(1 = the most important, 2 = second most important, ....... 5 = fifth most important)

<table>
<thead>
<tr>
<th>Environmental problems</th>
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<tbody>
<tr>
<td>War</td>
<td></td>
</tr>
<tr>
<td>Problems in society</td>
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</tr>
<tr>
<td>State of the Underdeveloped countries</td>
<td></td>
</tr>
<tr>
<td>End of the world</td>
<td></td>
</tr>
<tr>
<td>AIDS</td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
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</tr>
<tr>
<td>Other possible threats</td>
<td></td>
</tr>
</tbody>
</table>

11. Explain how you understand the following concepts.

A. What does HIV mean?
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
B. What does AIDS mean?

12. Tick under the following questions the alternatives that concern you.

From which of the following sources have you received information regarding HIV-infection/AIDS?

Tick three of the most important sources of information.

<table>
<thead>
<tr>
<th>Information source</th>
<th>Dissemination</th>
<th>Cause</th>
<th>Risk Group</th>
<th>Cure</th>
<th>Prevention</th>
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<td>School journal</td>
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<td>Class or study friend</td>
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<tr>
<td>Friends</td>
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<tr>
<td>Physician</td>
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<td>Teacher</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Something else, what</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. What do you think about the following items?
Assess how well the following items correspond to your own opinions. Evaluate them on the scale from 1 to 5.

**Circle each item that best reflects your opinion.**
1 = agree, 2 = mostly agree, 3 = partly disagree 4 = disagree, 5 = I cannot tell

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A person with HIV/AIDS has equal rights for care as anyone else.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>One cannot ask anyone to be in contact with a person with HIV/AIDS</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>HIV/AIDS will in the future make my work prone to risks.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>HIV/AIDS is a punishment by God for immorality.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>HIV/AIDS is a God’s punishment for homosexuals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Due to increased number of HIV/AIDS cases my attitudes have become more understanding.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Contact with HIV/AIDS patients is different compared with the healthy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The high expenses of HIV/AIDS patients’ care are not fare towards others in need of care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>HIV/AIDS patients morally insult me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Should I become aware of the fact that an acquaintance of mine has HIV/AIDS, it would be difficult for me to continue with my relationship with her/him.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>A study friend with HIV/AIDS does not bother me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Homosexuals have got what they deserve.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
If I had HIV/AIDS I would be worried that I am regarded as a homosexual.  
1 2 3 4 5

Working with HIV/AIDS patients can be a rewarding experience.  
1 2 3 4 5

It is important to stop the habit of being helpful to HIV/AIDS patients.  
1 2 3 4 5

It is unpleasant to meet HIV/AIDS patients.  
1 2 3 4 5

I would change the study institution, if I had to study with HIV/AIDS patients in the same place.  
1 2 3 4 5

I feel sympathy towards HIV/AIDS patients.  
1 2 3 4 5

Homosexuals must be allowed to be in contact with anyone.  
1 2 3 4 5

If my child shows homosexual features I would take him/her to psychiatric care.  
1 2 3 4 5

I feel uncomfortable with HIV/AIDS patients around.  
1 2 3 4 5

I do not want to have anything to do with intravenous drug users.  
1 2 3 4 5

An intravenous drug user with HIV/AIDS should be admitted for care only after other patients.  
1 2 3 4 5

I think it is unpleasant to touch a person with HIV.  
1 2 3 4 5

14. For each question circle the number which best represents your opinion.

How stressful do you think it will be in your future job to work with HIV/AIDS patients?
1 not at all stressful
2 a little bit stressful
3 rather stressful
4 very stressful
5 I cannot tell
If HIV/AIDS patients’ number is increasing in the future, how difficult it will be to be in contact with them?
1  not at all difficult
2  a little bit difficult
3  rather difficult
4  very difficult
5  I cannot tell

How pleasant do you feel/you could feel in the company of HIV/AIDS patients?
1  very pleasant
2  pleasant
3  unpleasant
4  very unpleasant
5  I cannot tell

How pleasant do you feel/you could feel in the company of a HIV/AIDS patient’s family or friends?
1  very pleasant
2  pleasant
3  unpleasant
4  very unpleasant
5  I cannot tell

15. How sufficient knowledge do you think you have concerning the physical health of HIV/AIDS patient?
1  very sufficient
2  sufficient
3  insufficient
4  very insufficient
5  I cannot tell

16. Estimate your capability of getting along with HIV/AIDS patient’s families and friends.
1  very good
2  good
3  small
4  very small
5  I cannot tell
17. Circle the number which corresponds to your opinion concerning the next questions.

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>in certain circumstances</th>
<th>only in exceptional cases</th>
<th>in no cases</th>
<th>I cannot tell</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your opinion may an HIV positive/AIDS patient act as a teacher in an elementary school?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>In your opinion may an HIV positive/AIDS patient act as a lecturer in a university?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>In your opinion may an HIV positive/AIDS patient act in service sector if she/he is not in direct contact with a client (e.g. in bank, travel agency)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>In your opinion may an HIV positive/AIDS patient act in a job, where he/she is in a direct contact with a client (e.g. a barber, a public health nurse)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

In what kind of a job do you think a HIV positive or AIDS patient can work?
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................

159
18. How sufficient do you think is your knowledge concerning the emotional life of HIV/AIDS patients?
1  very sufficient
2  sufficient
3  insufficient
4  very insufficient
5  I cannot tell

19. Circle the number that corresponds best to your opinion.

<table>
<thead>
<tr>
<th>How often have you</th>
<th>very often</th>
<th>often</th>
<th>sometimes</th>
<th>never</th>
<th>I cannot tell</th>
</tr>
</thead>
<tbody>
<tr>
<td>spoken with an HIV/AIDS patient</td>
<td>1  2  3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>been in direct physical contact with HIV/AIDS patient</td>
<td>1  2  3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>handled equipment which have been in contact with the excretion of HIV positive or AIDS patient</td>
<td>1  2  3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>discussed with someone an HIV/AIDS patient’s physical problems linked to the disease</td>
<td>1  2  3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>discussed with someone the emotional problems related to HIV infection or AIDS</td>
<td>1  2  3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>discussed with an HIV/AIDS patient’s family/friends</td>
<td>1  2  3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20. How risky do you regard mouth to mouth artificial respiration in a first aid situation?
1  very low risk
2  low risk
3  unimportant
4  risky
5  very risky
21. How risky do you regard your future job from the point of view of HIV?
1  very low risk
2  low risk
3  unimportant
4  risky
5  very risky

22. Have you had an HIV test?
1  yes, why.................................................................
2  no, why. not ............................................................

23. If not, have you thought of having a test ?
1  yes, why.................................................................
2  no, why not .............................................................

24. How often have you had intercourse in the past month?
1  not at all
2  once
3  2–3 times
4  ca once a week
5  2–3 times a week or more often

25. How often have you had anal sex during the past month?
1  not at all
2  once
3  2–3 times
4  ca once a week
5  2–3 times a week or more often

26. With how many sexual partners have you had intercourse during the past month?
1  one
2  two
3  three or four
4  five or more
5  not at all

27. How often have you smoked during the past month?
1  not at all
2  once
3  once a week
4  2–3 times a week
5  daily
28. How often have you snuffed during the past month?
1 not at all
2 once
3 once a week
4 2–3 times a week
5 daily

29. Have you had alcohol in conjunction with sexual intercourse during the past month?
1 not at all
2 sometimes
3 almost always
4 always
5 I have not had intercourse during the past month
6 I cannot tell

30. In sexual intercourse, how frequently do you use prevention towards a sexual disease?
1 always
2 almost always
3 occasionally
4 hardly ever
5 never
6 no sexual relationship

31. Have you ever had any sexual diseases in your life?
1 yes
2 no

If you have had a sexual disease, which one of the following and how many times?

<table>
<thead>
<tr>
<th>Disease</th>
<th>once</th>
<th>two/three times</th>
<th>more often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gonorrhea</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlamydia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syphilis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genital herpes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condyloma virus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>something else</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
32. Are you an HIV positive
1 yes
2 no
3 I do not know

33. How frequently have you had oral sex during the past month?
1 once
2 twice
3 three or four times
4 five times or more
5 not at all

34. How frequently have you been in sexual intercourse under the influence of drugs during the past month?
1 always
2 almost always
3 occasionally
4 very seldom
5 never

35. What kind of drugs have you used?
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................

36. Are you aware of the action of the AIDS support centre?
1 yes
2 no

37. Which prevention method do you and your partner use to prevent pregnancy in sexual intercourse?

<table>
<thead>
<tr>
<th></th>
<th>youself</th>
<th>partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>condom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the pill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spermicidal foam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>intrauterine device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>something else</td>
<td></td>
<td></td>
</tr>
<tr>
<td>what</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
38. What kind of feelings do you have

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>towards HIV</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>towards AIDS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>towards drugs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
981. Perkiömäki, Marja Riitta (2008) Craniofacial shape and dimensions as indicators of orofacial clefting and palatal form. A study on cleft lip and palate and Turner syndrome families


992. Kunnari, Anne (2008) Genetic, epidemiological and cell culture studies on human resistin


994. Tuomisto, Anne (2008) The role of collagen XIII in B-cell lymphoma development, and characterization of its biosynthesis and tissue distribution
Kaijaleena Serlo

UNIVERSITY STUDENTS’ ATTITUDES TOWARDS HIV/AIDS IN FINLAND AND IN KENYA