

HIV/AIDS:
On the Relationship Between Knowledge (K), Attitudes (A),
and Condom Practice (P) in Norwegian and South African
University Students.



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Abstract

We conducted this cross-sectional comparative study between January and April 2014. The objective was to explore the relationship between knowledge, attitudes and sexual risk behavior related to HIV/AIDS. Two different cultural contexts were investigated: Norway represented a country with low prevalence and South Africa a country with high prevalence of HIV/AIDS. We introduced the KAP model as a theoretical framework. Festinger's theory of cognitive dissonance and Bem's theory of self-perception were used as opposing perspectives of the KAP model. A total number of 407 university students representing two self-selected samples participated in the study. In Oslo, 173 students responded to the online questionnaire. 234 students in Cape Town responded to a self-administered questionnaire. The results showed that the Oslo students had higher levels of knowledge, and more positive attitudes towards HIV/AIDS than the Cape Town students had. In Oslo, age was a statistically significant predictor of condom use. No relationships between the components in the KAP model were found. In contrast, number of sexual partners was an important predictor of condom use in Cape Town. A relationship was found between knowledge and attitudes, but not with practice. When we turned KAP around to PAK, no other relationships were found in support of the model except for a relationship between attitudes and knowledge in Cape Town. The study may serve as a critique of the KAP model and the PAK model. A cultural perspective on the global HIV/AIDS epidemic is profitable, but in future research more complex models will suit better to explain variations in concepts and people's underlying motives.

Introduction

Background

The study of knowledge, attitudes and sexual risk behavior related to HIV/AIDS, and the relationship between these phenomena, is of significant interest to the society in an era confronting the HIV/AIDS epidemic. The Human Immunodeficiency Virus (HIV) that causes the Acquired Immunodeficiency Syndrome (AIDS) was first documented in the early 1980s. Since then, the epidemic has spread rapidly throughout the world, and turned out to be one of the largest global medical challenges in history (Connolly, 2003). HIV-infection is still regarded as one of the most serious contagious diseases as it brings along damaging consequences for individuals as well as for the society. It represents a huge threat to human health and development, and remains a prominent health concern for every single country in the world (Message System for Infectious Diseases [MSIS], 2013; Norwegian Institute of Public Health [FHI], 2013; Shisana & Simbayi, 2002).

The HIV-virus infects through bodily fluids like blood, semen, vaginal secretion and other secretions. The most common way to get infected is through unprotected sex with an HIV-positive person. Injections, open wounds, pregnancy, birth and breast-feeding are other sources of infection (HivNorge, 2007). New strict control routines with HIV-testing are conducted on blood transfusions which makes it a lot safer than it was before (Connolly, 2003). When someone is HIV-infected the virus occurs in the individual's bodily fluids, where it attacks the immune system. Consequently, the body is no longer as capable of resisting infections. T-cells—blood cells that fight against damaging microorganisms—get destroyed by the HIV-virus. The virus enters the individual's t-cells and changes the composition of the DNA, so that the body is not able to produce new t-cells. It starts producing HIV-virus instead. When the virus reproduces itself mutations are created (ibid.). It can take up to 10 years from when a person gets HIV-infected to the development of AIDS. At this point the immune system is profoundly broken down and the person is likely to get serious infections and cancers. “Opportunistic” infections like these are not usually seen in people with an intact immune system (Health and Human Services, 2001). A person in good health usually has between 500 and 1000 t-cells per mm^3 of blood. When the number of t-cells go down to less than 500 per mm^3 of blood it usually is a sign of AIDS (Connolly, 2003).

No current treatment can cure HIV/AIDS, but huge advances have been made (Norwegian Health Computer Science [NHI], 2013). In the 1990s protease inhibitors was the

most common treatment for HIV. They attack an enzyme called “protease” which has to be present in the spread of the HIV-virus. When the enzyme is blocked by the inhibitors the HIV-virus is no longer able to reproduce (Connolly, 2003). Antiretroviral medicaments are efficient treatments for the HIV-virus. One of them is called “Antiretroviral Therapy” (ART). This lifelong treatment restrains the HIV-virus from reproducing itself. It also reduces the risk that HIV-infected pregnant women transfer the virus to the fetus (ibid.). ART lowers both the chance of HIV developing into AIDS, and the risk of dying from AIDS. Early treatment implies less chance of infecting others (NHI, 2013). Today’s standard of treatment is called “Highly Active Antiretroviral Therapy” (HAART), which involves aggressive treatment regimens used to suppress the progression of HIV. The combination of different drugs is the most characteristic hallmark of the HAART therapy (About health, 2014). When it comes to prevention; condom use, increased HIV-testing and more HIV-infected people on treatment are the most important measures (FHI, 2014b). In today’s research, development of vaccines and a cure is the focal point (AIDS Research Alliance, 2014a, 2014b). As a part of the cultural perspective in this thesis, the cultural contexts of HIV/AIDS in South Africa and Norway will now be presented.

Cultural Contexts of HIV/AIDS. Knowledge, attitudes and sexual behavior related to HIV/AIDS vary across different cultures. Also, people in different cultures may practice HIV/AIDS related sexual behavior differently. Generally, it is crucial to look at HIV/AIDS in context to be able to grasp different perspectives on the complexities involved. If we are to understand the course of the disease in South Africa, it is vital to have a cultural perspective (Walker, Reid & Cornell, 2004). On that account, a comparison between two cultures will constitute a cultural perspective in the study. The topic itself and a survey model used as a conceptual framework throughout this study, represent a health perspective.

Sub-Saharan Africa remains the most HIV-affected region in the world with 69% of the world’s HIV-positive population (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2013). Poor health care, poor knowledge about HIV/AIDS and lack of safe-sex practices have been particularly highlighted as explanations for the spread of HIV/AIDS. Lack of safe-sex practices can be related to traditions and cultural beliefs that do not accept condom use (Connolly, 2003). In some African countries, cultural beliefs around fluid exchange exist. Exchange of fluids, which has a lower risk of occurring when using a condom, is supposed to maintain good health (Walker et al., 2004). Basic knowledge about HIV/AIDS seems to be very limited in several African communities, especially among women (Burgoyne & Drummond, 2008). Since the epidemic is incurable, the lack of

knowledge about sexually transmitted infections (STIs)—including HIV—is a major concern (United Nations Children’s Fund [UNICEF], 2002).

There is wide acknowledgement that the African contexts imply complex challenges to the HIV/AIDS epidemic, especially due to under-resourced environments (Shisana & Simbayi, 2002). South Africa is the country with most HIV-infected people in the world, and AIDS is the leading cause of death (AVERT, 2013). In 2013, 6.300.000 people were estimated to live with HIV in South Africa. The same year it was estimated 200.000 deaths due to AIDS within the country (UNAIDS, 2014). Cape Town is a part of the Western Cape, one of South Africa’s nine provinces (HOPE Cape Town Association, 2014). A prevalence rate that measures both HIV and AIDS in the Western Cape showed an increase from 8% in 2003 to 15% in 2006. In 2011 the prevalence rate rose to 19% (*ibid.*).

The spread of HIV/AIDS in South Africa is largely an outcome of poverty, but the epidemic and its causes have a complex nature. Hence, it is also important to consider factors like personal choices, gender, political responses and change, violence, sexual networks and cultural norms (Walker et al., 2004). There is a consensus among social scientists that the South African HIV/AIDS epidemic is deeply rooted in structures of social inequality (Achmat & Simcock, 2007). The social inequality runs deep into exploitation and oppression. Colonialism, Apartheid, migrant labor, rural labor reservoirs and unequal social investment have all created vulnerability to HIV-infection (*ibid.*). A combination of these factors has influenced the pattern and profile of the profoundly social epidemic, and has created an environment in which HIV/AIDS is spreading at an unprecedented rate (Walker et al., 2004). In contemporary South Africa, sexual behavior, power and risk lie at the heart of understanding the disease (*ibid.*). HIV/AIDS in South Africa, and the scale of the global HIV/AIDS challenge and epidemiological evidence, can serve as lessons for countries that have a low-level prevalence of the epidemic (Achmat & Simcock, 2007). Norway is a good example of such a country that is considered low-level HIV-prevalent (MSIS, 2013).

The HIV-infection rate has somewhat increased in some Western countries (Connolly, 2003): The epidemic is currently spreading rapidly in Eastern Europe (Averting HIV and AIDS [AVERT], 2012a). In 2011, increasing rates of HIV-transmission through heterosexual sex and among injecting drug users were shown. In Western Europe there are also increasing rates of HIV-transmission. The number of reported HIV-diagnoses increased from 12.748 in 2000 to 26.204 in 2011 (*ibid.*). In Western countries AIDS-incidence and AIDS-mortality have declined steadily since 2001, as treatments have become widely available (AVERT, 2012b). In Norway, the most common STIs among young adults are Chlamydia and Human

Papilloma Virus (Træen & Štulhofer, 2012). The fact that Norway is considered a low-incidence country for HIV (MSIS, 2013); is reflected in the fact that the people who live with HIV in Norway—as well as in other Western countries—are in a more fortunate situation than others. They usually have access to the best and most efficient medication and treatment (Connolly, 2003).

In 2008, 299 new people were diagnosed with HIV in Norway (FHI, 2009). This is the highest number of diagnosis registered in Norway in history. The increase can be explained by more HIV-infected gay men and a higher number of HIV-infected immigrants (*ibid.*). There were 233 newly diagnosed HIV-cases in Norway in 2013, compared to 242 in 2012 (FHI, 2014b). The decrease was mainly seen among the heterosexual population. Among gay men the HIV-figures remain high. This goes for both gay men who got infected while living in Norway and immigrants who got infected before arrival. In 2013, a total number of 5.371 people were living with HIV in Norway. Nearly half of the diagnosed people had an immigrant background, which demonstrated that the trend of HIV-positive gay men intensified (*ibid.*). The situation sheds light to the fact that HIV-infection is more common among some groups of immigrants than it is in the general Norwegian population (FHI, 2014a). Several departments, primary health care and voluntary organizations play a major role in HIV related work, both nationally and internationally (*ibid.*). To enlighten important variables of this study we will now present earlier research from South Africa and Norway, about background factors, knowledge, attitudes and sexual risk behavior related to HIV/AIDS.

Earlier Research

Many studies about knowledge, attitudes and practice related to HIV/AIDS have been published earlier (e.g., Cleland & Ferry, 1995; Eaton, Flisher & Aarø, 2003; Mandal, Nuland & Grønningsæter, 2008; Valente, Paredes & Poppe, 1998). Due to the large quantities of existing literature, the topic in the present study was limited to a few aspects. We made a decision to focus on background factors, knowledge and attitudes to predict condom use, by comparing two different cultural contexts.

Background Factors. It is widely accepted that individual-specific socio-demographic characteristics have an influence on knowledge about infectious diseases and health in general (Bernardi, 2002). Among the background factors in the study we looked into those we considered to be most relevant for predicting condom use; the biological characteristics—gender and age—and sexual history in terms of number of sexual partners in life.

Gender. Gender is perhaps one of the most crucial factors contributing to vulnerability to HIV, and the impact on HIV/AIDS (Mane & Aggleton, 2001). Men are the ones who use condoms and therefore they are more in control during sexual intercourse. This fact as well as biological differences between the genders gives us reason to believe that there are differences in sexual risk behavior between the men and women. Physiologically, women are more vulnerable to HIV-infection than men are (World Health Organization [WHO], 2000).

Women in sub-Saharan Africa are known to be one of the most vulnerable populations for HIV in the world (Burgoyne & Drummond, 2008). Research has shown that women in sub-Saharan Africa tend to be less knowledgeable about HIV/AIDS than men are (ibid.). In South Africa gender inequality is visible in norms and expectations of manhood and masculinity, and may contribute to sexual risk behavior. For instance, men can refuse to use a condom because it reduces the pleasure and is associated with a stigma (Walker et al., 2004). In a study of South African youth, boys reported earlier sexual debut than girls did (Eaton et al., 2003). In a survey among young adults in South Africa, both men and women were significantly more likely to report condom use during their most recent sexual intercourse if they used a condom during their very first intercourse, or reported behavioral changes attributable to HIV/AIDS (Hendriksen, Pettifor, Jae-Lee, Coates & Rees, 2007).

In a study from Norway, it was shown that women had consistently more knowledge about HIV than men had (Mandal et al., 2008). Compared to men, women also appeared to be less skeptical to people living with HIV (ibid.). The group that disagreed most to the statement that everyone has an equal responsibility to avoid HIV-infection was Norwegian men aged 15-24 years. The participants in the same study were asked how they would have reacted if a colleague or friend claimed to be HIV-positive. The youngest and the oldest groups of men and women were most skeptical. Men would avoid close contact with the HIV-infected person to a higher degree than women (ibid.). In a Norwegian survey among 16-24 year-olds significantly more men (56%) than women (45%) reported having used condoms during their first sexual intercourse with the most recent partner (Træen & Gravningen, 2011).

Age. According to Eaton et al. (2003) young people have the fastest growing HIV-infection rates of any group. More than half of those newly infected with HIV were between 15-24 years of age (UNICEF, 2002).

Sub-Saharan Africa was the region with the lowest level of contraceptive prevalence. Only 21% women of reproductive age who were married or in a relationship used some method of contraception (United Nations [UN], 2010). In a South African study, the HIV-incidence rate for 15-24 year-olds was higher than the incidence rate for 25 year-olds or older

(Rehle et al., 2007). Young people can feel an exaggerated sense of invulnerability, due to their limited personal experience of unfavorable outcomes. This exaggerated sense of invulnerability for young people can be related to a low threshold for potential risky sexual behavior (Elkind, 1967). South African university students fall in an age group that might be considered especially vulnerable to HIV-infection (Mwaba & Naidoo, 2005). In South Africa, older adults are most knowledgeable about HIV/AIDS and young adults are slightly behind. People over 50 years of age are among the least educated groups (MEDWISER, 2013). A study of South African youth indicated moderately adequate knowledge about HIV/AIDS (Peltzer & Seoka, 2002). HIV/AIDS knowledge was associated with more positive attitudes towards people with HIV/AIDS and more consistent condom use. At the youth's first sexual intercourse, 19% of them reported condom use whereas 81% did not use condoms (ibid.).

In Norway it is shown that as teenagers grow older and become more sexually experienced they often switch from condom use to use of hormonal contraception (Træen, Štulhofer & Landripet, 2011). An overview showed that the contraceptive prevalence in Norway was 88% (United Nations [UN], 2010). In a Norwegian study, 15-24 year-olds showed less knowledge about HIV-infection and HIV-positives' rights, than older age groups (Mandal et al., 2008). In the same study it was found that as age increased, people showed more positive attitudes towards HIV related issues up until a certain age, when the attitudes became more negative again. When people reported on their own responsibility to avoid HIV-infection, the proportion of participants who completely agreed was lowest in the youngest group of people, among 15-24 year-olds (ibid.). Thereby, the youngest group of people practiced least safe-sex behavior due to lack of feeling a responsibility to prevent HIV-infection.

Number of Sexual Partners. In this study we have chosen number of sexual partners in life as an indicator of a person's sexual (risk) history. It can be referred to as an *individual* risk of HIV/AIDS (Mane & Aggleton, 2001) which is influenced by what people know and understand, what they feel about relationships and different situations, and eventually what they do in practice (ibid.).

In a study among sexually experienced 15-24 year-olds in South Africa, nearly 25% of men and 45% of women reported having had only one lifetime sexual partner. The mean number of lifetime sexual partners was significantly higher among men than women (7.2 vs. 4.7, $p < .01$) (Pettifor et al., 2005). In another South African study the majority of school-going adolescents reported having one or two sexual partners in their lifetime. A persistent minority of between 1-5% women and 10-25% men had more than four sexual partners per

year (Eaton et al., 2003).

In some studies of sexual habits among a heterosexual population in Norway, a repetitive finding was that a large share of people reported just a few sexual partners in their lives. A small minority had a large amount of sexual partners throughout their lives (Træen, Stigum & Magnus, 2003). In 2002, 10% men and 13% women (non-cohabitant, aged 18-49) reported having had only one sexual partner. 33% men and 27% claimed to have had 11 or more sexual partners in their lives. Among cohabitants also aged 18-49, 17% men and 22% women reported only one lifetime partner, while 27% men and 15% women responded 11 or more lifetime partners (ibid.). HIV-counselling and testing appeared to be significant motivational factors for prevention and risk reduction (UNAIDS, 1998). A report noted that among a sample of HIV-infected gay men in Norway the number of sexual partners decreased from an average of 4.3 a year before counselling and testing, to 1.6 after (ibid.).

Knowledge About HIV/AIDS and Condoms. Knowledge about HIV/AIDS does not always lead to less sexual risk behavior; because despite knowledge people still tend to practice potentially risky sexual behavior. This is related to the fact that a lot of people do not believe that they are at risk. Besides, some people lack tools and incentives to adopt safe-sex behaviors (UNICEF, 2002).

Many misconceptions about HIV-transmissions were found among participants in a South African study (Govender et al., 1992). As much as 64% believed toilet seats was a route by which HIV-infection could be acquired, and 70% thought donating blood was a mode of transmission (ibid.). In another survey about AIDS related knowledge, South Africans could answer about 70% of the questions correctly (Peltzer, Cherian & Cherian, 1998). These numbers show a fair amount of accurate knowledge about AIDS. However, 18% of the participants were of the opinion that AIDS did not exist, and 19% believed there was a cure for AIDS. Several studies have shown that while general knowledge about HIV/AIDS increased in South Africa, very little change of behavior was observed (ibid.). Although knowledge about safe-sex behaviors—such as use of condoms—is of huge importance in working with HIV-prevention (Mandal et al., 2008); this type of knowledge is limited and abstract in South Africa. One widespread idea among South Africans in general, was that condoms can disappear into the woman and cause the man serious injury (Walker et al., 2004). A South African study that examined the determinants of sexual behavior in adolescents showed high levels of knowledge and awareness about HIV/AIDS/STIs. This was evidenced by high levels of knowledge on causes and transmission, and the acceptance of condoms as a means of protection against HIV/STIs. However, a discrepancy between

unprotected sexual intercourse and improved knowledge and acceptance of condoms appeared in the same study (James, Reddy, Taylor & Jinabhai, 2004). Most studies that show a relatively high level of knowledge about the transmission and prevention of HIV/AIDS also report some caveats in knowledge. The caveats may lead to misconceptions and risky behaviors (Svenson, Carmel & Varnhagen, 1997). According to Greenlee and Ridley (1993), knowledge about sexual risk behaviors including condom use and concern about risk for HIV-infection is often reported to be unrelated to safe-sex behavior.

A Norwegian study showed fairly good knowledge about the development of HIV-infection and the dangers associated with unprotected sex and HIV/STIs (Mandal et al., 2008). The study also showed a lack of knowledge on ways HIV does not affect. Men, the youngest and the oldest age groups showed the lowest level of knowledge. Results from the same study showed the following pattern: That people with a high level of knowledge about HIV had more positive attitudes towards the social rights and opportunities of HIV-infected persons. Lack of HIV related knowledge was associated with negative attitudes towards HIV-positives' rights and opportunities (ibid.).

Attitudes Towards HIV/AIDS and Condoms. Even though people's attitudes towards HIV/AIDS do not always correspond with behavior in real life, they make up an important aspect to investigate; seeing that attitudes can give us a deeper understanding of what and why people act as they do in practice (Mandal et al., 2008).

A study from South Africa showed negative attitudes towards condom use, and its acceptability and safety (Govender et al., 1992). Despite the knowledge that AIDS is a serious threat and that condoms are efficient in preventing HIV-infection, few felt a responsibility to use condoms. At the same time several of the participants showed negative attitudes towards AIDS patients (ibid.). In another study based on South African students' attitudes towards condom use, over 80% reported that they would refuse to have sex if their partner was unwilling to use a condom (Mwaba & Naidoo, 2005). A study about young people and HIV/AIDS/STIs revealed that despite wide acceptance of condoms and a favorable attitude towards them, actual condom use was low among the students (James et al., 2004), and so was the confidence in how to use them. A large number of students were unsure about the effects of condom use. Negative attitudes were widespread; such as a conviction that condoms could harm the body, were embarrassing to use, and took the fun out of sex (ibid.).

In a Norwegian survey, the participants showed fairly positive attitudes towards using condoms (Mandal et al., 2008). 98% of the participants agreed to the statement that everyone has their own responsibility to avoid getting infected with HIV. The statement supposedly had

huge implications for people's sexual behavior related to condom use (ibid.). Other statements about HIV-positives' rights and possibilities to participate in a work setting showed that intolerance and skepticism were prevalent among Norwegians. How close people were to the HIV-situation in question affected their attitudes. It seemed the closer to the situation the more restrictive attitudes. An example of such a close context was a question of whether HIV-positive people should be allowed to take care of their own children (ibid.).

Sexual Risk Behavior. According to Svenson et al. (1997); sexual risk behavior in terms of HIV/STIs includes participation in casual sex, a failure to use condoms and often change of sexual partners. The dependent variable in the present study is condom use. We chose to focus on this aspect because having unprotected sexual intercourse is the most common way to get HIV-infected (HivNorge, 2007). The most recommended and efficient means to reduce the chances of contracting HIV is using condoms. To understand condom use the sexual context must be taken into account (Træen & Štulhofer, 2012). Rates about use of condoms vary in different societies and cultures (Svenson et al. 1997). Worldwide, the majority of people between 15-24 years of age had some knowledge about HIV/AIDS, but still they did not believe they were at risk and often they did not protect themselves (UNICEF, 2002). The reasons for this were lack of skills, lack of support, or lack of means to perform safe-sex behavior. On the other hand, when people are provided with such skills, support or means, they show responsible choices to protect themselves (ibid.).

Growing evidence points to the complexity of sexual behavior due to influences at three different levels. These are firstly; factors within the person, secondly; close context factors like interpersonal relationships and environment, and thirdly; distal context factors influenced by culture and structure (Eaton et al., 2003). We will use these three levels further to organize the empiricism related to the promotion or perpetuation of condom use.

Personal Factors. This level includes cognitions, knowledge and beliefs related to sexual behavior and HIV/AIDS, in addition to thoughts about the self (ibid.). People's behaviors and individual choices determine whether one is in the at-risk group for HIV-infection. So, even though some groups are more exposed than others, no one is not at all at risk and precautions are extremely important (Connolly, 2003).

The three types of sexual risk behaviors that have been most frequently focused on in South Africa are; being sexually active (as opposed to postponing or abstaining from sexual activity), having many partners, and practicing unprotected sex (irregular or incorrect use of condoms) (Eaton et al., 2003). Of young people in South Africa, at least 50% are sexually active by the age of 16, and probably 20% are sexually active by the age of 20. Overall,

sexually active young people in South Africa use condoms irregularly, if at all. Between 50-60% of sexually active youth reported having put themselves at risk for HIV-infection by not using condoms (ibid). This can be related to the fact that basic knowledge of condom use is limited and abstract. Lack of access to condoms also plays a crucial factor (Walker et al., 2004). Another large risk factor is low perceived personal vulnerability because it reduces the motivation to take necessary precautions. Many young people in South Africa tend to underestimate their risk of getting HIV-infected. Risk perceptions were remarkably low in some South African groups with high rates of sexual activity and low condom use. Low self-esteem seemed to weaken abstinence, monogamy and condom use (Eaton et al., 2003).

Of sexually active young adults in Norway the majority assessed their risk of becoming infected with HIV or other STIs as low or negligible (Træen & Štulhofer, 2012). A study showed that Norwegian adolescents were concerned with protecting themselves against unwanted pregnancy but not with contracting STIs (ibid.). Based on their behavior young adults did not seem to accept contraception as natural even though it was considered normal (Træen & Gravningen, 2011). A higher HIV-risk self-assessment was observed among young adults who had same-sex sexual experience, who were single at the time of the survey, and who reported a higher number of sexual partners during the past year. Among the participants who did not use a condom at most recent sexual intercourse 98% reported no or low risk of getting infected with HIV. Additionally, 79% of the participants reported no or low risk of getting infected with other STIs (Træen & Štulhofer, 2012).

Close Context Factors. This level comprises interpersonal relationships and the physical and organizational environment (ibid.).

According to a South African study, to introduce condoms into a sexual encounter was perceived to ruin the romance and the intimacy of the moment (Meyer-Weitz, Reddy, Weijts, Van Den Borne & Kok, 1998). At the same time negotiating condom use with one's partner could be a positive experience, according to Wood and Foster (1995). A mutual agreement between partners to change their behavior could also strengthen the relationship, increase mutual respect and remove worries about risk of infection (ibid.). But sexual negotiations like these lacked in many sexual relationships among young South Africans (Eaton et al., 2003). Male-dominated and violent relationships are not unusual in South Africa. The climate of violence and abuse makes it impossible to negotiate safer-sex practices for women (Walker et al., 2004). The man controls the sexual activity (Meyer-Weitz et al., 1998). Young women's ability to practice safer sex is constrained by the male partner's demands (Eaton et al., 2003). Consequently the threat of violence or rejection prevents women from insisting on using

condoms (Meyer-Weitz et al., 1998).

In a survey among 16-24 year-olds in Norway a total of 50% claimed they had used condoms during the first sexual intercourse with their most recent partner (Træen & Gravningen, 2011). It was most common not to have used any kind of contraception for the participants who had had sex with a casual partner (29%). According to Træen and Gravningen (2011) the three most important reasons for having used condoms during the most recent intercourse were; to avoid pregnancy (92%), to avoid STIs (46%) and to avoid HIV/AIDS (33%). In a survey of 18-24 year old Norwegians, men who reported earlier same-sex experience were more likely than those without such experience to have used a condom at most recent sexual intercourse (Træen et al., 2011). Similarly, those who reported that their most recent intercourse was with a casual partner were more likely to have used a condom than those who reported that their last sexual experience was with a steady partner. Among the Norwegian women a similar pattern was found: The likelihood of condom use was decreased by years of sexual activity, but increased by condom use at first intercourse and by having most recent sexual intercourse with a casual partner (ibid.).

Distal Context Factors. This level comprises culture such as norms and traditions, and structural factors such as legal, political, economic and organizational elements of society (Eaton et al., 2003).

There is a sharp division between rich and poor in South Africa. Poverty can be linked to high levels of sexual activity and poor knowledge about HIV/AIDS. Poverty interacts with gender inequality (Walker et al., 2004). Even though 88% of the sexually active respondents agreed that condoms protected against AIDS in a South African study, none claimed that they actually used condoms (Govender et al., 1992). An explanation for this might be that in South Africa condoms have been stigmatized due to connotations of disease associated with them (Walker et al., 2004). Some people assume that if you want to use a condom you are sick. It is considered lack of trust between partners as well. Partners are often asked to express their love and trust by having unprotected sex. Traditional notions of masculinity are strongly associated with risk-taking behaviors regarding polygamy and manhood. Traditions claimed that while men were allowed to have multiple partners, women were expected to be monogamous. This demonstrated the gender inequalities in South African culture (ibid.); and also illustrates a discourse of rights. Men's rights appear when they are allowed to use force, and to show a need for many sexual partners. Research into cultural beliefs regarding HIV/AIDS showed that both South African men and women believe that male sexuality is determined by biology. The belief involved sexual urges which cause inevitable sexual

behavior patterns (ibid). For some teenagers a stigma existed; that condoms challenged the image of the healthy up-and-coming man. A widespread view is that sex is about passion and desire, whereas condom use is about rationality. Sex is a natural enjoyable experience and condoms are seen as an unnatural intrusion of this. In a South African study, the future threat of AIDS was seen as less important than the immediate enjoyment of sex (ibid.).

Sexuality in the Nordic countries is often considered to represent “liberated” cultures (Træen et al., 2011). In the Norwegian context it is the responsible aspects of sexuality rather than the passionate ones that are idealized and socially accepted. Unless pregnancy is a goal, heterosexual persons are supposed to act responsibly and use contraception during sexual intercourse (Træen, Stigum & Eskild, 2002). This mutual responsibility of using contraception during intercourse is not socially stigmatized (Træen & Hovland, 1998). The distinction between contraceptive behavior and STI protective behavior is important because the different mechanisms and motivations that underlie these behaviors have important implications for preventive efforts (Træen & Gravningen, 2011). In a romantic heterosexual script, fertility is presumed to be a *natural* quality of the sexual encounters. In contrast, inferring that one’s sexual partner has an STI is not considered natural at all (Træen & Hovland, 1998).

Theoretical Perspectives

KAP as a Conceptual Framework. To understand why people act as they do—also sexually—it is said that nothing is as good as a theory. The knowledge, attitude and practice model, often referred to as the KAP model, will be used as a conceptual framework for our study on HIV/AIDS. The KAP model concerns the relationship between individuals’ knowledge, attitudes and practice (behavior) to understand the process of behavioral and social change (Singhal, Rao, & Pant, 2006). The main idea behind the traditional KAP model is the specific order of the concepts. Firstly, an individual gains knowledge about something. Secondly, attitudes towards the phenomenon develop. Thirdly, the individual engages in a behavioral matter (Valente et al., 1998). The three concepts of the KAP model and the correlations between them will now be explained.

Knowledge can be defined as: “Information and understanding of a specific topic or of the world in general, usually acquired by experience or by learning” (VandenBos, 2007, p. 516). Knowledge can be operationalized and measured to a high degree (Mandal et al., 2008). According to Jovchelovitch (2007, p. 1) and his social psychological approach to knowledge: “We can only reach knowledge if we free it from the illusions of our perceptions, the misunderstandings and biases of our cultures, the interest of our politics and the passions of

our emotional lives”.

Knowledge and attitudes are two concepts that call for each other, and the influence is reciprocal. A high degree of knowledge is often regarded as a premise for the development of positive attitudes. On the other hand, negative attitudes and prejudice towards HIV-positives’ rights and possibilities of participation in different arenas may form a barrier to seek knowledge about HIV/AIDS (Mandal et al., 2008). An essential difference between knowledge and attitudes is that attitudes involve taking an active stand towards topics or questions. Knowledge is easily measured, but the concept of attitudes is not as clear. An important reason for the unclearness is that attitudes often are the result of an individual’s experiences and knowledge, which makes attitudes a complex term. Attitudes are based on opinions, assessments, norms, rules and possibly prejudice that vary from person to person. An important purpose of investigating both the level of knowledge and attitudes is to get a closer picture of which existing coherences there are between the two concepts (ibid.). An *attitude* can be defined as:

A relatively enduring and general evaluation of an object, person, group, issue, or concept on a scale ranging from negative to positive. Attitudes provide summary evaluations of target objects and are often assumed to be derived from specific beliefs, emotions, and past behaviors associated with those objects. (VandenBos, 2007, p. 40)

Based on this we can call attitudes “the degree of emotion”. An attitude can function as a way of structuring the world to give meaning to it through knowledge or understanding (Kunnskapssenteret, 2014). If we know a person’s attitudes we can predict the behavior to some degree. Attitudes can predict behavior to a higher degree when the attitudes are specific instead of general. When the attitudes towards an object are strong, they also seem to predict behavior to a higher degree than when attitudes are weak (ibid.).

An explanation of behavior is; an individual’s activities in response to internal or external stimuli. This includes unconscious processes, introspectively observable activities and objectively observable activities (VandenBos, 2007). Risk self-assessment related to sexual risk behavior is a process where an individual makes an evaluation of the probability that something negative may happen to him in the future. There is a general tendency for people to rate their own risks of for instance an accident as lower than others’ (Joffe, 2003). Weinstein (1984) called it “unrealistic optimism”. Unrealistic optimism can be related to sexual risk behavior when usually people consider their own risk of getting HIV-infected as lower than others’.

Prior research of attitudinal and behavior relations supported the proposition that

attitudes, intentions and behavior are highly correlated (Kim & Hunter, 1993). Social and behavioral research has been used to measure the presence of the relevant concepts; knowledge about selected health issues, attitudes towards them, and subsequent behavior (Valente et al., 1998). More specifically related to this study, the KAP model has been widely used as a means to collect quantitative information and evaluation on HIV/AIDS related issues with particular focus on sexual behaviors (Schopper, Doussantousse & Orav, 1993).

Although researchers have proposed many different theoretical versions of the KAP model, the most frequently applied is the cognitive model (Valente et al., 1998). This traditional model already explained, is illustrated in Figure 1. Figure 1 reflects the argument that first of all, individuals learn about practice and develop knowledge. Second of all, they develop a positive attitude towards it, and third of all, they engage in related behavior (ibid.)

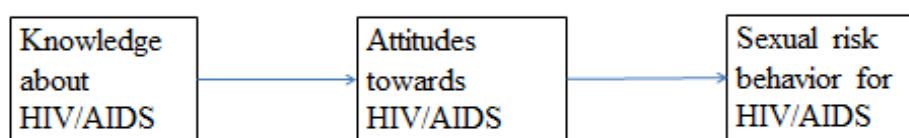


Figure 1. The original KAP model shows the order of the components: Knowledge – Attitudes – Practice.

Critique of the KAP Model.

An Alternative Model. In the early 1970s the KAP model was widely used in survey research (Cleland & Ferry, 1995). However, attempts to use standardized methods of the KAP model in different countries resulted in difficulties of acceptance, comprehension, and meaning. The surveys were criticized because of this (Valente et al., 1998). Consequently the

frequency of using the KAP model in surveys diminished during the 1970s (Cleland & Ferry, 1995). Practically researchers of all behavior change studies treated behavior as the outcome variable to be predicted by knowledge and attitudes. Knowledge and attitudes were never considered to be the dependent variables. This preoccupation has been criticized namely for overlooking other aspects that involve behavior change before knowledge and attitudes change. Knowledge and attitudes may also change after an individual has had a new experience, not exclusively before (Valente et al., 1998). According to this criticism the pointers from Figure 1 might as well allocate in other directions, illustrated in Figure 2.

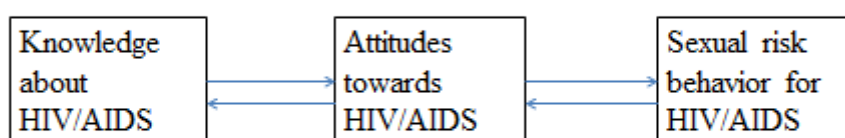


Figure 2. The adjusted KAP model shows alternative orders of the components (e.g. Practice – Attitudes – Knowledge).

In connection to HIV/AIDS; knowledge, attitudes and sexual risk behavior may affect each other in different directions and order. Practice does not necessarily have to be the outcome; it could just as well be a predictor of knowledge and attitudes. Despite this criticism, attitudinal and behavioral changes were both essential, integral parts of understanding and preventing HIV/AIDS (Cleland & Ferry, 1995). However, the development of research on the KAP concepts was again used as a basis for designing and evaluating interventions.

Because of the need to provide a broad account of how people respond to HIV/AIDS and related information, a *beliefs* component was added to the traditional KAP model. This

made attitudes and beliefs two separate parts of the new model. For instance, after developing knowledge and attitudes towards condom use, a person had to go through one more link, the beliefs component, before practice eventually showed whether or not the person ended up using a condom.

One concern with the KABP model was to define the concepts and measures to make them useful in as many cultural contexts as possible (ibid.). The KABP surveys have been criticized for the variables being poor predictors of actual behavior. They may have had lack of validity and reliability as well. Another critique was that the study outcome could be too simplistic to answer complex questions about the determinants of behavior (Katzenellenbogen, Joubert & Karim, 1997); like why people do not protect themselves during sexual intercourse.

Leon Festinger's theory of cognitive dissonance will be put up against The KAP model framework. Contributions from Daryl Bem's self-perception theory of attitude change will also be used as a relevant theoretical perspective. Both of them will be presented thoroughly below.

The Theory of Cognitive Dissonance. A proposed alternative to the original KAP model was a dissonance model where practice preceded positive attitudes which again lead to knowledge (PAK). The knowledge outcome was regarded as gained through experience (Chaffee & Roser, 1986). For instance, pleasurable experiences with sexual intercourse could create positive attitudes which resulted in increased knowledge based on the experience. The dissonance part of PAK occurred when people engaged in behaviors before they had developed positive attitudes towards the practice, and possessed minimal knowledge about them (ibid.). For example, if a woman's first sexual intercourse was unprotected and she had not developed any positive attitudes towards, and knowledge about, safe-sex behavior in advance, dissonance was likely to occur.

In 1957, Leon Festinger introduced his theory of cognitive dissonance which turned out to be one of the most influential theories in social psychology (Cooper, 2007). When he presented the theory he pointed out that people do not like inconsistency within themselves and therefore they strive towards consistency. He called the resolving of inconsistency a "drive" to remark that it was stronger than a preference (ibid.). He claimed that attitudes and opinions usually exist in clusters that are internally consistent (Festinger, 1957). Several studies report such consistency among a person's different attitudes. An exception was for instance that even though a person knew that having sex without a condom was risky—and in the worst case could have huge consequences—the person still did not use a condom. In line

with the cognitive dissonance theory, and related to the KAP model, the most obvious thing for the person having sex without a condom was attempting to rationalize the inconsistencies. For example, the person may have told himself that having sex with a condom would not be as pleasurable as without one. Consequently, to have sex without a condom would be consistent with the person's own ideas about sexual intercourse. This successful rationalization was not always the case.

When people failed at explaining or rationalizing inconsistencies they experienced a state of psychological uncomfortableness (ibid.). Festinger (1957) replaced this unpleasant *inconsistency* with the term *dissonance* and *consistency* with the term *consonance*. The psychological uncomfortableness could arise from cognitive units like cultural behavior, logical inconsistency, past experience or opinions (ibid.). His two basic points were firstly, that being psychologically uncomfortable would make the person motivated to reduce the dissonance and achieve consonance. Secondly, when dissonance was present the person would also try to avoid information and situations that could increase the dissonance (ibid.).

One important consequence of Festinger's theory was that it made it easier to understand some circumstances where the reality and the cognitive elements did not correspond (ibid.). The cognitive elements referred to cognition which involved things people knew about themselves, their attitudes, their behavior and their surroundings. "Elements of knowledge" they were called. So, whenever there was sufficient control over the environment, the reduction of cognitive dissonance was possible by changing some of the elements of knowledge (Cooper, 2007). According to Festinger (1957) it is essential to look at the magnitude of dissonance because it determines how heavy the pressure is to reduce the uncomfortableness. The distinction specifies how strong the dissonant pressure is. The greater the inconsistency the more motivated for—or driven to—action the person would be to reduce it (Cooper, 2007).

If we compare the cognitive dissonance theory to the original KAP model it is clear that the assumptions are different. While the KAP model takes for granted that knowledge and attitudes are predictors of practice, the cognitive dissonance theory is based on practice as a predictor of knowledge and attitudes (PAK).

The theory of cognitive dissonance has generated research, revision and controversy as it can be applied to many different psychological topics. The reason for this is that the theory was stated in general and abstract terms (Harmon-Jones & Mills, 1999). It was uncomplicated and basic, but it still made predictions that were new and subtle (Cooper, 2007).

Gradual, controversies towards the theory of cognitive dissonance developed about

how the process unfolded, about its antecedents and its consequences. In spite of the existing controversies, cognitive dissonance is still well-established as a reliable phenomenon (ibid.). Many paradigms have been suggested, and both the original and the revised versions of the theory assume that situations triggering dissonance produce a drive that results in cognitive changes. The revisions offer different theoretical interpretations when it comes to the underlying motivation (Harmon-Jones & Mills, 1999). On the other hand, they agreed with the original cognitive dissonance assumption that people experience their own behavior before knowledge and attitudes develop (PAK). From this research it seems that the revisions are still put up against the KAP model. These disagreements are a major source of the current controversy and challenges about dissonance (ibid.).

Next, one of the alternative interpretations of the theory of cognitive dissonance the self-perception theory will now be presented. As questioned by Cooper (2007, p. 41): “Do people change their attitudes to reduce unpleasant tension or are they simply making inferences from their behavior?”

The Self-Perception Theory. In a theoretical analysis the entire foundation of the cognitive dissonance theory was examined (Cooper, 2007). This round of criticism focused on the theory itself rather than arguing that there was something wrong with the procedure in dissonance experiments. A theory that agreed with all of the research findings of a competing theory could be problematic because it made it hard to discriminate between the two. But the founder added to his argument that not a definitive test of the two theories was consistent with his self-perception theory (ibid.).

A behavioral approach represented by a functional analysis was made. It emphasized the contrast to the conceptual, phenomenological approach of cognitive dissonance theory (Bem, 1967). In the behavioral approach it was suggested that the major dependent variables; attitude statements, could be looked upon as interpersonal judgment. Here the observer and the observed happened to be the same individual. Bem (1967) named this account the “self-perception theory”. Self-perception can be described as individuals’ ability to respond differentially to their own behavior and their controlling variables. It is a product of social interaction (Skinner, 1957). Bem (1967) argued that the dissonance phenomena instead of being the result of motivation to reduce discomfort, is due to a *non-motivational* process. Hence, people merely conclude their attitudes from their own behavior and the circumstances under which the behavior occurs (Harmon-Jones & Mills, 1999).

Unless an attitude is clear people have to use their own behavior to infer their own attitudes (Cooper, 2007). Having clear attitudes supported the KAP model as the attitude was

apparent before practice. For example, if a person has a clear attitude that the use of protection is important when having sex with a partner for the first time, the person will use a condom without the need for observation of own actions first. People do not always have insights and consciousness of their own attitudes and beliefs. Given that the attitude is unclear, behavior is the first crucial determinant in knowing what people believe. The second most crucial determinant is people's analysis of the context, or as Bem (1967) called it; "environmental conditions". If an attitude was not salient, people would have to infer what their own attitudes were by examining their behavior. They would thereby need to scan their past behavior, analyze the environmental stimuli, and make a logical inference about the attitude in question. The inference was then shown in a response (*ibid.*). This is where the self-perception theory no longer supports the appearance order of the components in the KAP model. For instance, if people's attitudes towards condom use are not clear, they have to scan their past behavior in the situation and analyze relevant stimuli. Based on these factors people make logical inferences about using a condom or not (PAK). Most of our attitudes have to go through these inference processes. Hence, the goal is to account for current observed functional connections between stimuli and responses in terms of the individual's past behavior (*ibid.*).

Behaviorists—the supporters of the self-perception theory's analysis of dissonance phenomena—avoid any reference to hypothetical internal processes like arousal and reduction of dissonance. They also believe that practice precedes attitudes and then knowledge. But, their observational analysis of complexities like dissonance phenomena is based on an empirical generalization (examination of past behavior). An empirical generalization like that points out an inductive nature. In contrast, the dissonance theorists prefer the deductive nature of their theory (Bem, 1967). The dissonance theorists emphasize the weakness of empirical generalizations, as opposed to a true theoretical explanation (originating from the internal processes) (Lawrence & Festinger, 1962). This criticism of no deduction or predictive power is often expressed towards the behaviorists and the self-perception theory. A specific prediction will not be ventured without knowing the complete reinforcement history of the individual, so the criticism goes (*ibid.*). Bem (1967, p. 198) stated that: "A functional analysis appears to have limited predictive power because it makes explicit the kinds of knowledge about the past and the present controlling variables that any theorist must have if he is to predict behavior accurately". These critiques emphasize that both the cognitive dissonance theory and the self-perception theory support that practice is a predictor of knowledge and attitudes (PAK) as opposed to the KAP model. It is the different nature assumptions of the

practice component that makes the two theories different from each other.

Some criticize the meaningfulness of Bem's interpersonal stimulation premise. They do not accept the assumption that individuals have no insights into their own attitudes (Cooper, 2007). According to Bem (1967) the only thing people can rely on when an attitude is unclear, is their own past behavior. This process of behavior inference created debate leaning towards approval of the conception of the KAP model. Even if the interpersonal simulation is problematic as a research tool, Bem's theory of self-perception represents a huge challenge for the dissonance theory (Cooper, 2007).

Aim of the Study and Research Questions

The overall aim of this study is to investigate the relationship between HIV/AIDS related knowledge, attitudes and sexual risk behavior (The KAP model concepts) among students at the University of Oslo (UiO) and the University of the Western Cape (UWC). Two cultural contexts, representing two different starting points in the HIV/AIDS epidemic, is the fundament. The comparison will be between Norway as a country with a low prevalence of HIV/AIDS (MSIS, 2013), and South Africa as a country with a high prevalence of HIV/AIDS (UNAIDS, 2013). Our two main assumptions are that HIV/AIDS related knowledge can predict more positive attitudes towards HIV/AIDS, and that HIV/AIDS related attitudes can predict increased HIV/AIDS safe-sex behavior. On attempt to reach the aim the following research questions will be addressed;

- 1) What is the level of knowledge about, and attitudes towards HIV/AIDS related matters in a sample of young adult university students in Oslo and Cape Town, and how do knowledge and attitudes vary by selected background factors?
- 2) Controlled for selected background factors, does knowledge about, and attitudes towards HIV/AIDS related matters predict condom use among students in Oslo and Cape Town? (The KAP model)
- 3) Controlled for selected background factors, does condom use (practice) and attitudes predict knowledge? (The PAK model)

Method

Procedure and Research Design

We conducted this cross-sectional study at UiO and UWC between January and April 2014. During the period of data collection the author stayed in Cape Town as an exchange student. We chose a quantitative research design as the most suitable design to study the research questions. Two questionnaires formed the baseline for comparison. Literature reviews on HIV/AIDS were made. A journal was kept throughout the whole process of data collection, data analysis and the writing process.

Participants. We chose university students as our participants; which is of relevance because young people are at the center of the HIV/AIDS epidemic (UNICEF, 2002). The samples from the two universities were regarded as self-selected. 173 students answered the online questionnaire at UiO, and we collected 253 questionnaires on paper from the UWC students. Out of the 253 questionnaires, we cleaned out 19 incomplete ones. 234 questionnaires were usable. A total of 407 students participated in the study.

Recruitment. Big samples have fewer faults as a result of the selection process (Langdrige, 2006). We aimed at recruiting between 250-300 students from Oslo, and the same number of students from Cape Town. We invited all the students at UiO's Psychology Department to participate. They received full information about the project through student e-mail address lists. The e-mail contained a direct link to the online questionnaire using www.surveymonkey.com. The first page of the questionnaire was a "Request for participation". It gave information about the purpose of the study, the comparison between Norwegian and South African students, anonymity and how the results would be published. As regards data safety and anonymity, participants were informed not to disclose their name or other personal information in the study. Before participation, students gave their informed consent by answering *yes* to the question about being over 18 and wanting to participate in the survey. No IP-addresses were registered, which meant that the questionnaire could only be answered once from each computer. We e-mailed two reminders of the survey to the participants after two-three weeks. Given the sensitive topic we had good reason to believe that an online survey was well-suited for data collection, compared to alternative methods. This way it was most likely no selection bias in the Oslo study sample.

There are 11 official languages in South Africa and UWC is a university with many different ethnicities. English is the standard language they use but it is not the first language of most of the students. Thus, the South African questionnaire was administered in English. My supervisor at UWC had some experiences with lack of response to online surveys sent out to students' e-mail address lists. Therefore, we designed a paper version out of the Norwegian online survey. In the transition from the online survey to the paper survey we decided to

change some of the questions to fit the Cape Town students more properly and reduce the chance of misunderstandings. We gave the students at UWC an information sheet about the purpose of the study. But, the Cape Town students did not receive information about the comparison between their responses and responses from the Oslo students. The reason for this was that we wanted to avoid response bias. The UWC students signed a consent form to be able to participate. We kept the consent forms separate from the questionnaires. We collected data in three different psychology classes. The author and the lecturers introduced and handed out the questionnaires in a classroom setting. The students completed the questionnaires in approximately 20 minutes. Most of the participants were first-year students.

The Questionnaire

In order to ensure that the content of the questionnaire was understood and culturally acceptable, we conducted pilot studies. By testing the questionnaire on a few people, we obtained quality assurance. In Oslo, we pilot tested the survey among two male and eight female friends ($n = 10$) who did not study at UiO. For the Cape Town data collection the questionnaire was translated to English and back to Norwegian again to make sure it contained the similar meanings. In Cape Town, we pilot tested the survey among four female and four male students at UWC ($n = 8$). The eight students from the Psychology Department volunteered and did not form part in the actual study. A few changes were made after their responses.

The questionnaire consisted of 18 main questions and several sub-questions distributed between four sections. The first section included measures of background factors, such as gender, age and sexual orientation. The second section consisted of knowledge questions. The most important battery of question was the “Adolescent AIDS Knowledge Scale” (Zimet, 2011, in Fisher, Davis, Yarber & Davis, 2011, p. 390-392), measuring knowledge about the spread and prevention of HIV/AIDS. The third section about attitudes contained—among others—the “HIV/AIDS Attitudes Scale for Teachers” (Koch & Singer, 2011, in Fisher et al., 2011, p. 360-363) regarding HIV/AIDS, persons with HIV/AIDS, and specific educational issues. In the fourth section about behavior we asked questions about the total number of sexual partners in life, and condom use during the first intercourse with the most recent sex partner. These variables were selected from a previous European study of sexual behavior (Træen, Stigum, Hassoun, Zantedeschi & The European Nem Group, 2003).

Ethical Considerations

The study was introduced to the Regional Committee for Medical Research Ethics (REK) who informed us that our study did not need to be case worked by them. Furthermore,

the study was approved by the Norwegian Social Science Data Services (NSD). The research proposal and an affirmation of the ethical approval from UiO were presented to the Department of Psychology at UWC. The Dean of Research gave permission to conduct research at UWC.

Participants in both countries were well informed about the anonymity in advance. For ethical reasons participants were given the opportunity to skip questions they felt were too sensitive to answer. This opportunity could minimize the risk of drop out as well. At UWC the researcher did not leave the room where the data was collected during completion of the questionnaires. After collecting the documents, they were kept in a secure place.

Measures

Background Factors.

Gender. This variable was composed of two items: 1 (*man*), and, 2 (*woman*).

Age. Age was measured as a continuous variable in Oslo, and a categorical variable in Cape Town. To make analysis and comparison possible, we recoded the Norwegian data to fit the Cape Town data. A new variable was coded: *18-20 yrs*, *21-24 yrs*, and *25+ yrs*.

Number of Sexual Partners. The question “How many sexual partners have you had throughout your life?” was measured as a continuous variable in Oslo, and a categorical variable in Cape Town. For comparison, we recoded the Oslo variable to fit the Cape Town data. A new variable was coded: *1-3 partners*, *4-6 partners*, *7-9 partners*, *10-12 partners*, *13-15 partners* and *16+ partners*.

Condom use. Use of condom was measured with the following question; “Did you use a condom the first time you had sex with your last partner?” The variable was composed of four items: 1 (*yes, to protect myself against unwanted pregnancy*), 2 (*yes, to protect myself against HIV/AIDS*), 3 (*yes, to protect myself against other venereal diseases*), and 4 (*no*). The participants were allowed to indicate one or more responses to this question. A new dichotomous variable was created into: 0 (*no condom use*) and 1 (*condom use*).

Knowledge About HIV/AIDS. The questions about knowledge were introduced by the following text: “Experts on HIV/AIDS have talked about the spread and prevention of HIV/AIDS. Choose one alternative answer on each of the following questions” (Zimet, 2011, in Fisher et al., 2011, p. 390-392). The response alternatives were: 1 (*yes*), 2 (*no*), 3 (*don't know*). One of the questions from the original scale was removed from the surveys and replaced with another more up-to-date question about knowledge. The scale consisted of 22 items, and each item took form of a question starting with “Do most experts say...” A correct response received a score of 1. An incorrect answer, or a *don't know/not sure* response each

received a score of 0. For the following items, *no* was the correct response: 1, 3, 4, 5, 9, 11, 13, 15, 17, 19. For the following items, *yes* was the correct response: 2, 6, 7, 8, 10, 12, 14, 16, 18, 20, 21 and 22 (Zimet, 2011, in Fisher et al., 2011, p. 390-391). To calculate the total score for the scale we reversed the negatively worded items and added together scores from all the items to a sum score variable (Pallant, 2013). It ranged from 0 to 22 (Zimet, 2011, in Fisher et al., 2011, p. 390-391). A new variable was created and called “Number of correct answers”.

Attitudes Towards HIV/AIDS. The “HIV/AIDS Attitudes Scale for Teachers” was introduced by this heading: “The following statements reflect attitudes about HIV/AIDS. Use the scale, and choose your answer based on what best describes your reaction to each statement” (Koch & Singer, 2011, in Fisher et al., 2011, p. 360-363). Of the 24 items in the scale, one was removed because it addressed teachers’ experiences and was not well-suited for students. The remaining 23 items were evaluated on a scale from 1 (*strongly agree*) to 5 (*strongly disagree*). A mean sum score attitudes variable was calculated, with a mean of 1.00 representing the most unsupportive attitudes and 5.00 representing the most supportive attitudes. Prior to calculating the mean sum score variable, several items were reversed; items nr. 1, 5, 7, 9, 10, 13, 15, 17, 20, 21 and 22 in the questionnaire (Koch and Singer, 2011, in Fisher et al., 2011, p. 361). A new variable was created and called “HIV/AIDS Attitudes Scale”. The Cronbach’s alpha coefficient of the attitudes scale was .64.

Statistical Analysis

All analyses were carried out using IBM SPSS Statistics 22. Obtaining descriptive statistics on the variables includes the mean, the standard deviation and the range of scores (Langdridge, 2006; Pallant, 2013). Furthermore, we used Cross tabulation to obtain meaningful comparisons between the Oslo sample and the Cape Town sample. Differences between groups on the study variables were tested for statistical significance by means of t-tests and Chi-square tests. Independent-samples t-test was applied because we were to compare the mean scores of two different groups of people (Pallant, 2013). A Chi-square test for independence was used to explore the relationship between two categorical variables (ibid.). One-way analysis of variance (ANOVA) was used to compare knowledge, attitudes and sexual risk behavior between students in Oslo and Cape Town. The F-ratio represents the variance between the groups divided by the variance within the groups (ibid.). Bivariate correlation was used to explore the relationship between two continuous variables. A correlation gives us an indication of the direction—as well as the strength—of the relationship studied (ibid.). Multiple linear regression analysis was used to assess the association between

two or more independent variables and a continuous dependent variable (Boston University School of Public Health, 2013). We also used it to examine the correlation between two variables when controlling another covariate (Moss, 2010). It provided a way of accounting for or adjusting for confounding variables that were included in the model (Boston University School of Public Health, 2013). Because we were interested in comparing the contribution of each independent variable, we looked at the beta values (β), which are the standardized regression coefficients. We used Hierarchical multiple regression to enter the variables in steps in a predetermined order (Pallant, 2013). In Hierarchical regression; “the focus is on the change in predictability associated with predictor variables entered later in the analysis over and above that contributed by predictor variables entered earlier in the analysis” (Petrocelli, 2003, p. 11). In the first step we “forced” the background factors *gender*, *age* and *number of sexual partners* responding into the analysis of condom use in a potentially risky situation. In the second step we entered *knowledge* into the model. In the third step we entered *attitudes*. Change in R^2 (ΔR^2) and its corresponding change in F (ΔF) and p-values are the statistics of greatest interest when using Hierarchical regression (Wampold & Freund, 1987). The R^2 tells us how much of the variance in the dependent variable (condom use) was explained by the model. ΔR^2 statistics were computed by entering predictor variables into the analysis at different steps. ΔR^2 tells us the additional percentage knowledge can explain in the variance in condom use, controlling for background factors (Pallant, 2013).

Results

Sample

The distribution of the socio-demographic variables gender and age, and the sexual history variable number of partners in the study samples, are shown in Table 1.

Table 1

Descriptive Statistics: Socio-Demographic and Sexual History Characteristics of the Sample (N = 407)

		Oslo	Cape Town	χ^2	Sig.
		%	%		
Gender	Men	14.2	29.1	11.947	.001
	Women	85.8 (n = 162)	70.9 (n = 234)		
Age	18-20 yrs	5.0	74.9	214.771	.001
	21-24 yrs	41.0	22.1		
	25 + yrs	54.0	3.0		
		(n = 161)	(n = 231)		
Number of sexual partners	1-3	45	86	24.226	.001
	4-6	18	27		
	7-9	10	7		
	10-12	16	6		
	13-15	9	6		
	16 +	22	9		
		(n = 120)	(n = 141)		

Table 1 shows that in the Oslo sample 14% were men, compared to 29% in the Cape Town sample ($p < .001$). There was also a statistically significant difference between the two samples in age distribution ($p < .001$). The young age distribution in the Cape Town sample was most likely related to the fact that the majority of the participants were first-year students. In Oslo the questionnaire was sent out to all of the students at the Psychology Department. The difference in age may also reflect the respondents' total number of sexual partners. Statistically significant more respondents in Oslo than in Cape Town had a higher number of partners ($p < .001$). Also, while 89% of the participants in Oslo ($n = 141$) reported having had their first sexual intercourse, 65% reported the same in Cape Town ($n = 219$).

Knowledge

Table 2 shows the results of the level of knowledge about HIV/AIDS related matters in the samples of university students in Oslo and Cape Town.

Table 2

Students' Knowledge About Spread and Prevention of HIV/AIDS in Oslo and Cape Town. Percent Correct Answers

	Oslo	Cape Town	χ^2	Sig.
Most experts say there's a high risk of getting HIV/AIDS by kissing someone on the mouth who has HIV/AIDS	88.5 (n = 148)	78.4 (n = 232)	8.077	.002
Most experts say HIV/AIDS can be spread by sharing a needle with a drug user who has HIV/AIDS	95.2 (n = 147)	98.3 (n = 234)	10.050	.007
Most experts say you can get HIV/AIDS by giving blood	79.7 (n = 148)	38.0 (n = 234)	64.394	.000
Most experts say there's a high chance you can get HIV/AIDS from a toilet seat	89.1 (n = 147)	76.2 (n = 231)	16.210	.000
Most experts say HIV/AIDS can be spread if a man has unprotected sex with a woman who has HIV/AIDS	95.3 (n = 148)	97.4 (n = 231)	3.573	.168
Most experts say HIV/AIDS can be spread if a man has unprotected sex with another man who has HIV/AIDS	99.3 (n = 148)	84.6 (n = 234)	22.471	.000
Most experts say a pregnant woman with HIV/AIDS can give HIV/AIDS to her unborn baby	88.5 (n = 148)	72.1 (n = 233)	18.997	.000
Most experts say you can get HIV/AIDS when you masturbate by yourself	99.3 (n = 148)	87.6 (n = 233)	17.308	.000
Most experts say using a condom can lower your chance of getting HIV/AIDS	98.0 (n = 148)	88.7 (n = 231)	11.141	.011
Most experts say there's a high chance of getting HIV/AIDS if you get a blood transfusion	62.8 (n = 148)	23.1 (n = 234)	61.287	.000
Most experts say that prostitutes have a higher chance of getting HIV/AIDS	81.1 (n = 148)	80.0 (n = 230)	1.241	.743
Most experts say that eating healthy food can keep you from getting HIV/AIDS	89.1 (n = 147)	77.7 (n = 233)	13.882	.001
Most experts say that having sex with more than one partner can raise our chance of getting HIV/AIDS	54.7 (n = 148)	97.0 (n = 233)	103.347	.000
Most experts say that you can always tell if someone has HIV/AIDS by looking at them	98.6 (n = 147)	95.3 (n = 234)	3.868	.145
Most experts say that people with HIV/AIDS will die from it	29.9 (n = 147)	35.0 (n = 234)	11.470	.003
Most experts say there's a cure for HIV/AIDS	73.6 (n = 148)	76.3 (n = 232)	5.464	.065
Most experts say that you can have HIV without being sick from AIDS	83.1 (n = 148)	65.7 (n = 233)	13.822	.001
Most experts say that if a man or a woman has sex with someone who shoots up drugs, they raise their chance of getting	21.7 (n = 147)	42.1 (n = 233)	22.071	.000

HIV/AIDS

Most experts say that HIV-medicines are more efficient than condoms when it comes to prevention of HIV-infection	0.7 (n = 148)	13.2 (n = 234)	33.041	.000
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There were statistically significant differences between Oslo and Cape Town students on knowledge about the spread and prevention of HIV/AIDS on all of the items except four. Students in Cape Town tended to agree more with these items (among others) than the Oslo students did; kissing, giving blood, toilet seat, man unprotected sex with another man, pregnant woman infecting an unborn baby, masturbation, blood transfusion, healthy food, sex with more than one partner, one can have HIV without AIDS, sex with someone who shoots up drugs, HIV-medicines are more efficient than condoms on prevention (these items illustrate the biggest differences).

A difference was that 80% of the students in Oslo responded correctly to the question about giving blood compared to 38% in Cape Town. The same trend was found for blood transfusion. On the question if having more than one partner can raise the chance of getting HIV/AIDS, Cape Town students turned out to be more knowledgeable. 97% of the Cape Town students responded correctly, compared to 55% of the Oslo students.

Responses to some of the questions showed a low level of knowledge among students in both Oslo and Cape Town, but the differences were statistically significant: “Do most experts say that people with HIV/AIDS will die from it?”, “Do most experts say that if a man or a woman has sex with someone who shoots up drugs, they raise their chance of getting HIV/AIDS?” and “Do most experts say that HIV-medicines are more efficient than condoms as prevention of HIV-infection”.

Table 3 shows how knowledge varied by the background factors; gender, age and number of partners, in the Oslo sample and the Cape Town sample.

Table 3

How Knowledge Vary by Gender, Age and Number of Partners in Oslo and Cape Town

			N	Mean	SD	F	Sig.
Oslo							
Gender	Men		23	15.3	5.2	.022	.883
	Women		139	15.2	5.8		
Age	18-20 yrs		8	11.1	9.3	2.138	.121
	21-24 yrs		66	15.3	5.3		
	25+ yrs		87	15.4	5.6		
Number of partners	1-3		45	16.8	2.1	1.194	.317
	4-6		18	17.3	1.8		
	7-9		10	17.5	2.4		
	10-12		16	18.0	1.4		
	13-15		9	17.4	2.5		
	16+		22	16.7	2.1		
Cape Town							
Gender	Men		68	15.9	2.7	.077	.781
	Women		166	16.0	2.5		
Age	18-20 yrs		173	15.9	2.6	2.885	.058
	21-24 yrs		51	16.1	2.2		
	25+ yrs		7	18.1	1.2		
Number of partners	1-3		86	16.0	2.4	.342	.887
	4-6		27	16.5	2.9		
	7-9		7	16.6	3.6		
	10-12		6	16.5	1.6		
	13-15		6	16.8	2.1		
	16+		9	16.3	2.0		

As Table 3 shows there were no statistically significant differences between gender, age or number of sex partners in knowledge, in Oslo and Cape Town.

Attitudes

Table 4 presents the attitudes towards HIV/AIDS related matters in the samples of university students in Oslo and Cape Town.

Table 4

Students' Attitudes Towards Potential Contact with People who Might be Living with HIV/AIDS, in Oslo and Cape Town

		N	Mean	SD	F	Sig.
I believe I have enough information about HIV/AIDS to protect myself in my social life						
	Oslo	141	1.8	.8		
	Cape Town	233	1.7	.9	.513	.474
I worry about possible casual contact with a person with HIV/AIDS						
	Oslo	140	4.5	.8		
	Cape Town	233	3.3	1.3	85.870	.000
Activities that spread HIV (e.g. sexual behavior) should be illegal						
	Oslo	140	4.6	.7		
	Cape Town	230	3.3	1.4	105.07	.000
I feel uncomfortable when coming in contact with gay men because of the risk that they may have HIV/AIDS						
	Oslo	141	4.8	.7		
	Cape Town	233	4.0	1.2	43.118	.000
I believe I have enough information about HIV/AIDS to protect myself in future work setting						
	Oslo	140	1.8	.9		
	Cape Town	232	1.8	1.0	.203	.652
People with HIV/AIDS are themselves responsible for getting their illness						
	Oslo	141	3.9	.8		
	Cape Town	232	3.4	1.2	14.510	.000
Civil right laws should be enacted to protect people with HIV/AIDS from job and housing discrimination						
	Oslo	141	1.8	.9		
	Cape Town	232	2.0	1.2	3.988	.047
Male homosexuality is obscene and vulgar						
	Oslo	141	4.7	.7		
	Cape Town	230	3.5	1.3	97.722	.000
HIV antibody blood test results should be confidential to avoid discrimination against people with positive results						
	Oslo	141	2.1	1.0		
	Cape Town	230	1.8	1.1	4.103	.044
I feel that more time should be spent teaching future teachers about HIV/AIDS in their college courses						
	Oslo	139	2.7	.9		
	Cape Town	232	1.8	1.0	71.636	.000
I would quit my job before I would work with someone who has HIV/AIDS						
	Oslo	140	4.8	.4		
	Cape Town	231	4.5	.9	14.336	.000
People should not blame the homosexual community for the spread of HIV/AIDS						
	Oslo	141	1.7	1.0		
	Cape Town	230	2.2	1.4	15.265	.000
HIV/AIDS is a punishment for immoral behavior						
	Oslo	141	4.8	.5		
	Cape Town	231	4.0	1.3	63.736	.000
I feel secure that I have reduced all risks of personally contracting HIV/AIDS						
	Oslo	141	2.0	1.0	10.086	.002

	Cape Town	226	2.3	1.1		
I think all children should be tested for HIV before entering school	Oslo	141	4.2	.9	71.899	.000
	Cape Town	229	3.1	1.4		
I believe it is the regular elementary classroom teacher's responsibility to teach HIV/AIDS education	Oslo	141	3.2	.8	91.425	.000
	Cape Town	230	2.1	1.2		
In my opinion, parents of all students in the class should be notified if there is a student with HIV/AIDS in the class	Oslo	140	4.0	1.0	7.104	.008
	Cape Town	230	3.6	1.4		
I feel that all school personnel who have direct contact with a student with HIV/AIDS should be notified	Oslo	141	3.0	1.2	1.241	.266
	Cape Town	229	3.2	1.5		
I think that students with HIV/AIDS should be allowed to fully participate in the day-to-day activities of the regular classroom	Oslo	140	1.2	.6	9.306	.002
	Cape Town	229	1.5	1.0		
I would support including HIV/AIDS education in the school curriculum	Oslo	141	1.5	.6	.799	.372
	Cape Town	231	1.6	.9		
A teacher with HIV/AIDS should be allowed to continue teaching	Oslo	141	1.7	1.2	5.951	.015
	Cape Town	231	1.5	.9		
It scares me to think that I may have a fellow student with HIV/AIDS in my class	Oslo	141	4.6	.6	39.958	.000
	Cape Town	229	4.0	1.2		
I believe that teachers should have the right to refuse to have students with HIV/AIDS in their classroom	Oslo	141	4.8	.5	13.906	.000
	Cape Town	231	4.5	1.0		

Note. 1 = strongly agree, 5 = strongly disagree.

As shown in Table 4, there were statistically significant differences in the reporting of the Oslo sample and the Cape Town sample on all of the items except four. More students in Oslo than in Cape Town believed that civil laws should be enacted to protect people with HIV/AIDS from job and housing discrimination. Also, that people should not blame the homosexual community for the spread of HIV/AIDS, that they have reduced all risks of personally contracting HIV/AIDS, and that students with HIV/AIDS should be allowed to fully participate in the day-to-day activities of the regular classroom.

Table 4 shows a general tendency for the Cape Town students to have more negative attitudes towards contact with people who might be living with HIV/AIDS, compared to their Norwegian peers. Typically, more students in Cape Town than in Oslo agreed to statements

like: “I worry about possible casual contact with a person with HIV/AIDS”, “Activities that spread HIV should be illegal”, “I feel uncomfortable when coming in contact with gay men...”, “People with HIV/AIDS are themselves responsible for getting their illness”, “Male homosexuality is obscene and vulgar”, “I feel that more time should be spent teaching future teachers about HIV/AIDS...”, “I would quit my job before I would work with someone who has HIV/AIDS”, “HIV/AIDS is a punishment for immoral behavior”, “I think all children should be tested for HIV before entering school”.

Table 5 presents how attitudes varied by gender, age and number of partners, in the Oslo sample and the Cape Town sample.

Table 5

How Attitudes Vary by Gender, Age and Number of Sexual Partners in Oslo and Cape Town

			N	Mean	SD	F	Sig.
Oslo							
Gender	Men		19	4.1	.3	1.236	.252
	Women		118	4.2	.3		
Age	18-20 yrs		5	4.5	.2	2.380	.097
	21-24 yrs		57	4.2	.3		
	25+ yrs		74	4.2	.3		
Number of partners	1-3		45	4.3	.3	.736	.598
	4-6		18	4.2	.3		
	7-9		10	4.3	.1		
	10-12		16	4.1	.3		
	13-15		9	4.3	.3		
	16+		21	4.3	.4		
Cape Town							
Gender	Men		68	3.8	.5	2.215	.138
	Women		164	3.9	.5		
Age	18-20 yrs		171	3.9	.5	1.244	.290
	21-24 yrs		51	4.0	.4		
	25+ yrs		7	3.9	.5		
Number of partners	1-3		86	4.0	.4	2.026	.079
	4-6		27	4.1	.5		
	7-9		7	3.8	.5		
	10-12		6	3.9	.3		
	13-15		6	3.7	.4		
	16+		9	3.6	.6		

As Table 5 shows, there were no statistically significant differences between gender,

age or number of sexual partners in attitudes, in Oslo and Cape Town.

Practice

Table 6 shows how condom use varied by the background factors, in the Oslo sample and the Cape Town sample.

Table 6

*How Condom use Vary by Gender, Age and Number of Sexual Partners in Oslo and Cape Town.
Percent who Used Condoms*

		Oslo			Cape Town		
		n	%	χ^2	n	%	χ^2
Gender	Men	16	43.8	1.615, 1 df, p = 0.204	50	72.0	0.640, 1 df, p = 0.424
	Women	104	60.6		91	78.0	
Age	18-20 yrs	4	100.0	13.993, 2 df, p = 0.001	91	74.7	1.984, 2 df, p = 0.371
	21-24 yrs	45	75.6		41	75.6	
	25+ yrs	70	44.3		6	100.0	
Number of sex partners	1-3	44	65.9	7.337, 5 df, p = 0.197	84	83.3	11.570, 5 df, p = 0.041
	4-6	18	66.7		26	69.2	
	7-9	10	60.0		7	57.1	
	10-12	16	37.5		6	83.3	
	13-15	9	77.8		6	50.0	
	16+	22	45.5		9	44.4	

Table 6 shows that statistically significant more of the younger Oslo students than the older reported use of condom during the first sexual intercourse with the most recent sex partner ($p < .001$). In the Cape Town sample, more students with few sex partners than many sex partners reported condom use ($p = .004$).

The Relationship Between Knowledge, Attitudes and Practice – The KAP Model

We carried out Hierarchical multiple regressions to investigate the relationships between the background factors, knowledge and attitudes for the prediction of condom use during the first sexual encounter with the most recent sex partner. Table 7 presents the relationship between knowledge, attitudes and practice among students in Oslo. Table 8 presents the relationship between knowledge, attitudes and practice in the Cape Town sample. Both of the tables are based on the KAP model.

Table 7

Hierarchical Multiple Regression Analysis for Predicting Condom use According to the KAP Model, Among Students in Oslo (n = 109)

Variables	Condom use			
	R _{xy}	β	R ²	Δ R ²
<i>Step 1 (Background factors)</i>				
Gender	.12 ^{ns}	.12 ^{ns}		
Age	-.34 ^{***}	-.31 ^{***}		
Number of sexual partners	-.15 ^{ns}	-.05 ^{ns}	12.5%	12.5%
<i>Step 2</i>				
Knowledge	-.11 ^{ns}	-.06 ^{ns}	12.9%	0.4%
<i>Step 3</i>				
Attitudes	.13 ^{ns}	.04 ^{ns}	13.6%	0.7%

Note. ΔR² = change in R². β = standardized regression coefficients.

* Ns = not statistically significant, *** p < .001, ** p < .01, * p < .05.

At step 1 in the Hierarchical regression analysis among the Oslo sample (see Table 7), gender, age and numbers of sexual partners were entered into the analysis. The overall model explained 13% of the variance in condom use. At step 2, knowledge explained an additional 0.4% of the variance in condom use, and attitudes added another 0.7% to the explained variance in step 3. In the Oslo sample only age was a statistically significant predictor of condom use (β = -0.31). There was no relationship between knowledge (K), attitudes (A) and practice (P).

Table 8

Hierarchical Multiple Regression Analysis for Predicting Condom use According to the KAP Model, Among Students in Cape Town (n = 133)

Variables	Condom use			
	R _{xy}	β	R ²	Δ R ²
<i>Step 1 (Background factors)</i>				
Gender	.07 ^{ns}	-.03 ^{ns}		
Age	.08 ^{ns}	.15 ^{ns}		
Number of sexual partners	-.25 ^{**}	-.32 ^{***}	9.0%	9.0%
<i>Step 2</i>				
Knowledge	-.004 ^{ns}	.03 ^{ns}	9.0%	0.0%
<i>Step 3</i>				
Attitudes	.01 ^{ns}	-.07 ^{ns}	9.3%	0.3%

Note. ΔR² = change in R². β = standardized regression coefficients.

* Ns = not statistically significant, *** p < .001, ** p < .01, * p < .05.

After the background variables in step 1 were entered (see Table 8), the overall model explained 9% of the variance in condom use. After step 2, when knowledge was included, the model as a whole still explained 9% of the variance. After step 3, when we included attitudes, the model as a whole explained 9.3%, which means that attitudes explained an additional 0.3% of the variance in condom use. For the Cape Town sample number of sexual partners was the only statistically significant predictor of condom use ($\beta = -.32$). Accordingly, there was no relationship between knowledge (K), attitudes (A) and practice (P).

The Relationship Between Practice, Attitudes and Knowledge – The PAK Model

We turned the KAP model around to be able to test the PAK model. We carried out Hierarchical multiple regressions to investigate the relationships between the background factors, condom use during the first sexual encounter with the most recent sex partner and attitudes for the prediction of knowledge. Table 9 presents the relationship between condom use, attitudes and knowledge among students in Oslo. Table 10 presents the relationship between condom use, attitudes and knowledge in the Cape Town sample. Both of the tables are based on the PAK model.

Table 9

Hierarchical Multiple Regression Analysis for Predicting Knowledge According to the PAK Model, Among Students in Oslo (n = 109)

Variables	Knowledge		
	β	R^2	ΔR^2
Step 1 (Background factors)			
Gender	.043		
Age	.059		
Number of sexual partners	.023	0.7%	0.7%
Step 2			
Condom use	-.071	1.2%	0.012%
Step 3			
Attitudes	.054	1.5%	0.015%

Note: ΔR^2 = change in R^2 . β = standardized regression coefficients.

* Ns = not statistically significant, *** $p < .001$, ** $p < .01$, * $p < .05$.

As Table 9 shows, there were no relationships between practice (P), attitudes (A) and knowledge (K) in Oslo.

Table 10

Hierarchical Multiple Regression Analysis for Predicting Knowledge According to the PAK Model, Among Students in Cape Town (n = 133)

Variables	Knowledge		
	β	R^2	ΔR^2
Step 1 (Background factors)			
Gender	.080		
Age	.010		
Number of sexual partners	.023	2.0%	2.0%
Step 2			
Condom use	.012	2.3%	.023%
Step 3			
Attitudes	.262**	8.5%	.085%

Note: ΔR^2 = change in R^2 . β = standardized regression coefficients.

* Ns = not statistically significant, *** $p < .001$, ** $p < .01$, * $p < .05$.

As shown in Table 10, attitudes (A) was a statistically significant predictor of knowledge (K) in Cape Town ($\beta = .262$), but practice (P) was not.

Discussion

Summary of Main Findings

The results from this study indicate that the students in Oslo have a higher level of knowledge and more positive attitudes than the students in Cape Town have. In the Hierarchical multiple regressions, age turned out to be a statistically significant predictor of condom use among the Oslo students. We found no relationships between the components in the KAP model. Among the Cape Town students, number of sexual partners was a predictor of condom use. We found a relationship between knowledge and attitudes, but not with practice. When we tested the PAK model, no relationship was found between practice, attitudes and knowledge in Oslo. In Cape Town, attitudes predict knowledge, but practice does not. Accordingly, there was no support neither for the KAP model nor the PAK model in either sample.

Discussion of Main Findings

The differences between Oslo and Cape Town regarding knowledge and attitudes may to some extent be explained by the fact that HIV/AIDS is low prevalent in Norway (MSIS, 2013), and high prevalent in South Africa (UNAIDS, 2013). Differences between the cultural contexts were found which highlight the importance of the cultural perspective in the study.

The finding that the Oslo students had a high level of knowledge about spread and prevention of HIV/AIDS, and actions that can cause HIV-infection is confirmed by Mandal et al.'s (2002) study. Likewise, the results from Cape Town are confirmed by the studies of Burgoyne and Drummond (2008) and Walker et al. (2002).

The high levels of knowledge and the positive attitudes in Oslo, match with Mandal et al.'s (2008) study where people with high levels of knowledge about development and dangers regarding HIV, commonly also had positive attitudes towards the social rights and opportunities of HIV-infected persons. Despite the similarities between ours and the less recent one (*ibid*), Hierarchical multiple regressions showed no relationship between knowledge and attitudes later on in our study. Thereby, the finding of the current study is unsupportive of the assumption that HIV/AIDS related knowledge can predict more positive attitudes towards HIV/AIDS, in Oslo.

The finding that the Cape Town students expressed more negative attitudes towards potential contact with people who might be living with HIV/AIDS than the Oslo students, can be contextualized to HIV/AIDS related cultural beliefs, norms and stigmatizations in South Africa (James, Reddy, Taylor & Jinabhai, 2004; Walker, Reid & Cornell, 2004). Such factors may affect how people perceive others who might be ill from the disease. Negative attitudes towards AIDS patients, found in a less recent study (Govender et al., 1992), might still reflect people's minds when we take into account the cultural frame and the scale of the epidemic in South Africa (Achmat & Simcock, 2007; Walker, Reid & Cornell, 2004). The relationship between low levels of knowledge and negative attitudes in Cape Town, is supported by Shisana and Simbayi's study (2002), confirming the statement that the context of the African continent implies complex challenges to the HIV/AIDS epidemic.

The finding that statistically significantly more of the younger Oslo students than the older reported condom use—during the first sexual intercourse with the most recent partner—may be explained by a Norwegian study that showed that young adults initially in their sexual careers prefer to use condom as their contraceptive method to prevent unwanted pregnancy (Træen et al., 2011). As they grow older and become more sexually experienced they tend to switch from condom use to hormonal contraception (*ibid.*). The findings from the present study thus confirm these results of previous Norwegian studies showing that young adults are more concerned with avoiding unwanted pregnancy than protecting themselves from STIs (Træen & Gravningen, 2011; Træen; Træen & Hovland, 1998; Træen, Stigum & Eskild, 2002). This implies that; condoms are primarily used as contraception and not as protection against HIV/STIs (*ibid.*).

Number of sexual partners was a statistically significant predictor of condom use in Cape Town. Those who reported few sexual partners used condoms to a higher degree than those with many partners. It might be difficult to find a worthwhile explanation for this seemingly complex finding, because normally exposures to sexual partners should make people more aware of the health risks. Therefore, safe-sex behavior should ideally be widespread among those with *many* partners. But in general, people tend to practice sexual risk behavior despite such exposure and knowledge about HIV/AIDS because of low risk perception and lack of tools (UNICEF, 2002). Widespread mythical notions about protection in the cultural context of South Africa (James et al., 2004) are dominant and confronting. For future research it can be favorable to look closer into the South African culture that is permeated by such stigmatizations and discourses.

In Oslo, no relationships between knowledge, attitudes and practice were found. In Cape Town, there was a relationship between the knowledge and attitudes components of the KAP model, but not with practice. Apparently, knowledge was not associated with practice in neither of the samples. As a result; the main idea behind the KAP model (Valente et al., 1998) was unsupported. Thus, we rejected the KAP model in both cultural contexts. HIV/AIDS related knowledge did not predict more positive attitudes towards HIV/AIDS, and HIV/AIDS related attitudes did not predict increased HIV/AIDS safe-sex behavior. This also meant no support for the finding that there was a connection between knowledge and attitudes (Mandal et al., 2008). The finding of no relationships to practice is a contrast to research showing a highly correlated relationship between attitudes and behavior (Kim & Hunter, 1993). In the prior study attitudes could predict behavior to some degree (*ibid.*), which is not the case for the present study.

As regards earlier criticism towards the KAP model we find support for the rejection. In behavior change studies, researchers often treated behavior as the outcome variable to be predicted by knowledge and attitudes. They might have neglected important aspects where knowledge and attitudes are considered to be outcome variables (Valente et al., 1998; see Figure 2). Hence, we thought by turning the KAP model around into the PAK model, we might discover relationships between the components that did not emerge with KAP. In the KAP model it is taken for granted that knowledge and attitudes predict practice, but the PAK model could represent a better suited model to explain variations of interest. The cognitive dissonance theory and the self-perception theory function as theoretical perspectives in support of the PAK model (oppositions to the KAP model). In the cognitive dissonance model; firstly, practice precedes attitudes and secondly, attitudes precede knowledge, which

makes knowledge the outcome variable (Chaffee & Roser, 1986). When people engage in sexual risk behavior (e.g. condom use) before possessing any clear attitudes and knowledge related to the behavior, a psychological uncomfortableness would occur and in this situation people are driven by cognitive dissonance (Chaffee & Roser, 1986; Festinger, 1957). The self-perception theory emerged as a critique of the cognitive dissonance theory (Cooper, 2007). But the two alternative theories imply the same principal idea behind PAK; that based on people's own practice, they develop attitudes which results in knowledge. The main difference between the theories is the underlying assumptions about the practice component and how the dissonance phenomena occur. Instead of being a result of motivation to reduce discomfort (the cognitive dissonance theory), the self-perception theorists believe the dissonance phenomena is due to a non-motivational process (Bem, 1967). If people have a non-motivational background they will conclude their attitudes on behalf of their sexual behavior (e.g. condom use) (Harmon-Jones & Mills, 1999). Except for a relationship between attitudes and knowledge in Cape Town, no other relationships were found regarding PAK. Because we did not succeed in finding a relation to what people do in practice, the support for PAK is limited. Despite this limited support, the main ideas behind the KAP model and the PAK model regarding the order of the components and a relationship between all of them are not supported for any of the two models we tested. We cannot draw any inferences about these underlying processes based on this study.

Limitations

After summarizing and discussing the major findings from this study, several study limitations need to be addressed. The differences between the target population (250-300 students from each country) and the accessed samples (173 participants from Oslo and 234 participants from Cape Town) were quite big and can imply selection biases. Especially recruitment to the Oslo survey was poor. We have no definitive knowledge about people's reasons for not wanting to participate in the study, but research show a general tendency for people not to participate in surveys (Groves, Cialdini & Couper, 1992). A relevant explanation for the low participation response in Oslo can be the use of an online survey as opposed to the class room setting in Cape Town. Otherwise, non-participation may just as well be related to the sensitive study topic, lack of time, the timing of the survey (in the beginning of the semester), attitudes, values, moral issues, patterns of sexual behavior, or it can be random.

Another limitation worth noting is the different modes of data collection. We used a self-administered survey face-to-face in the Cape Town questionnaire, and conversely an

online questionnaire in Oslo. A bias between the two data sets is worth mentioning (automatic vs. manually coding process). We had to change from continuous reporting to categorical reporting on certain variables to be able to compare the data. We gave the Oslo students information about the cultural comparison, but the Cape Town students were unaware of it. The fact that the author was a “white” foreigner from a European country participated in classes mostly consisting of “black” people at UWC might have influenced what the students responded. It is common to want to give socially acceptable answers (Langdrige, 2006).

It should be noted that the sexual orientation variable was omitted from the analysis because 70% of the students in Cape Town claimed to be homosexual and only 1% claimed to be heterosexual. This misconception was probably most of all due to the fact that English is not the first language of the majority of the students at UWC. A high percentage of participants did not answer the question about having had sexual intercourse. The low response for this question might be due to a conscious choice or a misunderstanding of the layout or question formulation.

Finally, the self-selected samples, percentages and means from this study cannot be generalized to a known population. It is possible that the strength of the relationships between knowledge, attitudes and practice are not affected by self-selection of the samples. However, this needs to be confirmed in future studies. The Cronbach’s alpha coefficient of the attitudes scale was .64. Ideally, the Cronbach’s alpha of a scale should be above .7 (DeVellis, 2012). In other words the scale we used is not a very reliable measure of attitudes.

The choice of contents such as this particular attitudes scale can be related to the fact that the study was not a part of a joint research project. As regards future studies it is recommended to find out if the measures of knowledge, attitudes and sexual risk behavior are operationalized well enough. Moreover, it is profitable to improve the questionnaire and use a new, more accurate scale for attitudes. Ultimately, the models we used in the thesis are unsustainable which points out the need to count in other theoretical models of health behavior to understand what motivate action, for instance social cognitive theories such as the theory of planned behavior (Ajzen, 1991) or self-regulation theories (Bandura, 1977; Beumeister & Vohs, 2007).

Conclusion

University students in Oslo and Cape Town differed in their levels of knowledge and attitudes towards HIV/AIDS: The Oslo students had a higher level of knowledge and more

positive attitudes than the Cape Town students had. Age was a statistically significant predictor of condom use in Oslo, and number of sexual partners was so in Cape Town. Regarding the KAP model, we only found a relationship between attitudes and knowledge in Cape Town: We rejected the KAP model in both cultural contexts. Except for a relationship between attitudes and knowledge in Cape Town we found no relationships in support of the PAK model. The thesis may serve as a critique of both the KAP model and the PAK model. The fact that HIV/AIDS is one of the largest global medical challenges in history (Connolly, 2003), and a huge threat to human health and development (FHI, 2013; MSIS, 2013), emphasizes the importance of a cultural point of view. A comparison between a low prevalence and a high prevalence country is profitable for exploring contrasts, and providing instructive global templates (Achmat & Simcock, 2007). Knowledge and attitudes are not worth targeting in health campaigns designed to change sexual behavior in either country. Moreover, other models are more suitable to explain the variations compared to the KAP model and the PAK model. On that account, to investigate people's underlying motives, future research should be built on more complex models such as social cognitive theories (Ajzen, 1991; Bandura, 1977; Beumeister & Vohs, 2007).

References

- About health. (2014). *HAART – Highly active antiretroviral therapy*. Retrieved from <http://aids.about.com/od/hivaidsletterh/g/haartdef.htm>
- Achmat, Z., & Simcock, J. (2007). Combining prevention, treatment and care: Lessons from South Africa. *AIDS, Official Journal of the International Aids Society*, 21, 11-20. doi:10.1097/01.aids.0000279702.71062.52
- AIDS Research Alliance. (2014a). *Cure research*. Retrieved from <http://aidsresearch.org/cure-research/>
- AIDS Research Alliance. (2014b). *Treatment and Vaccine Research*. Retrieved from <http://aidsresearch.org/treatment-vaccine-research/>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211. doi:10.1016/0749-5978(91)90020-T
- AVERT (Averting HIV and AIDS). (2012a). *European HIV & AIDS Statistics*. Retrieved from <http://www.avert.org/european-hiv-aids-statistics.htm>
- AVERT (Averting HIV and AIDS). (2012b). *HIV and AIDS in Western & Central Europe*. Retrieved from <http://www.avert.org/hiv-aids-western-central-europe.htm>
- AVERT (Averting HIV and AIDS). (2013). *HIV & AIDS in South Africa*. Retrieved from <http://www.avert.org/hiv-aids-south-africa.htm>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. doi:10.1037/0033-295X.84.2.191
- Baumeister, R. F., & Vohs, K. D. (2007). Self-regulation, ego depletion, and motivation. *Social and Personality Psychology Compass*, 1(1), 115-128. doi:10.1111/j.1751-9004.2007.00001.x
- Bem, D. J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review*, 74(3), 183-200. doi:10.1037/h0024835
- Bernardi, L. (2002). Determinants of individual AIDS risk perception: Knowledge, behavioural control and social influence. *African Journal of AIDS Research*, 1(2), 111-124. doi:10.2989/16085906.2002.9626551
- Boston University School of Public Health. (2013). *Multivariable Methods*. Retrieved from http://sphweb.bumc.bu.edu/otlt/MPH-Modules/BS/BS704_Multivariable/BS704_Multivariable7.html
- Burgoyne, A. D., & Drummond, P. D. (2008). Knowledge of HIV and AIDS in women in sub-Saharan Africa. *African Journal of Reproductive Health*, 12(2), 14-31. Retrieved

- from <http://www.ajol.info/index.php/ajrh/article/view/7962/30531>
- Chaffee, S. H., & Roser, C. (1986). Involvement and the consistency of knowledge, attitudes and behaviors. *Communication Research*, 13(3), 373-399. doi:10.1177/009365086013003006
- Cleland, J. G., & Ferry, B. (Eds.). (1995). *Sexual behavior and AIDS in the developing world*. London, UK: Taylor & Francis.
- Connolly, S. (2003). *Need to know: HIV and AIDS [Dette bør du vite om HIV og AIDS, i norsk oversettelse]*. Oxford, UK: Heinemann Library.
- Cooper, J. (2007). *Cognitive dissonance: Fifty years of a classic theory*. Los Angeles, LA: Sage.
- DeVellis, R. F. (2012). *Scale development: Theory and applications* (3rd ed.). Thousand Oaks, CA: Sage.
- Eaton, L., Flisher, J. A., & Aarø, E. L. (2003). Unsafe sexual behaviour in South African youth. *Social Science & Medicine*, 56(1), 149-165. doi:10.1016/S0277-9536(02)00017-5
- Elkind, D. (1967). Egocentrism in adolescent. *Child Development*, 38(4), 1025–1034. Retrieved from <http://www.jstor.org/stable/1127100>
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- FHI (Folkehelseinstituttet) [Norwegian Institute of Public Health]. (2009). *HIV-situasjonen i Norge per 31. desember 2008 [The HIV situation in Norway by the 31st of December 2008]* (MSIS-report No. 5). Retrieved from <http://www.fhi.no/artikler/?id=74232>
- FHI (Folkehelseinstituttet) [Norwegian Institute of Public Health]. (2013). *Hiv-situasjonen i Norge per 31. desember 2012 [The HIV situation in Norway by the 31st of December 2012]*. Retrieved from <http://www.fhi.no/dokumenter/2778b8c2e0.pdf>
- FHI (Folkehelseinstituttet) [Norwegian Institute of Public Health]. (2014a). *HIV-infeksjon/AIDS – veileder for helsepersonell [HIV-infection – supervisor for health care providers]*. Retrieved from <http://www.fhi.no/artikler/?id=82756>
- FHI (Folkehelseinstituttet) [Norwegian Institute of Public Health]. (2014b). *HIV situation in Norway in 2013*. Retrieved from <http://www.fhi.no/artikler/?id=109595>
- Govender, V., Bhana, R., Pillay, A., Panchia, R., Padayachee, G. N., & De Beer, M. (1992). Perceptions and knowledge about AIDS among family planning clinic attenders in Johannesburg. *South African Medical Journal*, 81(2), 71-74. Retrieved from [http://archive.samj.org.za/1992%20VOL%2081%20Jan-Jun/Articles/01%20January/2.5%](http://archive.samj.org.za/1992%20VOL%2081%20Jan-Jun/Articles/01%20January/2.5%20)

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- Greenlee, S. P., & Ridley, D. R. (1993). AIDS and college students: A survey of knowledge, attitudes and beliefs. *Psychological Reports*, 73(2), 490-490. doi:10.2466/pr0.1993.73.2.490
- Groves, R. M., Cialdini, R. B., & Couper, M. P. (1992). Understanding the decision to participate in a survey. *Public Opinion Quarterly*, 56(4), 475-495. doi:10.1086/269338
- Harmon-Jones, E., & Mills, J. (Eds.). (1999). *Cognitive dissonance – progress on a pivotal theory in social psychology*. In *Scientific Conferences Program, TX, US*. Washington, DC: American Psychological Association. doi:10.1037/10318-000
- Health and Human Services. (2001). *Brochure about HIV/AIDS*. Retrieved from http://www.dhhs.saccounty.net/PUB/Documents/AZ-Health-Info/PUB_AIDSBrochure.pdf
- Hendriksen, E. S., Pettifor, A., Lee, S. J., Coates, T. J., & Rees, H. V. (2007). Predictors of condom use among young adults in South Africa: The reproductive health and HIV research unit national youth survey. *American Journal of Public Health*, 97(7), 1241-1248. doi:10.2105/AJPH.2006.086009
- HivNorge (2007). *Slik smitter hiv*. Retrieved from <http://hivnorge.no/Om-hiv-aids/Slik-smitter-hiv>
- HOPE Cape Town Association. (2014). *Situation in South Africa*. Retrieved from <http://www.hopecapetown.com/7/29/situation-in-south-africa>
- James, S., Reddy, S. P., Taylor, M., & Jinabhai, C. C. (2004). Young people, HIV/AIDS/STIs and sexuality in South Africa: The gap between awareness and behaviour. *Acta Paediatrica*, 93(2), 264-269. doi:10.1111/j.1651-2227.2004.tb00718.x
- Joffe, H. (2003). Risk: From perception to social representation. *British Journal of Psychology*, 42(1), 55-73. doi:10.1348/014466603763276126
- Jovchelovitch, S. (2007). *Knowledge in context: Representations, community and culture*. East Sussex, England: Routledge.
- Katzenellenbogen, J. M., Joubert, G., & Karim S. A. (Eds.). (1997). *Epidemiology: A manual for South Africa*. Cape Town, South Africa: Oxford University Press.
- Kim, M. S., & Hunter, J. E. (1993). Attitude-behavior relations: A meta-analysis of attitudinal relevance and topic. *Journal of Communication*, 43(1), 101-142. doi:10.1111/j.1460-2466.1993.tb01251.x
- Koch, P. B., & Singer, M. D. (2011). HIV/AIDS knowledge and attitudes scales for teachers.

- In Fisher, T. D., Davis, C. M., Yarber, W. L., & Davis, S. L. (Eds.). (2011). *Handbook of sexuality-related measures* (3rd ed.). (pp. 360-363). New York, NY: Routledge.
- Kunnskapssenteret. (2014). *Holdninger [Attitudes]*. Retrieved from <http://kunnskapssenteret.com/holdninger/>
- Langdridge, D. (2006). *Psychological Research Method. Introduction to research methods and data analysis in psychology [Psykologisk forskningsmetode. En innføring i kvalitative og kvantitative tilnærminger, i norsk oversettelse]*. New Jersey, NJ: Pearson Education.
- Lawrence, D. H., & Festinger, L. (1962). *Deterrents and reinforcement: The psychology of insufficient reward*. Stanford, CA: Stanford University Press.
- Mandal, R., Nuland, B. R., & Grønningsæter, A. B. (2008). *Fortsatt farlig å kysse? Kunnskap om og holdninger til hiv [Still dangerous to kiss? Knowledge of and attitudes towards HIV]*. (Fafo-report No. 21). Oslo, Norway: Allkopi AS.
- Mane, P., & Aggleton, P. (2001). Gender and HIV/AIDS: What do men have to do with it? *Current Sociology*, 49(6), 23-37. doi:10.1177/0011392101496005
- MEDWISER. (2013). *HIV/AIDS in South Africa*. Retrieved from www.medwiser.org/hiv-aids/around-the-world/hivaids-in-south-africa/
- Meyer-Weitz, A., Reddy, P., Weijts, W., Van Den Borne, B. & Kok, G. (1998). The socio-cultural contexts of sexually transmitted diseases in South Africa: Implications for health education programmes. *AIDS Care*, 10(2), 39-55. doi:10.1080/09540129850124352
- Moss, S. (2010). *Psychlopedia: Multiple regression*. Retrieved from <http://www.psych-it.com.au/Psychlopedia/article.asp?id=367>
- MSIS (Meldingssystem for smittsomme sykdommer) [Message system for infectious diseases]. (2013). *Årsstatistikk for MSIS 2013 [Year statistics for MSIS 2013]*. Retrieved from <http://www.fhi.no/helseregistre/msis>
- Mwaba, K., & Naidoo, P. (2005). Sexual practices, attitudes toward premarital sex and condom use among a sample of South African university students. *Social Behavior and Personality: An International Journal*, 33(7), 651-656. Retrieved from <http://dx.doi.org/10.2224/sbp.2005.33.7.651>
- NHI (Norsk Helseinformatikk) [Norwegian Health Computer Science]. (2013). *Behandling av HIV-infeksjon [Treatment of HIV-infection]*. Retrieved from <http://nhi.no/sykdommer/blod/hiv-og-aids/hiv-infeksjon-behandling-11539.html>
- Pallant, J. (2013). *SPSS survival manual: A step by step guide to data analysis using IBM*

- SPSS. (5th ed.). Maidenhead, England: McGraw-Hill.
- Peltzer, K., Cherian, L., & Cherian, V. I. (1998). Aids awareness of secondary school pupils in the northern province of South Africa. *Psychological Reports*, 83(3), 955-958. doi:10.2466/pr0.1998.83.3.955
- Peltzer, K., & Seoka, P. (2002). HIV/AIDS knowledge, attitudes, beliefs and behaviours among rural South African youth: Implications for health education. *African Journal for Physical, Health Education, Recreation and Dance*, 8(1), 1-25.
- Petrocelli, J. V. (2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and Evaluation in Counseling and Development*, 36(1), 9-22. Retrieved from [http://psyc.wfu.edu/petrocelli/Petrocelli%20\(2003\)%20MECD.pdf](http://psyc.wfu.edu/petrocelli/Petrocelli%20(2003)%20MECD.pdf)
- Pettifor, A. E., Rees, H. V., Kleinschmidt, I., Steffenson, A. E., MacPhail, C., Hlongwa-Madikizela, L., . . . Padian, N. S. (2005). Young people's sexual health in South Africa: HIV prevalence and sexual behaviors from a nationally representative household survey. *AIDS*, 19(14), 1525-1534. Retrieved from http://journals.lww.com/aidsonline/Fulltext/2005/09230/Young_people_s_sexual_health_in_South_Africa__HIV.12.aspx
- Rehle, T., Shisana, O., Pillay, V., Zuma, K., Khangelani, Z., Puren, A., & Parker, W. (2007). National HIV incidence measures – new insights into the South African epidemic. *South African Medical Journal*, 97(3), 194-199. doi:10.7196/samj.777
- Schopper, D., Doussantousse, S., & Orav, J. (1993). Sexual behaviors relevant to HIV transmission in a rural African population: How much can a KAP survey tell us? *Social Science & Medicine*, 37(3), 401-412. doi:10.1016/0277-9536(93)90270-E
- Shisana, O., & Simbayi, L. (Eds.). (2002). *Nelson Mandela/HSRC study of HIV/AIDS: South African national HIV prevalence, behavioural risks and mass media: Household survey 2002*. Cape Town, South Africa: HSRC Press.
- Singhal, A., Rao, N., & Pant, S. (2006). Entertainment-education and possibilities for second-order social change. *Journal of Creative Communications*, 1(3), 267-283. doi:10.1177/097325860600100304
- Skinner, B. F. (2014). *Verbal behavior*. New York, NY: BF Skinner Foundation.
- Svenson, L. W., Carmel, S., & Varnhagen, C. K. (1997). A review of the knowledge, attitudes and behaviours of university students concerning HIV/AIDS. *Health Promotion International*, 12(1), 61-68. Retrieved from <http://heapro.oxfordjournals.org/content/12/1/61.full.pdf+html>

- Træen, B., & Gravningen, K. (2011). The use of protection for sexually transmitted infections (STIs) and unwanted pregnancy among Norwegian heterosexual young adults 2009. *Sexuality and Culture*, 15(2), 195-212. doi:10.1007/s12119-011-9090-5
- Træen, B., & Hovland, A. (1998). Games people play: Sex, alcohol and condom use among urban Norwegians. *Contemp. Drug Problems*, 25(3), 3-48. Retrieved from http://heinonline.org/HOL/Page?handle=hein.journals/condp25&div=9&g_sent=1&collection=journals
- Træen, B., Stigum, H., & Eskild, A. (2002). Contraception and STD protection among urban Norwegians. *Culture, Health & Sexuality*, 4(1), 85-102. doi:10.1080/136910502753389396
- Træen, B., Stigum, H., Hassoun, J., Zantedeschi, E., & The European Nem Group. (2003). Pre-sexual alcohol consumption and use of condoms - a European cross-cultural study. *Culture, Health & Sexuality*, 5, 439-454. doi:10.1080/136910501194305
- Træen, B., Stigum, H., & Magnus, P. (2003). *Rapport fra seksualvaneundersøkelsene i 1987, 1992, 1997 og 2002 [Report from the examination of sexual habits in 1987, 1992, 1997 and 2002]*. Oslo, Norway: Folkehelseinstituttet.
- Træen, B., & Štulhofer, A. (2012). Self-assessed risk of HIV and other STIs among young adults in Norway and Croatia. *Sexuality & Culture*, 16(1), 38-58. doi:10.1007/s12119-011-9098-x
- Træen, B., Štulhofer, A., & Landripet, I. (2011). Young and sexual in Norway and Croatia: Revisiting the Scandinavian versus Mediterranean gendered pattern of sexual initiation. *International Journal of Sexual Health*, 23(3), 196-209. doi:10.1080/19317611.2011.574786
- UNAIDS (Joint United Nations Programme on HIV/AIDS). (2013). *REGIONAL FACT SHEET 2012: Sub-Saharan Africa*. Retrieved from http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/2012_FS_regional_ssa_en.pdf
- UNAIDS (Joint United Nations Programme on HIV/AIDS). (2014). *South Africa*. Retrieved from <http://www.unaids.org/en/regionscountries/countries/southafrica/>
- UNAIDS (Joint United Nations Programme on HIV/AIDS) & WHO (World Health Organization). (1998). *Report on the global HIV/AIDS epidemic June 1998*. Retrieved from http://data.unaids.org/pub/Report/1998/19981125_global_epidemic_report_en.pdf
- UN (United Nations). (2010). *World contraceptive use 2009*. Retrieved from

http://www.un.org/esa/population/publications/contraceptive2009/contracept2009_walchart_front.pdf

- UNICEF (United Nations Children's Fund). (2002). *Young people and HIV/AIDS: Opportunity in Crisis*. New York, NY: Author.
- Valente, T. W., Paredes, P., & Poppe, P. R. (1998). Matching the message to the process: The relative ordering of knowledge, attitudes, and practices in behavior change research. *Human Communication Research*, 24(3), 366-385. doi:10.1111/j.1468-2958.1998.tb00421.x
- VandenBos, G. R. (Ed.). (2007). *APA dictionary of psychology*. Washington, DC: American Psychological Association.
- Walker, L., Reid, G., & Cornell, M. (2004). *Waiting to happen: HIV/AIDS in South Africa: The bigger picture*. Cape Town, South Africa: Juta and Company Ltd.
- Wampold, B. E., & Freund, R. D. (1987). Use of multiple regression in counseling psychology research: A flexible data-analytic strategy. *Journal of Counseling Psychology*, 34(4), 372-382. doi:10.1037/0022-0167.34.4.372
- Weinstein, N. D. (1984). Why it won't happen to me: Perceptions of risk factors and susceptibility. *Health Psychology*, 3(5), 431-457. doi:10.1037/0278-6133.3.5.431
- WHO (World Health Organization). (2000). *Fact sheets on HIV/AIDS for nurses and midwives*. Geneva, Switzerland: Author. Retrieved from http://www.searo.who.int/entity/nursing_midwifery/documents/sea-aids-130/en/
- Wood, K & Foster, D. (1995). Being the type of lover... Gender differentiated reasons for non-use of condoms by sexually active heterosexual active students. *Psychology in Society*, 20(1), 13-35.
- Zimet, G. D. (2011). Adolescent AIDS knowledge scale. In Fisher, T. D., Davis, C. M., Yarber, W. L., & Davis, S. L. (Eds.). (2011). *Handbook of sexuality-related measures* (3rd ed.). (pp. 390-392). New York, NY: Routledge.

Appendices

Appendix A: Ethical Approval From the Norwegian Social Data Services



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Vår dato: 13.11.2013

Vår ref: 35803 / 2 / MB

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 07.10.2013. Meldingen gjelder prosjektet:

35803	<i>Attitudes towards risk behaviour related to HIV/AIDS in Norwegian and South African University students</i>
Behandlingsansvarlig	<i>Universitetet i Oslo, ved institusjonens øverste leder</i>
Daglig ansvarlig	<i>Bente Træen</i>
Student	<i>Veronika Storbråten</i>

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, <http://www.nsd.uib.no/personvern/meldeplikt/skjema.html>. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://pvo.nsd.no/prosjekt>.

Personvernombudet vil ved prosjektets avslutning, 01.07.2014, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Vigdis Namtvedt Kvalheim

Marianne Bøe

Kontaktperson: Marianne Bøe tlf: 55 58 25 83

Vedlegg: Prosjektvurdering

Kopi: Veronika Storbråten veronikastorbraaten@gmail.com

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Avdelingskontorer / District Offices:

OSLO: NSD, Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no

TRONDHEIM: NSD, Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19 07. kyrre.svarva@svt.ntnu.no

TROMSØ: NSD, SVF, Universitetet i Tromsø, 9037 Tromsø. Tel: +47-77 64 43 36. nsdmaa@svt.uit.no

Personvernombudet for forskning



Prosjektvurdering - Kommentar

Prosjektnr: 35803

Det vil gjennomføres en spørreskjemaundersøkelse blant studenter i psykologi ved Universitetet i Oslo og Cape Town. Universitetene sender ut spørreskjemaundersøkelsen til et utvalg studenter. Personvernombudet legger til grunn at prosjektet klareres med Universitetet i Oslo og Cape Town.

Prosjektet er en internasjonal multisenterstudie. Universitetet i Oslo er behandlingsansvarlig institusjon for den norske delen.

Utvalget mottar skriftlig informasjon om prosjektet. Utfylling av spørreskjemaundersøkelsen anses som skriftlig samtykke. Revidert informasjonsskriv mottatt 07.11.2013 er tilfredsstillende utformet i henhold til personopplysningslovens vilkår. Personvernombudet legger til grunn at informasjonsskrivet oversettes til engelsk (jf. epost fra student 04.11.2013).

Det vil i prosjektet bli registrert sensitive personopplysninger om seksuelle forhold jf. personopplysningsloven § 2 nr. 8 d).

Spørreskjemaundersøkelsen gjennomføres elektronisk ved hjelp av SurveyMonkey. SurveyMonkey er da å regne som databehandler for prosjektet. Personvernombudet forutsetter at det foreligger en databehandleravtale mellom SurveyMonkey og Universitetet i Oslo for den behandling av data som finner sted, jf. personopplysningsloven § 15. For råd om hva databehandleravtalen bør inneholde, se Datatilsynets veileder på denne siden: <http://datatilsynet.no/verktøy-skjema/Skjema-maler/Databehandleravtale---mal/>

Innsamlede opplysninger registreres på privat pc. Personvernombudet legger til grunn at student setter seg inn i og etterfølger Universitetet i Oslo sine interne rutiner for datasikkerhet, spesielt med tanke på bruk av privat pc til oppbevaring av personidentifiserende data.

Forventet prosjektslutt er 01.07.2014. Datamaterialet anonymiseres ved at verken direkte eller indirekte personidentifiserende opplysninger fremgår. Spørreskjema, epost- og ip-adresser slettes hos student og SurveyMonkey. Indirekte personidentifiserende opplysninger fjernes, omskrives eller kategoriseres tilstrekkelig.

Appendix B: Ethical Approval from the University of the Western Cape



UNIVERSITY of the
WESTERN CAPE

Vedlegg B - Side 1

**OFFICE OF THE DEAN
DEPARTMENT OF RESEARCH DEVELOPMENT**

Ms Veronika Storbråten
University of Oslo
veronsto@student.sv.uio.no

Dear Veronika

PERMISSION TO CONDUCT RESEARCH AT UWC

Thank you for your research proposal, the ethics clearance and the affirmation from the NSD. I hereby grant you permission to conduct your research at UWC.

Yours sincerely

PROF RENFREW CHRISTIE
Dean of Research

2 December 2013

Appendix C: The Norwegian Questionnaire

Forespørsel om deltagelse

Formålet med denne studien er å undersøke hvordan studenter ved Universitetet i Oslo, Norge, og i Cape Town, Sør-Afrika, forholder seg til HIV og AIDS. Vi ønsker å få svar på om det er en sammenheng mellom hvilke holdninger og kunnskaper man har, og hva man gjør i praksis. Til dette trenger vi din hjelp, og vi ber deg delta i undersøkelsen.

Det tar cirka 10-15 minutter i gjennomføre den.

Din deltagelse er helt frivillig, og du kan velge å avslutte underveis. Du skal ikke oppgi navnet ditt. Dine svar kommer til å bli presentert sammen med andres svar som statistikk i tabeller, slik at det ikke er mulig å se hvordan hver enkelt deltager har svart på spørsmålene.

Resultatene fra forskningsprosjektet vil presenteres i en masteroppgave i psykologi, gjennomført og skrevet av masterstudent Veronika Storbråten. Det er bare Veronika og hennes veileder som vil få tilgang til dataene.

For å beskytte ditt privatliv ber vi deg om å svare på spørreskjemaet når du er helt alene. Hvis du har noen spørsmål om deltagelsen i undersøkelsen kan du kontakte masterstudenten på e-mail: veronsto@student.sv.uio.no

eller hennes veileder Professor Bente Træen, Universitetet i Oslo, e-mail: bente.traen@psykologi.uio.no

Tusen takk for din deltagelse i undersøkelsen. Din tid og støtte verdsettes.

***1. Jeg bekrefter at jeg har fylt 18 år og ønsker å delta i undersøkelsen**

- ☐ Ja
- ☐ Nei

Sosial bakgrunn

Her følger noen spørsmål om din sosiale bakgrunn og din sosiale situasjon.


2. Er du...?

- ☐ Mann
- ☐ Kvinne

3. Hvilket år er du født?

Årstall

Fødselsår



4. Hva regner du som din seksuelle orientering?

- ☐ Homoseksuell/lesbisk
- ☐ Heteroseksuell
- ☐ Biseksuell
- ☐ Ikke som noen av alternativene ovenfor

5. Mennesker kan ha ulike oppfatninger om hvor viktig seksualiteten er. Hvor viktig er seksualiteten i ditt liv?

- ☐ Overhodet ikke viktig
- ☐ Ganske uviktig
- ☐ Verken eller
- ☐ Ganske viktig
- ☐ Svært viktig

6. Hva er din nåværende status med hensyn til parforhold?

- ☐ Singel og har aldri vært i et fast forhold
- ☐ Singel, men har vært i et fast forhold
- ☐ I et fast forhold, men bor ikke sammen
- ☐ Lever sammen med en partner (samboer/gift)

7. Kjenner du noen personlig som er HIV-smittet?

- ☐ Ja
- ☐ Nei
- ☐ Vet ikke

8. Har du hørt om noen nye behandlinger mot HIV og AIDS?

- ☐ Ja
- ☐ Usikker
- ☐ Nei

9. Tror du at en vaksine mot HIV/AIDS ...

- ☐ er tilgjengelig nå?
- ☐ vil være tilgjengelig innen de neste 5 årene?
- ☐ vil være tilgjengelig om mer enn 10 år?
- ☐ vil aldri bli tilgjengelig?
- ☐ vet ikke

Kunnskap om HIV

Vi vil gjerne vite litt om dine kunnskaper om HIV og AIDS.

10. I hvilken grad tror du følgende handlinger kan føre til HIV-smitte og AIDS

	1 liten grad	2	3	4	5	6	7 stor grad
Å jobbe i nærheten av noen med HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Å kysse noen som er HIV-smittet eller har AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Å motta blodoverføring?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Å bo sammen med en person som er HIV-smittet eller har AIDS (uten seksuell involvering)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Å gi blod?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Å dele nåler med en som er HIV-smittet eller har AIDS i forbindelse med rusmisbruk?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Hva synes du om utsagnene om de nye behandlingsformene? Med de nye behandlingsformene ...

	Ja	Kanskje	Tvilsomt	Nei	Vet ikke
er det mulig å bli helt kurert for HIV/AIDS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
er det mulig for HIV-smittede som behandles å ikke smitte andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
er folk flest blitt mindre redde for å bli HIV-smittet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
beskytter folk seg mindre mot HIV/AIDS enn før	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
er folk flest mindre bekymret om de tror de har vært utsatt for HIV-smitte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Ekspertene på HIV/AIDS har snakket om spredning og forebygging av HIV/AIDS. Velg ett svaralternativ på følgende spørsmål.

	Ja	Nei	Vet ikke
Sier de fleste eksperter at det er høy sjanse for å få HIV/AIDS ved å kysse noen som har HIV/AIDS på munnen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at HIV/AIDS kan spres ved å dele nåler med en narkotikamisbruker som har HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at man kan få HIV/AIDS ved å gi blod?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at det er stor sjanse for at HIV/AIDS kan spres ved å dele et vannglass med noen som har smitten?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at det er stor sjanse for å få HIV/AIDS fra et toalettsete?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at HIV/AIDS kan spres dersom en mann har ubeskyttet samleie med en kvinne som har HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at HIV/AIDS kan spres dersom en mann har ubeskyttet samleie med en annen mann som har HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at en gravid kvinne med HIV/AIDS kan gi HIV/AIDS til sin ufødte baby?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at man kan få HIV/AIDS ved å håndhilse med noen som har HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at en kvinne kan få HIV/AIDS ved å ha ubeskyttet samleie med en mann som har HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at man kan få HIV/AIDS når man onanerer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at å bruke kondom kan minske sjansen for å få HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at det er stor sjanse for å få HIV/AIDS dersom man mottar en blodoverføring?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at prostituerte har høyere risiko for å få HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at å spise sunt kan forhindre at man får HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at å ha samleie med mer enn én partner kan øke sjansen for å få HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at man alltid kan se om noen har HIV/AIDS bare ved å se på dem?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at mennesker med HIV/AIDS kommer til å dø av det?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at det finnes en kur mot HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at du kan være HIV-smittet uten å bli AIDS syk?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at dersom en mann eller kvinne har samleie med noen som bruker narkotika, øker det sjansen for å få HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sier de fleste eksperter at HIV-medisiner er mer effektive enn kondomer når det gjelder å hindre HIV-smitte?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Holdninger til HIV og AIDS

13. Hvor langt er du enig i følgende påstander?

	Helt enig	Enig	Uenig	Helt uenig	Vet ikke
Folk med HIV/AIDS må isoleres fra resten av befolkningen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hvis din partner var HIV-smittet, skulle partners lege være pliktig (ved lov) til å informere deg, selv uten hans/hennes samtykke.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Velinformerte HIV-smittede tar foholdsregler for ikke å smitte andre.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Følgende påstander reflekterer holdninger om HIV/AIDS. Benytt deg av skalaen, og svar ut i fra hva som best beskriver din reaksjon på hver av påstandene.

	Svært enig	Enig	Usikker	Uenig	Svært uenig
Jeg er overbevist om at jeg har nok informasjon om HIV/AIDS til å kunne beskytte meg selv i min daglige sosiale omgang med andre mennesker.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg bekymrer meg for å helt tilfeldig komme i kontakt med en person som har HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aktiviteter som sprer HIV, som noen typer seksuell atferd, bør forbys.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg føler meg ukomfortabel når jeg kommer i kontakt med homoseksuelle menn på grunn av muligheten for HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg tror jeg har nok informasjon om HIV/AIDS til å kunne beskytte meg mot mulige smittesituasjoner i mitt fremtidige arbeid.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personer med HIV/AIDS er selv ansvarlige for å ha blitt smittet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lover bør vedtas for å beskytte personer med HIV/AIDS mot arbeidsdiskriminering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mannlig homoseksualitet er unaturlig og vulgært.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resultater fra HIV-tester bør være konfidensielle for å unngå diskriminering av personer med positivt resultat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg mener at mer tid i lærerutdanningen bør brukes på HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg vil heller slutte i jobben min enn å arbeide sammen med noen som har HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Folk bør ikke skyldes på de homofile for spredningen av HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS er en straff for umoralsk atferd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg føler meg sikker på at jeg har redusert min egen risiko for HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg mener at alle barn bør HIV-testes før de begynner på skolen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg mener at det er hovedlæreren i grunnskolen som har ansvaret for HIV/AIDS undervisningen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter min mening bør foreldrene til alle elever gjøres oppmerksom på det, dersom en elev i klassen har HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg mener at skolepersonalet i direkte kontakt med en person som har HIV/AIDS bør bli informert.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg mener elever med HIV/AIDS på en fullverdig måte bør delta i alle daglige aktiviteter i klasserommet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg støtter å inkludere undervisning om HIV/AIDS i skolepensumet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
En lærer med HIV/AIDS bør ha tillatelse til å fortsette med undervisning av elever.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg blir redd når jeg tenker på at jeg kan ha en medstudent med HIV/AIDS i klassen min.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg synes lærere bør ha rett til å nekte studenter med HIV/AIDS å være i klasserommet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Vær vennlig å angi i hvilken grad de følgende utsagnene passer for deg. Bruk ikke for lang tid på å tenke gjennom hvert spørsmål. Det er din umiddelbare reaksjon vi er interessert i.

[illegible]

Atferd

16. Har du noen gang testet deg for HIV?

- ☐ Ja, i løpet av de siste 3 måneder
- ☐ Ja, i løpet av de siste 6 måneder
- ☐ Ja, i løpet av de siste 12 måneder
- ☐ Ja, for lenger tid siden
- ☐ Nei

17. Har du noen gang hatt samleie?

- ☐ Ja
- ☐ Nei

18. Hvor mange seksualpartnere har du hatt totalt i livet?

Antall partnere

19. Brukte du kondom første gang du hadde samleie med din siste partner?

- ☐ Ja, for å beskytte meg mot uønsket graviditet
- ☐ Ja, for å beskytte meg mot HIV
- ☐ Ja, for å beskytte meg mot andre kjønnssykdommer
- ☐ Nei

Appendix D: Information Sheet and Consent Form

RESEARCH PROJECT: INFORMATION SHEET

Title of Research Project: *“A study considering the relationship between students’ knowledge, attitudes and risk behavior toward HIV/AIDS”*

Thank you for considering participation in this study about HIV/AIDS. The aim of the study is to find out what students like to think about HIV and AIDS. We are seeking to understand your knowledge, behavior and attitudes regarding HIV/AIDS.

If you agree to participate, you will be asked to complete a survey consisting of questions regarding your social background, attitudes, behavior and knowledge about HIV/AIDS. The survey should take you no more than 10-15 minutes to complete. You will not be asked to give your name which means that no one will know how you responded to the questions on the survey.

The study has been approved by the University of the Western Cape. The research process is guided by strict ethical considerations of the University of the Western Cape and will be adhered to at all times.

If there is any part of the survey that causes you emotional discomfort, please consult the research supervisor Professor Kelvin Mwaba who will arrange professional support for you.

Thank you for your participation! We value your time and support.

Professor Kelvin Mwaba
Department of Psychology
University of the Western Cape
Tel. (021) 959 2283/2453

CONSENT FORM

Title of the Research Project: *“A study considering the relationship between students’ knowledge, attitudes and risk behavior towards HIV/AIDS”*

The study has been described to me in a language that I understand. I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant’s name.....

Participant’s signature.....

Date.....

Should you have any questions regarding this study or wish to report any problems you have experienced related to it, please contact the master student at her e-mail address: veronsto@student.sv.uio.no, or her supervisor Professor Kelvin Mwaba at the University of the Western Cape; e-mail address: kmwaba@uwc.ac.za

Appendix E: The Cape Town Questionnaire

Social background

Here are some questions about your social background and social situation. Indicate your response with a cross in one of the circles.

1. Are you a...?

- ☐ Man
☐ Woman

2. Which year were you born?

Year

3. What is your sexual orientation?

- ☐ Heterosexual
☐ Homosexual/lesbian
☐ Bisexual
☐ None of the above

4. People can have different perceptions about how important sexuality is. How important is sexuality in your life?

- ☐ Not important at all
☐ Somewhat unimportant
☐ Neither important nor unimportant
☐ Somewhat important
☐ Very important

5. What is your current status regarding a (one-to-one) relationship?

- ☐ Single, and have never been in a solid relationship
☐ Single, and have been in a solid relationship before
☐ In a solid relationship, but we don't live together
☐ Living together with a partner (cohabitant/married)

6. Do you know anyone personally who is HIV-infected?

- ☐ Yes
☐ No

7. Have you heard of any new treatments for HIV and AIDS?

- ☐ Yes
☐ No
☐ Not sure

8. Do you think that a vaccine for HIV/AIDS ...

- ☐ is available now?
☐ will be available within the next 5 years?
☐ will be available within the next 10 years?
☐ will never be available?
☐ Not sure

Knowledge about HIV and AIDS

We would like to know a little bit about your knowledge regarding HIV and AIDS. Indicate your response with a cross in one of the boxes.

9. To what degree do you think the following actions can cause HIV-infection and AIDS

	1 To a low degree	2	3	4	5	6	7 To a high degree
Working nearby someone who has HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kissing someone who is HIV-infected or has AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a blood transfusion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Living together with a person who is HIV-infected or has AIDS (without sexual involvement)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving blood?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sharing needles with someone who is HIV-infected or has AIDS concerning substance abuse?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. What do you think about the following statements regarding the new types of treatments for HIV? By using the new types of treatments ...

	Yes	No	Not sure
it's possible to get totally cured from AIDS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
it's possible for treated HIV-infected not to infect others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
most people have been less afraid to get HIV-infected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
people protect themselves to a lower degree than before against HIV/AIDS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
most people are less worried if they think they have been exposed to HIV-infection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Experts on HIV/AIDS have talked about the spread and prevention of HIV/AIDS.

Choose one alternative answer on each of the following questions.

	Yes	No	Not sure
Do most experts say there's a high risk of getting HIV/AIDS by kissing someone on the mouth who has HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say HIV/AIDS can be spread by sharing a needle with a drug user who has HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say you can get HIV/AIDS by giving blood?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say there's a high chance that HIV/AIDS can be spread by sharing a glass of water with someone who has the infection?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say there's a high chance you can get HIV/AIDS from a toilet seat?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say HIV/AIDS can be spread if a man has unprotected sex with a woman who has HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say HIV/AIDS can be spread if a man has unprotected sex with another man who has HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say a pregnant woman with HIV/AIDS can give HIV/AIDS to her unborn baby?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say you can get HIV/AIDS by shaking hands with someone who has HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say a woman can get HIV/AIDS by having unprotected sex with a man who has HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say you can get HIV/AIDS when you masturbate by yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say using a condom (rubber) can lower your chance of getting HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that there's a high chance of getting HIV/AIDS if you get a blood transfusion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that prostitutes have a higher chance of getting HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that eating healthy foods can keep you from getting HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that having sex with more than one partner can raise your chance of getting HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that you can always tell if someone has HIV/AIDS by looking at them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that people with HIV/AIDS will die from it?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say there is a cure for HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that you can have the HIV-virus without being sick from AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that you can have the HIV-virus and spread it without being sick from AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that if a man or a woman has sex with someone who shoots up drugs, they raise their chance of getting HIV/AIDS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do most experts say that HIV-medicines are more efficient than condoms when it comes to prevention of HIV-infection?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Attitudes towards HIV and AIDS

12. How much do you agree with the following statements?

	Completely agree	Agree	Disagree	Completely disagree	Don't know
People with HIV/AIDS must be isolated from the rest of the population.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If your partner was HIV-infected, your partner's doctor should be compulsorily (by law) to inform you, even without his/her consent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Well informed HIV-infected people take precautions not to infect others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. The following statements reflect attitudes about HIV/AIDS. Use the scale, and choose your answer based on what best describes your reaction to each statement.

	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
I believe I have enough information about HIV/AIDS to protect myself in my social life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry about possible casual contact with a person with HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Activities that spread HIV, such as some forms of sexual behaviour, should be illegal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel uncomfortable when coming in contact with gay men because of the risk that they may have HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe I have enough information about HIV/AIDS to protect myself in my future work setting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Persons/people with HIV/AIDS themselves are responsible for getting their illness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Civil right laws should be enacted/enforced to protect people with HIV/AIDS from job and housing discrimination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Male homosexuality is obscene and vulgar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV antibody blood test results should be confidential to avoid discrimination against people with positive results.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that more time should be spent teaching future teachers about HIV/AIDS in their college courses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would quit my job before I would work with someone who has HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People should not blame the homosexual community for the spread of HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS is a punishment for immoral behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel secure that I have reduced all risks of personally contracting HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think all children should be tested for HIV before entering school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe it is the regular elementary classroom teacher's responsibility to teach HIV/AIDS education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my opinion, parents of all students in the class should be notified if there is a student with HIV/AIDS in the class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that all school personnel who have direct contact with a student with HIV/AIDS should be notified.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that students with HIV/AIDS should be allowed to fully participate in the day-to-day activities of the regular classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would support including HIV/AIDS education in the school curriculum.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A teacher with HIV/AIDS should be allowed to continue teaching.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It scares me to think that I may have a fellow student with HIV/AIDS in my class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that teachers should have the right to refuse to have students with HIV/AIDS in their classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I could comfortably answer student's questions about HIV/AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Indicate to which degree the following statements suit you. Don't use a lot of time to think it through. We are interested in your immediate reaction.

	1 To a low degree	2	3	4	5	6	7 To a high degree
I view HIV/AIDS as a punishment for immoral behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that you can affect your friends on practicing safer sex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think HIV/AIDS can be prevented.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS is not my problem, but many others'.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm not the type of person who is likely to get infected with HIV.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Change of behaviour can reduce the occurrence of HIV-infection.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS is related to prostitution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS is related to men who have sex with men.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS is related to the colour of the skin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS is related to poverty.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS is related to hypes (injection drug addicts)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I wanted to have sex with a new partner, and we didn't have a condom available, I would have sex anyway.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Behaviour

15. Did you ever take an HIV-test?

- ☐ Yes, during the last 3 months
- ☐ Yes, during the last 6 months
- ☐ Yes, during the last 12 months
- ☐ Yes, a long time ago
- ☐ No

16. Have you ever had sex? IF THE ANSWER IS NO, THAT CONCLUDES THE SURVEY, THANK YOU FOR YOUR PARTICIPATION! IF THE ANSWER IS YES, THEN ANSWER QUESTION 17 AND 18 AS WELL.

- ☐ Yes
- ☐ No

17. How many sexual partners have you had throughout your life?

Number of partners

18. Indicate your response to this question by putting one or more cross/crosses in the box/boxes below. Did you use a condom the first time you had sex with your last partner?

- ☐ Yes, to protect myself against unwanted pregnancy
- ☐ Yes, to protect myself against HIV/AIDS
- ☐ Yes, to protect myself against other venereal diseases
- ☐ No

Thank you!

This is the end of the survey. Thank you so much for your participation!