Efficacy of a HIV intervention in the workplace, as measured by KAP (knowledge, attitudes and practices) questionnaires: a before and after study

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Efficacy of a HIV intervention in the workplace, as measured by KAP (knowledge, attitudes and practices) questionnaires: a before and after study

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I declare that the dissertation, which I hereby submit for the degree MMed (Community Health) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at another university.

W W Rossouw

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TABLE OF CONTENTS

Page

TABLE OF CONTENTS **Page**

TABLE OF CONTENTS **Page**

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES

LIST OF ACRONYMS AND DEFINITIONS

AIDS	**A**cquired **I**mmunity **D**eficiency **S**yndrome. This syndrome manifests itself as the final stages of HIV infection.
HIV	(**H**uman **I**mmuno-deficiency **V**irus) - the virus that causes AIDS.[1]
Virus	A microbiological organism that is the smallest and most basic of known organisms.
HIV-infected employee	An employee who proves positive (in a laboratory test) of HIV infection.
Immune system	The part of the body whose function is to defend the body against invading harmful organisms and foreign bodies.
HI virus (causes AIDS)	The virus survives in bodily fluids such as blood, semen, saliva and tears. To date no case has been reported where AIDS was transmitted from either saliva or tears. All proven cases of the disease have been caused by the transmission of semen or blood. An HIV-infected employee can transmit the virus to others although no symptoms are apparent.[2] The HI-virus is very weak and cannot survive for long in the open.
STD	**S**exually **T**ransmitted **D**isease.
Bisexual	Sometimes sex with male, sometimes female partner(s).
Heterosexual	Only having sex with opposite sex.
Homosexual	Sex with partner(s) of same sex.

SUMMARY

Aim: The overall aim of the study was to evaluate the efficacy of an intervention programme in combating HIV / AIDS in the workplace, using KAP questionnaires to evaluate changes before and after the intervention. A refractory industry, manufacturing heat resistant bricks, was targeted.

Objectives: The specific objectives were to: (1) establish the baseline knowledge, attitudes and practices profile of the company's employees; (2) ascertain the reliability of the measures encapsulated in the questionnaires; (3) roll-out the full intervention programme; and (4) determine the knowledge, attitudes and practices profile of the company's employees after 6 months of the intervention.

Methodology: A structured questionnaire, with a respondent information leaflet and consent form, was designed to obtain information on: demographic characteristics, general knowledge, attitudes and practices regarding HIV / AIDS. An English questionnaire was distributed to each employee, 150 in total, together with their salary slips, before the intervention was initiated. A repeat questionnaire was distributed six months later. For illiterate employees, or those having difficulty in understanding certain terminology, venues were arranged where small groups were given help in completing the questionnaire. Transparencies on an overhead projector were used in assisting the completion of questionnaires, thus still ensuring confidentiality.

A research assistant was trained as a fieldworker to administer the questionnaires at the end of February 2003 and the end of August 2003.

Descriptive statistics were the first step for data analysis. Thereafter, the reliability (internal consistency) analyses were conducted on all scales. T tests were used to ascertain demographic effects and pre and post-intervention effects on knowledge, attitudes and practices. Pearson product-moment correlation coefficients and one-way analysis of variance (ANOVA), with Bonferroni adjustments for multiple comparisons, tested group effects.

The results of the questionnaire were analysed and presented to management to keep them abreast of the progress. A summary of the responses to each question was used as an aid in guiding health education. The rest of the roll-out programme involved the drawing up of a policy on HIV / AIDS in the workplace, training of peer educators, health education with the use amongst others of videos, posters and pamphlets, putting up condom dispensers in ablution blocks and effectively treating sexually transmitted diseases.

The same questionnaire was administered after 6 months to evaluate to what extent, if any, the rollout programme improved knowledge, attitudes and practices. Questions that did not discriminate and were not reliable in the first questionnaire were not included in the second.

Results: Sixty-four questionnaires were returned from the 150 that were handed out at the end of February 2003 (42.7%). Ninety-six of the 150 questionnaires were returned after the second round of questionnaires, handed out at the end of August 2003 (64%).

Demographic Information: In the pre-intervention group the mean age of male respondents was 37.7 years (sd = 9.3) and 39.9 years (sd = 11.2) for the female respondents. There were no significant differences in age between males and females ($p > 0.05$). In the post-intervention group the mean age of male respondents was 38.8 years (sd = 9.3) and 44.4 years (sd = 6.8) for the female respondents. There were no significant differences in age between males and females ($p > 0.05$).

Beliefs of Respondents: There was a significant decrease ($p < 0.05$) in the level of positive beliefs about HIV / AIDS after the intervention.

Transmission Knowledge of Respondents: The post-intervention group had significantly better transmission knowledge ($p < 0.01$) about HIV / AIDS.

Avoidance: There were no significant differences ($p > 0.05$) about avoidance found between the pre and post-intervention groups.

Perceived attitudes of others: The post-intervention group had significantly better perceptions of attitudes of others ($p = 0.01$).

Attitudes towards people with HIV / AIDS: There were no significant differences between the pre and post-intervention groups on their attitudes towards people with HIV / AIDS ($p > 0.05$).

Practices: The post-intervention group had significantly better knowledge of high-risk practices for contracting HIV / AIDS ($p < 0.01$). There were, however, no significant differences between the pre and post-intervention groups in their usage of and beliefs about condoms ($p > 0.05$).

Influence from significant others: The post-intervention group was significantly more influenced ($p = 0.01$) than the pre-intervention group by their significant others.

Reliability: Several scales were found to be usable and varied from acceptable to very good. These were knowledge about transmission; knowledge about high-risk practices; condom usage and beliefs; and significant others in the pre-intervention group. In the post-intervention group the scales were beliefs; knowledge about transmission; perception of attitudes; knowledge about high-risk practices; condom usage and beliefs; and significant others.

Hypotheses: The following hypotheses were tested: (1) Knowledge, attitudes and practices are positively related; (2) Women have more knowledge about HIV / AIDS than men; (3) Language affects knowledge, attitudes and practices; (4) Race affects

knowledge, attitudes and practices; and (5) Age is related to knowledge, attitudes and practices. All the hypotheses received partial support in either or both the pre and post-intervention groups.

Conclusions: The intervention programme, as was demonstrated by the KAP questionnaires, significantly improved the knowledge levels of transmission; perceptions of attitudes towards people with HIV / AIDS; knowledge about high-risk practices; and openness to be influenced by significant others.

The captive audience of employees grouped together as peers seemed to be an ideal platform to launch intervention programmes.

Hypotheses 1, 3 and 4 received partial support in both intervention groups, but hypotheses 2 and 5 only in the pre-intervention group.

Recommendations: Every responsible employer should get involved in preventing the spread of HIV / AIDS.

Peer educators should form part of every intervention programme in the fight against HIV / AIDS.

The peer educator system should be utilised to establish ownership by the employees.

Regular contact between the professional nurse and the peer educators should be maintained throughout; this is necessary to ensure: trust of fellow employees in the knowledge of their peer educators; the ultimate success of the peer educator system; and a 'bottom-up' approach.

In order to evaluate intervention effects, it is recommended that pre and post-intervention testing with KAP questionnaires be conducted.

Intervention programmes should not only focus on increasing knowledge levels, but also on skills training, particularly communication in relationships.

It is very important that condoms should be freely available to limit unprotected sexual encounters.

1 INTRODUCTION

The AIDS epidemic is having a profound effect on economic and social development.[3] An estimated 1,700 South Africans are infected with HIV every day. At the end 2002 there were probably 5.36 million HIV+ people in South Africa.[4] Sub-Saharan Africa is worst hit by this pandemic with an estimated 70.25% of the total cases in the world at the end of 2001.[5] HIV / AIDS is and will continue to take a severe human and economic toll.[6-7] On the other hand, even amongst low socio-economic groups it is found that better disease management occurs when individuals are better educated.[8]

1.1 Literature review

It seems as if the only method of bringing the HIV pandemic under control is by changing practices that facilitate its spread.[9] Free availability of condoms and training in 'condom negotiation skills' are important elements in curbing the spread of the disease.[10, 11, 12] In spite of having all the knowledge, people do not make the all-important changes to safeguard them against contracting HIV and might even be reluctant to change attitudes and ideas.[10, 13] People usually change when those around them are changing, for example their peers or significant others.[14] Changes in attitudes and practices are usually taking longer than knowledge levels to improve.[15] All efforts should be focussed on implementing means to curb the spread of the pandemic especially increasing levels of knowledge about transmission of the disease.[16]

Such behavioural change is only possible if people are informed and educated in respect of HIV / AIDS. Uganda is a good example of this fact. Uganda had the highest incidence of HIV / AIDS in Africa. An active AIDS awareness campaign with presidential commitment assisted in a complete turnaround making Uganda today the country with the lowest AIDS incidence in Africa.[17] The latest indications are that HIV prevalence among young adults continues to fall in Uganda.[4]

AIDS is a disease that knows no racial or class boundaries. In fact, it is the conduct of individuals that creates a risk for him/her in respect of this disease or protects him/her from it.[18] Inaccurate information and misperceptions regarding the illness cause fear and alienation of people with the disease.[18, 19, 20] Sufficient HIV / AIDS information and training appear to diminish fear and hysteria regarding the disease.[18, 19, 21] Individuals suffering from a disease also tend to have high levels of knowledge about their own disease.[22] With the high HIV positive prevalence rate in Gauteng it is to be expected that any plant located in this province might have a similarly high prevalence rate and therefore high knowledge levels about HIV / AIDS.[4]

In addition, the following benefits can be gained by implementing a structured HIV / AIDS policy and HIV / AIDS awareness programme in any company

- improved quality of life for employees with HIV / AIDS;[21]
- increased productivity;[21]
- increased awareness and knowledge of HIV / AIDS;[21] and

- increased awareness and knowledge of the possible impact of the epidemic.[21]

AIDS is in the first place everyone's responsibility in meeting the following responsibilities:

- Making yourself available for training in respect of AIDS.[23]
- Limiting the risk of infection.[18, 19, 24]
- Giving assistance to those who are infected with AIDS.[18, 19, 23]

HIV / AIDS is not a notifiable disease and can only be reflected as a normal illness and / or disability in the Employee Assistance Policy of companies. The Employment Equity Act should be resonated in companies' Employee Assistance Policy to ensure that reasonable accommodation is made for disability.[25] Such a policy that encapsulates HIV / AIDS is intended to assist managers in

- creating a work environment geared to manage the complexities caused by employees infected by HIV / AIDS;[26]
- responding to the concerns of employees who may request management's assistance;[18, 19]
- recognising that a supportive and caring response is an important factor in maintaining the quality of life for an employee who has HIV or AIDS;[18, 19] and
- minimising the spread of the pandemic.[18, 19]

Managers and employees should be sensitive to the special needs of employees and assist them by demonstrating personal support and referring them to counselling services, when necessary.[18, 19]

Employees grouped together as peers have been the subjects of research in many programmes attempting to curb the spread of this pandemic.[27] Sponsoring an education programme for employees has proved to be the most effective method. It appear to be also of utmost importance that managers are informed and able to assist in the management of people living with HIV / AIDS.[18, 19, 28]

Training of peer educators should be undertaken.[27] Employees should be elected and trained to serve as sources of information and support to fellow employees.[11, 27] In many instances the peer educator could also be the representative for a department / section on the central steering committee on HIV / AIDS. They have proved to be an important mechanism to distribute the information (written and otherwise) in any Company.[11, 27] They might also be the catalyst for handling health issues back in their community or place of residence.[29] Furthermore, health workers including doctors are generally poor communicators and in our modern era, contrary to what took place historically, health education programmes should not be build solely around them anymore.[29]

Treating other sexually transmitted diseases (STD's) effectively has proved to reduce the infectiousness of the HIV infected person, as well as the vulnerability of the non-infected person having sexual intercourse with an infected individual.[12] Sexually transmitted diseases cause the viral load to rise temporarily, making the person more infectious, whereas STD's also cause breaks in the mucosal membranes making the non-infected person more vulnerable.[24] Since no cure of HIV / AIDS

presently exists, the emphasis is rather on prevention than curative services in the fight against this pandemic.[29, 30,]

AIDS does not present a risk to the health or safety of co-workers or customers.[18, 19] In the light of current medical and scientific evidence, the company should recognise that AIDS is a life-threatening illness, which is not transmitted through casual personal contact under normal working conditions.[18, 19] Colleagues are expected to continue normal working relationships with employees with HIV or AIDS.[25]

Specially designed posters and pamphlets can enhance employees' awareness of HIV / AIDS.[18] Management and the human resource personnel should be involved in encouraging and motivating employees to attend AIDS awareness sessions.[19] The main focus should be on HIV / AIDS education, which includes the clarification of myths and encouraging employees towards a safer lifestyle.[18, 19] Pamphlets and condoms should be easily available and accessible.[18] The influence of the mass media, positive regarding health promotion as well as negative influences, should never be underestimated.[29, 30] To elaborate further on the earlier remark that HIV / AIDS is everyone's responsibility, it is clear that vested interests of groups such as policymakers, decision makers, pressure groups and consumer groups should be set aside in order to benefit the campaign against this pandemic.[29]

The virus is not passed on through touching or shaking hands, the sharing of offices or utensils or saliva or tears.[18, 19] The touching of objects used by an infected person such as cups, glasses, food, towels, toilet seats, door handles or door knobs

or the use of a swimming pool cannot lead to infection with the HI-virus.[18, 19] It is therefore unacceptable for other employees to refuse to work with an HIV-infected employee. Such refusal will be unreasonable, scientifically unjustified and may place the refusing employee's own employment situation at risk.[25]

An employee's health condition is a private and confidential matter.[18] An employee with AIDS or HIV infection is under no obligation to disclose his/her condition to a manager or any other employee.[25] Managers are expected to protect the confidentiality of all information regarding an employee's health condition, including employee's HIV status.[25]

An employee with AIDS or HIV infection is expected to meet the same performance requirements that apply to other employees, with reasonable accommodation where necessary.[25] If an employee becomes unable to perform his/her job satisfactorily, managers should accommodate such employees, to enable them to meet established performance criteria.[25] Reasonable accommodation may include, but is not limited to, flexible or part-time working schedules, leave of absence, work restructuring or reassignment. This will be done within the context of job accommodation and work transitional programmes.[31]

The company should gather information regarding AIDS and HIV infection on an ongoing basis. If any significant developments occur, the policy should be modified accordingly.[18, 19] Fair labour practice implies the protection of employees in the workplace against stigmatisation and discrimination by colleagues, unions,

employers or clients.[18, 19, 25, 31] Information and education have proved to be essential to maintain a climate of mutual understanding, necessary to ensure this protection and sensitivity.[18, 19]

The Constitution of the Republic of South Africa requires the protection of certain fundamental rights and human dignity.[32] The Employment Equity Act requires the elimination of unfair discrimination.[25] The Labour Relations Act requires the elimination of unfair labour practices and the adherence to a Code of Good Practice.[31] The mentioned legislative imperatives all pertain to the fair treatment of people, regardless of their HIV status, in the workplace.

In terms of the Employment Equity Act, pre-employment testing for AIDS is generally prohibited.[33] It will be deemed an unfair dismissal to dismiss or to not employ an employee, merely because he/she is HIV-positive or has AIDS. If however, the employee's capacity to work is effected by his/her illness, the Incapacity Procedure set out in the Code of Good Practice on Dismissal published in terms of the Labour Relations Act,[31] may be followed. The reason for dismissal is thus capacity to work, not HIV status.

1.2 Motivation for the study

HIV / AIDS poses one of the greatest challenges to business development in Southern Africa and affects people at all levels of economic and social life. The workplace provides an excellent environment to implement a comprehensive HIV /

AIDS programme and is indeed a challenge to the management of organisations to do so. This challenge does not simply rest on a voluntary moral obligation on the part of an employer, but is also guided by the Codes of Good Practice in the Labour Relations and Employment Equity Acts.[19, 25]

2 AIM AND OBJECTIVES

The overall aim of the study was to evaluate the efficacy of the intervention programme in combating HIV / AIDS in the workplace, using KAP questionnaires to evaluate changes before and after an intervention. A refractory industry, manufacturing heat resistant bricks, was targeted. The specific objectives were to:

2.1 Establish the baseline knowledge, attitudes and practices profile of the company's employees.

2.2 Ascertain the reliability of the measures.

2.3 Rollout the full intervention programme.

2.4 Determine the knowledge, attitudes and practices profile of the company's employees after 6 months of the intervention.

3 METHODOLOGY

3.1 Research Design

A repeat cross-sectional intervention-based design was used. A KAP questionnaire was administered to the employees of a refractory industry before and after the intervention.

An English questionnaire was given to every employee (150 in total), together with their salary slips, at the end of February 2003 and again at the end of August 2003. For illiterate employees or those experiencing difficulty in understanding certain terminology, venues were arranged where small groups were given help in completing the questionnaire. Transparencies on an overhead projector were used in assisting the completion of questionnaires, thus still ensuring confidentiality. Informed consent (Appendix A) was obtained from every employee who participated, but handed in separately from the questionnaire.

A research assistant was trained as a fieldworker to administer the questionnaires at the end of February 2003 and again the end of August 2003.

The following hypotheses were tested:

3.1.1 Knowledge, attitudes and practices are positively related.

3.1.2 Women have more knowledge about HIV / AIDS than men.

3.1.3 Language affects knowledge, attitudes and practices.

3.1.4 Race affects knowledge, attitudes and practices.

3.1.5 Age is related to knowledge, attitudes and practices.

3.2 Study Site

A refractory industry, manufacturing heat resistant bricks in the Olifantsfontein area, was used. There is an onsite medical centre, offering both primary and occupational health care to predominantly male employees (127 males, 84.7%; 23 females, 15.3%), with 90 employees (60%) being black and 60 white (40%). A female professional nurse (with an additional qualification in occupational health) and a male nursing assistant are manning the medical centre.

Employees were residing in the Olifantsfontein area, but many have a second home further afield (e.g. Limpopo Province).

3.3 Intervention

Previously general health education was offered with no specific emphasis on any area of the health field. Obvious health problems with which employees presented were steering the main thrust of health education campaigns. These problems were, amongst others, personal hygiene affecting health (e.g. athlete's foot), sexually transmitted diseases (mainly gonorrhoea, treated as mixed infections with the syndromic approach) and upper respiratory infections.

The refractory industry introduced an HIV / AIDS committee to look into the development of an effective workplace programme to combat the spread of the disease amongst its employees.

3.3.1 Representatives from Departments

Representatives (Reps) from each Department were nominated to represent the whole of the Company on this committee. Their main responsibility was to keep their respective Departments abreast with the rollout of the programme and assist with all the initiatives as the programme unfolded.

3.3.2 Policy on HIV / AIDS in the workplace

The first action was to display a signed (by the Company CEO) Policy on HIV / AIDS throughout the premises (Appendix B). Subsequently this policy was translated into Sepedi / Setswana and also put up on notice boards.

3.3.3 Training of peer educators (Advisors)

Fellow employees selected an eager and motivated representative amongst them to be their peer educator. Ten employees were trained to serve as sources of information and support to fellow employees. They were all given a short course on general health and another course specifically dealing with HIV / AIDS, by the professional nurse.

In many instances the Advisor was also the representative for the Department on the central HIV / AIDS committee. They proved to be an important mechanism to distribute the information (written and otherwise) in the Company. It was ensured that regular contact with the professional nurse was ongoing throughout the entire period of the rollout programme. Before handing out the specific pamphlet of the month, the professional nurse discussed the entire pamphlet in detail with the group of Advisors.

3.3.4 Posters and pamphlets

Posters and pamphlets were distributed on a monthly basis to all of the Departments with the help of the Advisors and / or Reps. A theme per month, focusing on the various aspects of HIV / AIDS, was chosen to disseminate the information (Table 1). A health phrase (usually taken from the pamphlet of the month) depicting the theme of the month was attached to the pay slips of all employees. The phrase was also published in the Company's monthly newsletter 'The Grape Vine'.

Table 1 Monthly Themes

Month	Theme
1	HIV / AIDS and Rights (Appendix C)
2	Sexually Transmitted Diseases (STD's) (Appendix D)
3	HIV / AIDS in the Workplace (Appendix E)
4	Tuberculosis (TB) and HIV / AIDS (Appendix F)
5	Caring for people with HIV / AIDS (Appendix G)
6	HIV / AIDS and Relationships (Appendix H)

3.3.5 Health education

All medical personnel were encouraged to provide health education on an individual level during patient contact. Additionally, the professional nurse gave health education to groups on a regular basis throughout the entire Company.

3.3.6 Help-line

The toll-free national help-line on HIV / AIDS (0800-012-322) was made known throughout the entire Company. Employees were encouraged to utilise this facility since some issues might have been of such a nature that they did not have the courage to discuss it with the Advisor, nor the onsite medical personnel.

3.3.7 Condom dispensers

Extra condom dispensers were bought for the Company. This was an attempt to make condoms more accessible and available compared to previously where the clinic was the only distribution point.

3.4 The Questionnaire

A structured questionnaire (Appendix I), with a respondent information leaflet and consent form (Appendix A), was used. It consisted of 31 questions, with subsections. For a literate person, fluent in English, it takes approximately 10 to 15 minutes to complete the questionnaire.

The questionnaire was designed to obtain information on:

3.4.1 Demographic characteristics of the respondents (age, gender, home language).

3.4.2 General beliefs regarding HIV / AIDS.

3.4.3 Knowledge of transmission regarding HIV / AIDS.

3.4.4 General attitudes regarding HIV / AIDS.

3.4.5 General practices regarding HIV / AIDS.

3.4.6 Condom usage and beliefs

3.4.7 General information sources

General beliefs (Table 2): Five questions tested this aspect (questions 4 to 8). Three options were available on each, namely yes, no and don't know. All of these questions were again used in the second questionnaire because of their reliability.

The more correct responses the respondent selected, the better was his / her belief about HIV / AIDS. The above-mentioned table (Table 2) contains the questions, with the correct answers in bold.

Table 2 Questions on Beliefs

	Beliefs	Yes	No
4	Do you believe that there really is something like HIV / AIDS virus?	**Yes**	
5	Do you think HIV / AIDS poses a serious threat to your community?	**Yes**	
6	Can doctors cure HIV / AIDS virus?		**No**
7	Can traditional healers cure HIV / AIDS virus?		**No**
8	Is there a vaccine (an injection) against HIV / AIDS?		**No**

General knowledge (Table 3): Seven questions (question 9 to 14 and 29) with 9 subsections tested this aspect. Three options were available here as well, namely yes, no and don't know. Subsection 1 was not reliable and therefore removed from the second questionnaire. For the same reason of reliability questions 10 to 14 and 29 were also dropped from the second questionnaire.

Table 3 Questions on Transmission Knowledge

9	**HIV/AIDS is transmitted from 1 person to another by:**		**Yes**	**No**
	9.1	Different sex partners	**Yes**	
	9.2	Drug users	**Yes**	
	9.3	Through pregnancy	**Yes**	
	9.4	Blood transfusion	**Yes**	
	9.5	Forks, knifes etc.		**No**
	9.6	Personal contacts, like handshaking		**No**
	9.7	Insects, dog bites		**No**
	9.8	Homosexual relationship	**Yes**	
	9.9	Bisexual relationship	**Yes**	
10	Is it true that there is a greater risk of getting the HIV /AIDS virus when having sex while the women is menstruating?		**Yes**	
11	Is it true that someone who suffers from sexually transmitted diseases is more likely to get HIV / AIDS virus?		**Yes**	
12	Can a person have the HIV / AIDS virus for many years without looking ill?		**Yes**	
13	Do you think that a person who is infected with the HIV / AIDS virus but who feels and appears healthy can infect another person?		**Yes**	
14	Do people with HIV / AIDS get other diseases more easily?		**Yes**	
29	Can one be protected from getting the HIV / AIDS virus when one has sex with an uninfected partner only?		**Yes**	

A higher score (more correct responses – printed in bold in Table 3) represented a respondent with better knowledge about transmission.

General attitudes (Table 4): Eight questions (questions 15 to 20, 42 and 43) with 5 subsections tested this aspect. Here were also 3 options available on each, namely yes, no and don't know. All of these questions were again used in the second questionnaire because of their reliability.

A higher score (more true responses) represented a more negative perception of attitudes of others towards a person with HIV / AIDS (questions 16.1 to 16.5).

This was contrasted by the questions testing a respondent's attitudes towards people with HIV / AIDS (questions 18 to 20, 42 and 43). A higher score (more correct responses) represented a more positive attitude towards people with HIV / AIDS. Correct responses are in bold in Table 4.

Table 4 Questions on General Attitudes

Avoidance and Attitudes	Yes	No
15 Do you think that other people would avoid you if you have HIV/ AIDS?	Yes	
16 If yes at Q 15, why do you say so?		
16.1 Others will be afraid	Yes	
16.2 Others will be ashamed	Yes	
16.3 Will regard me as homosexual	Yes	
16.4 Will regard me as a prostitute	Yes	
16.5 Will think badly of me	Yes	
17 Do you think people who are infected with the HIV / AIDS virus should be blamed for their own infection?		No
18 Will you remain friends with a person who has been infected with the HIV / AIDS virus?	Yes	
19 Should people who are infected with the HIV / AIDS virus be made to resign from their jobs?	Yes	
20 Would you be willing to work with someone who has HIV / AIDS virus?	Yes	
42 Do you think that nurses will be prejudiced towards a person with the HIV / AIDS virus?	Yes	
43 Do you believe that a doctor will treat the knowledge that a patient has HIV / AIDS as confidential?	Yes	

General practices (Tables 5.1 to 5.3): Twelve questions (questions 21 to 26, 46 to 48 and 50 to 52) with 47 subsections tested this aspect. Again 3 options were available on some, namely yes, no and don't know. With others the subsections provided a number of alternatives (opportunity was granted to select more than one in some subsets).

Table 5.1 Questions on General Practices

21 Chance that you might get HIV / AIDS?	**Choice**
	1 No chance
	2 A small chance
	3 A moderate chance
	4 A big chance
22 If 'No chance' is given at Q21, then why?	1 Don't know**
	2 Practice safe sex
	3 No drug use
	4 No sex
	5 Using condoms always
	6 Avoid Persons with HIV / AIDS
	7 Only having sex with opposite sex**
	8 Taking medicine**
	9 Had no blood transfusion /contact with blood

Whenever subsections 1, 7 and 8 (marked with "**" under question 22) were selected, it was all regarded as poor reasons for "No chance" selected in question 21.

Choices (subsets) were also given at question 23 (when "Small chance" / "Moderate chance" was selected) and question 24 (when "Big chance" was selected). These 2 questions, however, were dropped from the second questionnaire due to a lack of reliability.

Table 5.2 Questions on General Practices (continued)

Do you find it acceptable to have more than one sexual partner	**Yes**	**No**
25 for a man as long as it is more than a month apart?		**No**
26 for a woman as long as it is more than a month apart?		**No**
46 Have you ever had a sexually transmitted disease?		**No**
47 Did you and your sexual partner inform each other about the STD?	**Yes**	
48 After hearing about HIV / AIDS did you think it was necessary to change your sexual behaviour?		**No**

Correct responses (in bold) in Table 5.2 represented more acceptable practices.

Due to a lack of reliability it was decided to drop all of these questions (5 in total) from the second questionnaire.

Table 5.3 Questions on General Practices (continued)

	Choice
50 If yes at Q 48: which behaviour did you change?	1 Changed to one partner
	2 Using condoms
	3 Not sharing utensils (blades, etc.)**
	4 Avoid drug abuse
	5 Wash after having sex**
	6 Visit clinic / doctor often**
51 If no at Q 48: why do you say so?	1 Always one partner
	2 Careful
	3 No drug use
	4 Use condoms
	5 AIDS does not exist**
	6 Had blood test**
	7 Not sexually active
52 Are your sexual partner(s)?	1 A man / men
	2 A woman / women
	3 Both (bisexual)

Whenever subsections marked by "**" were selected, it was regarded as poor reasons for their response in question 48.

Due to a lack of reliability it was decided to drop all 3 of these questions from the second questionnaire.

Condom usage and beliefs (Table 6): Fourteen questions (questions 27, 28, 30 to 39, 44 and 45) tested this aspect. Three options were available on each, namely yes, no and don't know.

Four questions (27, 28, 44 and 45) on condoms were dropped from the second questionnaire due to a lack of reliability.

A higher score (more correct responses – printed in bold in Table 6) represented more correct usage for and beliefs about condoms.

Table 6 Questions on Condom Usage and Beliefs

Condom Usage and Beliefs	Yes	No
27 Do you believe that using a condom when having sex can protect one from getting HIV / AIDS virus?	**Yes**	
28 Can a condom protect one against HIV / AIDS virus if the condom has been used before?		**No**
30 Do you think one should use condoms when having sex with casual sexual partner(s)?	**Yes**	
31 Do you think condoms make sex less enjoyable?		**No**
32 Would condom use make you feel ashamed?		**No**
33 Is condom use against your culture / religion?		**No**
34 Do you think condoms are easily available?	**Yes**	
35 Can one get condoms free of charge?	**Yes**	
36 Do you think the price of condoms is too high to use regularly?		**No**
37 Would you be ashamed to ask for or to buy condoms?		**No**
38 Do you think that one can insist that a regular partner/spouse should use a condom if you know that he/she has other sexual partners?	**Yes**	
39 If your partner suggests that a condom should be used, do you think it means that he/she does not trust you?		**No**
44 Have you ever had sex with anyone other than your spouse or regular partner?		**No**
45 If yes to Q44: Did you use a condom on any of these occasions?	**Yes**	

General information sources (Tables 7.1 to 7.2): Three questions (questions 40, 41 and 49) with 25 subsections tested this aspect. Again 3 options were available on some, namely yes, no and don't know. With others the subsections provided a number of alternatives (respondents were asked to select only one in a subset).

A higher score (more correct responses – printed in bold in Table 7.1) represented the situation where a person will be influenced by their significant others in their life.

Question 49 was omitted in its entirety as well as the very last option (in the subset) under question 41. This was also done due to a lack of reliability on these questions.

Table 7.1 Questions on Information Sources

	40 Will information on HIV/AIDS from the following sources influence your behaviour / way of life?	**Yes**	**No**
40.1	Your friends?	**Yes**	
40.2	Your relatives or family?	**Yes**	
40.3	A health advisor / worker?	**Yes**	
40.4	A nurse?	**Yes**	
40.5	A doctor?	**Yes**	
40.6	A person with HIV / AIDS?	**Yes**	
40.7	A traditional healer?	**Yes**	
40.8	A church leader / minister?	**Yes**	
40.9	Television?	**Yes**	
40.10	Radio?	**Yes**	
40.11	Printed material (newspapers) magazines, brochures, pamphlets?	**Yes**	

Table 7.2 Questions on Information Sources (continued)

		Choice
41	**Select the way in which you would most prefer to receive information about HIV / AIDS:**	1 Personal contact 2 Information on TV 3 Information over the radio 4 Information in printed materials 5 Don't know
49	**If yes to Q48: who influenced you most to change your behaviour?**	1 No one 2 Partner 3 Family 4 Mass media 5 Doctor / nurse 6 Church 7 Friends 8 Person with AIDS 9 Colleagues

3.5 Procedure

The questionnaire was in English, but for illiterate employees or those having difficulty in understanding certain terminology, venues were arranged where small groups were given help in completing the questionnaire. Transparencies on an overhead projector were used in assisting the completion of questionnaires, thus still ensuring confidentiality. Informed consent was obtained from every employee who participated, but the signed consent was handed in separately from the questionnaire.

At the end of February 2003 all 150 employees received the questionnaire together with their salary slips. This was completed anonymously and after completion, posted back in a sealed container after 1 week.

A research assistant was trained as a fieldworker to administer the questionnaires during the first week of March 2003 to illiterate employees. The assistant was supervised by the researcher and was able to consult him with any difficulties encountered.

The results of the questionnaire were analysed and presented to management to keep them abreast of the progress. A summary of the responses to each question was used as an aid in guiding health education. The rest of the rollout programme included the drawing up of a policy on HIV / AIDS in the workplace; training of peer

educators; health education with the use of amongst others videos, posters and pamphlets; putting up condom dispensers in ablution blocks; and effectively treating sexually transmitted diseases.

The same, but shortened questionnaire was administered after 6 months (end of August 2003) to determine if there were any changes after the rollout programme in improving knowledge and changing attitudes and practices. Questions that did not discriminate and were not reliable in the first questionnaire were not included in the second questionnaire.

3.6 Data Analysis

All data were analysed with the SPSS Version 11 PC statistical package.

Descriptive statistics were the first step for data analysis. Thereafter, the reliability (internal consistency) analyses were conducted on all scales; coefficient alpha of 0.70 was regarded as acceptable, between 0.71 and 0.80 as respectable and > 0.80 as very good.[34, 35] T tests were used to ascertain demographic effects and pre and post-intervention effects on knowledge, attitudes and practices. Pearson product-moment correlation coefficients and one-way analysis of variance (ANOVA), with Bonferroni adjustments for multiple comparisons, tested group effects.

3.7 Ethics

Ethical approval for the study was sought and obtained from the Faculty of Health Sciences Research Ethics Committee (University of Pretoria). Approval number of the Ethics Committee: **172 / 2002**. Informed consent was obtained from the respondents.

4 RESULTS

Sixty-four questionnaires were returned of the 150 that were handed out at the end of February 2003 (42.7%). Ninety-six of the 150 questionnaires were returned after the second round of questionnaires handed out at the end of August 2003 (64%). Baseline knowledge, attitudes and practices of the Company's employees were tested through 52 questions. The questionnaire consisted of 31 questions for the post-intervention evaluation. All percentages used were based on the number of respondents to each question.

4.1 Demographic Information

Pre-intervention

The mean age of male respondents was 37.7 years (sd = 9.3) and 39.9 years (sd = 10.2) for the female respondents. There were no significant differences in age between males and females ($p > 0.05$).

Sixty-two respondents indicated their gender; 46 males (74.2%) and 16 females (25.8%).

All 64 respondents indicated their home language. The most common home language was Afrikaans (23: 35.9%), followed by Sepedi (21: 32.8%), English (8: 12.5%), isiZulu and Xitsonga (4 each: 6.3%), other languages, not listed (3: 4.7%) and isiNdebele (1: 4.7%).

Post-intervention

The mean age of male respondents was 38.8 years (sd = 9.3) and 44.4 years (sd = 6.8) for the female respondents. There were no significant differences in age between males and females ($p > 0.05$).

Ninety respondents indicated their gender; 78 males (86.7%) and 12 females (13.3%).

Ninety-four respondents indicated their home language. The most common home language was Afrikaans (32: 34%), followed by Sepedi (29: 30.9%), English (12: 12.8%), other languages, not listed (8: 8.5%), Xitsonga (7: 7.4%), isiZulu (4: 4.3%) and then isiXhosa and Setswana (1 each: 1.1%).

4.2 Beliefs of Respondents

Five questions were used to assess (Table 8) the beliefs of respondents.

Pre-intervention: The lowest correct belief was for "a vaccine (an injection) against HIV / AIDS". The highest correct belief was for "there really is something like HIV / AIDS".

Post-intervention: The lowest correct belief was for "a vaccine (an injection) against HIV / AIDS". The highest correct belief was for "there really is something like HIV / AIDS".

Table 8 Beliefs of Respondents

Beliefs	February 2003 % Correct Responses	August 2003 % Correct Responses
Do you believe that there really is something like HIV / AIDS virus?	96.9	95.8
Do you think HIV / AIDS poses a serious threat to your community?	90.6	87.5
Can doctors cure HIV / AIDS virus?	92.2	79.2
Can traditional healers cure HIV / AIDS virus?	89.1	81.3
Is there a vaccine (an injection) against HIV / AIDS?	75.0	68.8

Pre-intervention: Five percent scored 2 questions correct and 66% scored all 5 correct.

The overall score on beliefs was 4.4 (sd = 0.89) with a minimum of 2 and maximum of 5.

Post-intervention: Six percent scored 2 questions correct and 52% scored all 5 correct.

The overall score on beliefs was 4.1 (sd = 1.08) with a minimum of 1 and maximum of 5.

There was a significantly more positive level of beliefs ($p < 0.05$) about HIV / AIDS in the pre-intervention group.

4.3 Transmission Knowledge of Respondents

Eight questions were used to assess the knowledge of respondents about transmission (Table 9).

Pre-intervention: The lowest correct knowledge about the transmission was for "transmitted from one person to another by drug users". The highest correct

knowledge about the transmission was for "transmitted from one person to another by blood transfusion".

Post-intervention: The lowest correct knowledge about the transmission was for "transmitted from one person to another by insects, dog bites". The highest correct knowledge about the transmission was for "transmitted from one person to another by blood transfusion".

Table 9 Transmission Knowledge of Respondents

Transmission	February 2003 % Correct Responses	August 2003 % Correct Responses
HIV / AIDS transmitted from one person to another by drug users	46.9	63.5
HIV / AIDS transmitted from one person to another through pregnancy	51.6	76.0
HIV / AIDS transmitted from one person to another by blood transfusion	65.6	85.4
HIV / AIDS transmitted from one person to another by forks, knifes etc.	51.6	62.5
HIV / AIDS transmitted from one person to another by personal contacts, like handshaking	59.4	80.2
HIV / AIDS transmitted from one person to another by insects, dog bites	53.1	59.4
HIV / AIDS transmitted from one person to another by homosexual relationship	54.7	75.0
HIV / AIDS transmitted from one person to another by bisexual relationship	50.0	83.3

Pre-intervention: Twenty eight percent knew nothing about transmission and 30% knew everything about it.

The overall score on transmission knowledge was 4.3 (sd = 3.37) with a minimum of 0 and maximum of 8.

Post-intervention: One percent knew nothing about transmission and 24% knew everything about it.

The overall score on transmission knowledge was 5.9 (sd = 2.07) with a minimum of 0 and maximum of 8.

The post-intervention group had significantly better transmission knowledge ($p < 0.01$) about HIV / AIDS.

4.4 Avoidance

One question tested avoidance amongst respondents (Table 10).

Pre-intervention: Sixty-seven percent of respondents indicated that they thought that others would avoid them if they had HIV / AIDS.

Post-intervention: Fifty-five percent respondents indicated that they thought that others would avoid them if they had HIV / AIDS.

Table 10 Avoidance

Avoidance	February 2003 % Positive Responses	August 2003 % Positive Responses
Do you think that other people would avoid you if you have HIV/ AIDS?	67.2	55.2

There were no significant differences ($p > 0.05$) about avoidance found between the pre and post-intervention groups. Fewer respondents in the post-intervention group thought that others would avoid them.

4.5 Perceived attitudes of others towards a person with HIV / AIDS

Five questions were used to assess the perceived attitudes of others towards a person with HIV / AIDS (Table 11).

Pre-intervention: The least likely reason for the perception of being ostracised by others was "regard me as homosexual". The most likely reason, on the other hand, was "Others will be afraid".

Post-intervention: The least likely reason for the perception of being ostracised by others was "regard me as homosexual". The most likely reason was "Others will be afraid".

Table 11 Perceived Attitudes towards an individual with HIV / AIDS

Reason for avoidance	February 2003 % Positive Responses	August 2003 % Positive Responses
Others will be afraid	62.5	69.8
Others will be ashamed	32.8	59.4
Will regard me as homosexual	18.8	29.2
Will regard me as a prostitute	26.6	42.7
Will think badly of me	37.5	54.2

Pre-intervention: Thirty-one percent of respondents had no negative perception at all, but 12.5% perceived attitudes of others in a totally negative light.

The overall score on personal perception of attitudes was 1.8 (sd = 1.78) with a minimum of 0 and maximum of 5.

Post-intervention: Twenty-five percent of respondents had no negative perception at all, but 22.9% perceived attitudes of others in a total negative light.

The overall score on personal perception of attitudes was 2.6 (sd = 1.92) with a minimum of 0 and maximum of 5.

The post-intervention group had significantly better perceptions of attitudes of others (p = 0.01).

4.6 Attitudes towards people with HIV / AIDS

Pre-intervention: Attitudes directed towards others (Table 12) varied from strong aversion ("nurses will be prejudiced") to more open acceptance ("made to resign from their jobs") of a person with HIV / AIDS.

Post-intervention: Attitudes directed towards others varied from strong aversion ("nurses will be prejudiced") to more open acceptance ("made to resign from their jobs" and "doctor will treat knowledge as confidential") of a person with HIV / AIDS.

Table 12 Attitudes towards people with HIV / AIDS

Attitude	February 2003 % Positive Responses	August 2003 % Positive Responses
Do you think people who are infected with the HIV / AIDS virus should be blamed for their own infection?	51.6	61.5
Will you remain friends with a person who has been infected with the HIV / AIDS virus?	81.3	77.1
Should people who are infected with the HIV / AIDS virus be made to resign from their jobs?	89.1	82.3
Would you be willing to work with someone who has HIV / AIDS virus?	79.7	69.8
Do you think that nurses will be prejudiced towards a person with the HIV / AIDS virus?	43.8	49.0
Do you believe that a doctor will treat the knowledge that a patient has HIV / AIDS as confidential?	76.6	82.3

Pre-intervention: Two percent of respondents were very negative, but 25% revealed a totally positive attitude.

The overall score on attitudes towards people with HIV / AIDS was 4.2 (sd = 1.35) with a minimum of 1 and maximum of 6.

Post-intervention: Seven percent of respondents were very negative, but 20.8% revealed a totally positive attitude.

The overall score on attitude towards people with HIV / AIDS was 4.2 (sd = 1.53) with a minimum of 1 and maximum of 6.

There were no significant differences between the pre and post-intervention groups on their attitudes towards people with HIV / AIDS ($p > 0.05$).

4.7 Practices

4.7.1 Chance to contract HIV / AIDS

Respondents were asked to give an estimate of their chance to contract HIV / AIDS (Table 13).

Pre-intervention: Thirty-nine percent in February 2003 felt that their conduct made them susceptible to contracting the disease. Sixty-one percent indicated that they had no chance of contracting HIV / AIDS, 25% a small chance, 3.1% a moderate chance and 10.9% a big chance.

Post-intervention: Fifty-eight percent in August 2003 felt that their conduct made them susceptible to contracting the disease. Forty-two percent indicated that they had no chance of contracting HIV / AIDS, 28.6% a small chance, 11.0% a moderate chance and 18.7% a big chance.

Table 13 Chance to contract HIV / AIDS

Chance	February 2003 % Positive Responses	August 2003 % Positive Responses
No chance that you might get HIV / AIDS	60.9	41.8
A small chance that you might get HIV / AIDS	25.0	28.6
A moderate chance that you might get HIV / AIDS	3.1	11.0
A big chance that you might get HIV / AIDS	10.9	18.7

4.7.2 Reasons offered for "No chance" of contracting HIV / AIDS

Respondents were granted the opportunity to give reasons for choosing "No chance" of contracting HIV / AIDS (Table 14).

Pre-intervention: The most common reason given for having no risk of contracting HIV / AIDS was "Practice safe sex". The least common reason offered was "Taking medicine".

Post-intervention: The most common reason given for having no risk of contracting HIV / AIDS was "Practice safe sex". The least common reasons offered were "Avoid Persons with HIV / AIDS" and "Only having sex with opposite sex".

Table 14 Reasons offered for "No chance" of contracting HIV / AIDS

Reason	February 2003 % Positive Responses	August 2003 % Positive Responses
Don't know	1.6	3.1
Practice safe sex	37.5	46.9
No drug use	15.6	27.1
No sex	3.1	9.4
Using condoms always	15.6	31.3
Avoid Persons with HIV / AIDS	1.6	4.2
Only having sex with opposite sex	7.8	4.2
Taking medicine	0.0	5.2
Had no blood transfusion or contact with blood	15.6	18.8

Pre-intervention: Fifty-nine percent respondents had low knowledge about high-risk practices. Five percent answered all the questions correctly.

The overall score on knowledge about high-risk practices was 0.8 (sd = 1.18) with a minimum of 0 and maximum of 4.

Post-intervention: Forty-four percent respondents had low knowledge about high-risk practices. One percent answered all the questions correctly.

The overall score on knowledge about high-risk practices was 1.5 (sd = 1.80) with a minimum of 0 and maximum of 8.

The intervention groups' knowledge of high-risk practices for contracting HIV / AIDS had significant differences ($p < 0.01$), with the post-intervention group superior.

4.7.3 Condom usage and beliefs

Ten questions were used to test usage of and beliefs about condoms (Table 15).

Pre-intervention: The worst usage of and beliefs about condoms was "condoms make sex less enjoyable". The best usage of and beliefs about condoms was "condoms are easily available".

Table 15 Condom Usage and Beliefs

Question	February 2003 % Correct Responses	August 2003 % Correct Responses
Do you think one should use condoms when having sex with casual sexual partner(s)?	90.6	85.4
Do you think condoms make sex less enjoyable?	46.9	43.8
Would condom use make you feel ashamed?	71.9	66.7
Is condom use against your culture / religion?	81.3	74.0
Do you think condoms are easily available?	98.4	94.8
Can one get condoms free of charge?	96.9	94.8
Do you think the price of condoms is too high to use regularly?	79.7	76.0
Would you be ashamed to ask for or to buy condoms?	82.8	71.9
Do you think that one can insist that a regular partner/spouse should use a condom if you know that he/she has other sexual partners?	89.1	78.1
If your partner suggests that a condom should be used, do you think it means that he/she does not trust you?	64.1	65.6

Post-intervention: The worst usage of and beliefs about condoms was "condoms make sex less enjoyable". The best usage of and beliefs about condoms was "condoms are easily available" and "get condoms free of charge".

Pre-intervention: Two percent had very incorrect usage for and beliefs about condoms and 23.4% had all the correct usages for and beliefs about condoms.

The overall score on condoms was 8.0 (sd = 1.95) with a minimum of 2 and maximum of 10.

Post-intervention: Two percent appeared to have very incorrect usage for and beliefs about condoms and 22.9% had all the correct usages for and beliefs about it.

The overall score on condoms was 7.5 (sd = 2.49) with a minimum of 0 and maximum of 10.

There were no significant differences between the pre and post-intervention groups in their usage of and beliefs about condoms ($p > 0.05$).

4.8 Influence from significant others

Pre-intervention: Influence from significant others (Table 16) that most likely change practices varied from "A doctor" (most likely) to the least likely source "A traditional healer".

Post-intervention: Influence from significant others that most likely changed practices varied from "Printed material" (most likely) to the least likely source "A traditional healer".

Table 16 Influence from significant others

Source	February 2003 % Positive Responses	August 2003 % Positive Responses
Friends	37.5	54.2
Relatives or family	35.9	56.3
A health advisor / worker	40.6	55.2
A nurse	34.4	54.2
A doctor	51.6	58.3
A person with HIV / AIDS	35.9	51.0
A traditional healer	14.1	32.3
A church leader / minister	34.4	49.0
Television	39.1	57.3
Radio	39.1	59.4
Printed material (newspapers) magazines, brochures, pamphlets	39.1	61.5

Pre-intervention: Twenty-five percent were not influenced by anyone, while one significant other person influenced 29.7% of respondents. Nine percent were influenced by all other significant others listed in the questionnaire.

The overall score on risk was 4.0 (sd = 4.36) with a minimum of 0 and maximum of 11.

Post-intervention: Twenty-three percent were not influenced by anyone, while one significant other person influenced 8.3% of respondents. Nineteen percent were influenced by all other significant others listed in the questionnaire.

The overall score on risk was 5.9 (sd = 4.48) with a minimum of 0 and maximum of 11.

The post-intervention group was significantly more influenced ($p = 0.01$) than the pre-intervention group by their significant others.

4.9 Information routes

Pre-intervention: Most respondents preferred personal contact as a route (Table 17) for information about HIV / AIDS. The least preferable way was indicated as information over the radio.

Post-intervention: Most respondents preferred printed material as a route for information about HIV / AIDS. The least preferable way was indicated as information over the radio.

Table 17 Information Routes

Route	February 2003 % Positive Responses	August 2003 % Positive Responses
Personal contact	43.8	28.1
Information on TV	29.7	31.3
Information over the radio	3.1	9.4
Information in printed materials	32.8	33.3

4.10 Reliability

Pre-intervention: Knowledge about transmission of HIV / AIDS satisfied the convergent validity criterion of ≥ 0.40.[36] The reliability analysis scale on knowledge about transmission had a coefficient alpha of 0.94 and the scale is therefore very good.[34, 35]

Perceptions of attitudes satisfied the convergent validity criterion of ≥ 0.40.[36] The reliability analysis scale on perception of attitudes had a coefficient alpha of 0.83 and the scale is therefore very good.[34, 35]

Table 18 Knowledge about High-Risk Practices – pre-intervention

Item	Corrected Item-Total Correlation
1 Don't know****	0.0000
2 Practice safe sex	0.4009
3 No drug use	0.7165
4 No sex****	0.1513
5 Using condoms always****	0.0305
6 Avoid Persons with HIV / AIDS****	0.2034
7 Only having sex with opposite sex	0.4845
8 Taking medicine****	0.0000
9 Had no blood transfusion /contact with blood	0.6640

Five items on knowledge about high-risk practices did not meet the item convergent validity criterion of ≥ 0.40.[36] These items marked '****' were removed and a second reliability analysis conducted. The reliability analysis with the remaining items 2, 3, 7 and 9 had a coefficient alpha of 0.78 and the scale is therefore respectable.[34, 35]

Table 19 Condom Usage and Beliefs – pre-intervention

	Item	Corrected Item-Total Correlation
1	'condoms when having sex with casual sex'	0.4721
2	'condoms make sex less enjoyable'	0.4033
3	'condom use make you feel ashamed'	0.5563
4	'condom use against your culture'	0.3025
5	'condoms are easily available'	0.2006
6	'condoms free of charge'	0.2430
7	'condoms is too high to use regularly'	0.3270
8	'ashamed to ask for condoms'	0.4041
9	'condom if he/she has other sexual partners'	0.2998
10	'partner suggests that a condom be used'	0.4626

Only condom usage and beliefs 1, 2, 3, 8 and 10 satisfied the convergent validity criterion of $\geq$ 0.40.[36] The reliability analysis scale with items 1 to 10 had a coefficient alpha of 0.70 and the scale is therefore acceptable.[34, 35]

All items of significant others satisfied the convergent validity criterion of ≥ 0.40.[36] The reliability analysis scale on significant others had a coefficient alpha of 0.95 and the scale is therefore very good.[34, 35]

Post-intervention: Three items on beliefs did not meet the item convergent validity criterion of ≥ 0.40.[36] These items marked '****' were removed and a second reliability analysis conducted. The reliability analysis with the remaining items 3 and 4 had a coefficient alpha of 0.85 and the scale is therefore very good.[34, 35]

Table 20 Beliefs – post-intervention

	Item	Corrected Item-Total Correlation
1	'really something like HIV / AIDS'****	0.2416
2	'HIV / AIDS poses a serious threat'****	0.0000
3	'doctors cure HIV / AIDS'	0.5348
4	'traditional healers cure HIV / AIDS'	0.4685
5	'vaccine against HIV / AIDS'****	0.2374

Three items (marked '****') on knowledge about transmission did not meet the item convergent validity criterion of ≥ 0.40.[36] The reliability analysis scale with items 1 to 9 had a coefficient alpha of 0.74 and the scale is therefore respectable.[34, 35]

Table 21 Transmission Knowledge – post-intervention

	Item	Corrected Item-Total Correlation
1	'Drug users'	0.4941
2	'Through pregnancy'	0.5299
3	'Blood transfusion'	0.5079
4	'Forks, knifes etc.'	0.4996
5	'Personal contacts, like handshaking'	0.5148
6	'Insects, dog bites'****	0.3353
7	'Homosexual relationship'****	0.2721
8	'Bisexual relationship'****	0.3583

All items of perception of attitudes satisfied the convergent validity criterion of ≥ 0.40.[36] The reliability analysis scale on perception of attitudes had a coefficient alpha of 0.86 and the scale is therefore very good.[34, 35]

Four items on knowledge about high-risk practices did not meet the item convergent validity criterion of ≥ 0.40.[36] These items marked '****' were removed and a second reliability analysis conducted. The reliability analysis scale with the remaining items 2, 3, 5, 6 and 9 had a coefficient alpha of 0.76 and the scale is therefore respectable.[34, 35]

Table 22 Knowledge about High-Risk Practices – post-intervention

Item	Corrected Item-Total Correlation
1 Don't know****	0.1221
2 Practice safe sex	0.6177
3 No drug use	0.6362
4 No sex****	0.3959
5 Using condoms always	0.4610
6 Avoid Persons with HIV / AIDS	0.5008
7 Only having sex with opposite sex****	0.2769
8 Taking medicine****	0.3806
9 Had no blood transfusion /contact with blood	0.5402

Only condom usage and beliefs 1 to 4, 6 to 8 and 10 satisfied the convergent validity criterion of $\geq$ 0.40.[36] The reliability analysis scale with items 1 to 10 had a coefficient alpha of 0.81 and the scale is therefore very good.[34, 35]

All items of significant others satisfied the convergent validity criterion of $\geq$ 0.40.[36] The reliability analysis scale on significant others had a coefficient alpha of 0.95 and the scale is therefore very good.[34, 35]

4.11 Hypothesis 1

"Knowledge, attitudes and practices are positively related"

Pre-intervention: Knowledge about transmission was positively related to personal perception of attitudes towards people with HIV / AIDS ($r = 0.325$, $p < 0.01$). Knowledge about transmission was also positively related to influence of significant others ($r = 0.328$, $p < 0.01$). Beliefs about HIV/ AIDS were negatively related to knowledge about high-risk practices ($r = -0.249$, $p < 0.05$).

Therefore, hypothesis 1 received partial support.

Post-intervention: Knowledge about transmission was positively related to beliefs about HIV/ AIDS ($r = 0.385$, $p < 0.01$) and to usage of and beliefs about condoms ($r = 0.294$, $p < 0.01$). Usage of and beliefs about condoms was also positively related to attitudes towards people with HIV / AIDS ($r = 0.288$, $p < 0.01$).

Therefore, hypothesis 1 received partial support.

4.12 Hypothesis 2

"Women have more knowledge about HIV / AIDS than men"

Pre-intervention: There were no significant differences between males and females on beliefs ($p > 0.05$) or knowledge about high-risk practices ($p > 0.05$).

However, women were significantly more knowledgeable than men about transmission of HIV / AIDS ($p < 0.01$).

Therefore, hypothesis 2 received partial support.

Post-intervention: There were no significant differences between males and females on beliefs ($p > 0.05$), knowledge about transmission ($p > 0.05$) or knowledge about high-risk practices ($p > 0.05$).

Therefore, hypothesis 2 is rejected.

4.13 Hypothesis 3

"Language affects knowledge, attitudes and practices"

Pre-intervention: There were no significant differences between any of the language groups on beliefs ($p > 0.05$) about HIV /AIDS.

English speaking respondents were significantly more knowledgeable than Sepedi / Setswana ($p < 0.01$) or Xitsonga / other ($p < 0.01$) speaking respondents about knowledge of transmission. The same was found between Afrikaans and Sepedi / Setswana ($p < 0.01$) and Xitsonga / other ($p < 0.01$) speaking respondents about knowledge of transmission of HIV / AIDS.

English speaking respondents had significantly superior knowledge over Nguni ($p < 0.05$) and Sepedi / Setswana ($p < 0.05$) language groups on knowledge about high-risk practices.

There were, however, no significant differences between the black language groups ($p > 0.05$), as well as no significant differences between English and Afrikaans respondents ($p > 0.05$) about knowledge of transmission. There were also no significant differences between English and Nguni language groups ($p > 0.05$), or between Afrikaans and Nguni language groups ($p > 0.05$).

Furthermore, there were no significant differences between any of the language groups on perception of attitudes ($p > 0.05$) or usage of and beliefs about condoms ($p > 0.05$).

Therefore, hypothesis 3 received partial support.

Post-intervention: There were no significant differences between any of the language groups on beliefs ($p > 0.05$).

English speaking respondents were significantly more knowledgeable than Sepedi / Setswana ($p = 0.01$) speaking respondents about the transmission of HIV / AIDS. The same was found between Afrikaans and Sepedi / Setswana ($p < 0.01$) speaking respondents about the transmission of HIV / AIDS.

There were, however, no significant differences between the black languages ($p > 0.05$), as well as no significant differences between the English and Afrikaans respondents ($p > 0.05$) about transmission.

No significant differences were found between any of the language groups on perception of attitudes ($p > 0.05$), knowledge about risk ($p > 0.05$) and usage of and beliefs about condoms ($p > 0.05$).

Therefore, hypothesis 3 received partial support.

4.14 Hypothesis 4

"Race affects knowledge, attitudes and practices"

Pre-intervention: The white group was significantly more knowledgeable about transmission ($p < 0.01$), about risk ($p < 0.01$) and was also significantly more influenced by their significant others ($p < 0.05$) than the black group.

The black group had significantly better attitudes towards people with HIV / AIDS ($p = 0.03$) than the white group.

No significant differences were found between the race groups on perception of attitudes ($p > 0.05$), beliefs ($p > 0.05$) and usage of and beliefs about condoms ($p > 0.05$).

Therefore, hypothesis 4 received partial support.

Post-intervention: The white group was significantly more correct in their beliefs about HIV / AIDS ($p < 0.05$) and also had significantly better knowledge about transmission ($p < 0.01$) than the black group.

There were no significant differences ($p > 0.05$) between the race groups on their attitudes towards people with HIV / AIDS ($p > 0.05$), knowledge about high-risk practices ($p > 0.05$) or on influences from their significant others ($p > 0.05$).

Therefore, hypothesis 4 received partial support.

4.15 Hypothesis 5

"Age is related to knowledge, attitudes and practices"

Pre-intervention: There were only significant positive correlations between the total knowledge about transmission and age of respondents ($r = 0.276$, $p < 0.05$).

Therefore, hypothesis 5 received partial support.

Post-intervention: No significant positive correlations with age were found ($p > 0.05$).

Therefore, hypothesis 5 is rejected.

5 LIMITATIONS

A shortfall of the study was the fact that the effect on knowledge that could have been obtained through other sources, was not controlled for. Programmes on radio, television, other media and even live programmes presented in the communities with HIV / AIDS messages, are presently commonplace throughout South Africa. Although the multitude of advantages of all of these efforts is not negated, this could also have had an effect on the results observed in the post-intervention group over the study period. To control for this influence, a similar company where no intervention programme is offered, could have been used during the same study period. Limitations are the availability of such "twin" companies, as well as accessibility for the researcher to utilise employees for such a study.

6 DISCUSSION

Beliefs: There were significantly more positive beliefs about HIV / AIDS in the pre-intervention group than in the post-intervention group. Cultural traditions are profoundly engraved into the South African society, typical of the whole human race. Man finds it only too easy to sabotage external influences like intervention programmes from within, by the simple act of not changing his attitudes and ideas about things.[10] Unacceptable behaviour is not necessarily the result of specific events, but is influenced by the human mind.[37]

Changes that became more negative over a period of time were also observed in the military environment. There was a decline in the commitment to many of the normative aspects of military service, particularly the commitment to selfless service, if an analysis was made of the responses of junior officers serving at the South African Military Academy. This article also highlights trends of a similar nature observed in other countries. It further remarked that commitment to altruistic values depends upon reinforcement from society. Where this is not forthcoming, soldiers are not likely to view their service in the military as a calling.[38] This emphasises the need for a well-developed peer educator system to continually reintroduce the desired beliefs in their sphere of influence, as people will change when those around them are changing.[14, 27]

Furthermore, this observation might not be so critical for the desired changes in practices expected in the post-intervention group. Other studies have shown that the beliefs specified by social-cognitive models do not reliably predict sexual behaviour.[13] In yet another study conducted, inaccurate beliefs about the risks posed by casual social contact increased after an intervention, as did the belief that people with AIDS deserve their illness. Approximately one third of the respondents at the end of this telephonic survey expressed discomfort and negative feelings towards people with AIDS.[20]

Transmission: The general level of knowledge about HIV / AIDS was fairly high amongst the respondents, even in the pre-intervention group. This is noted

especially in the light that the majority of the employees (and therefore a high percentage of the respondents) are "blue collar" workers.

The study site is situated in the Gauteng Province of South Africa. The Gauteng Province has the second highest HIV positive rate in South Africa[4] and a similarly high rate could therefore be assumed for the respondents. Higher levels of knowledge about HIV / AIDS were found in other studies amongst respondents that were aware of their positive HIV status.[22] In contrast, HIV negative (or individuals not aware of their positive status) respondents tend to have lower levels of knowledge about the specific disease (in our study HIV / AIDS).[22] This observation could also have contributed to the observed fairly high knowledge levels of our study. In another study it was found that a high-risk (pertaining to HIV / AIDS) group scored statistically significantly better on knowledge than a low-risk group, further supporting this notion.[39] The present study confirms findings in other studies, namely, there was still inaccuracy regarding HIV / AIDS transmission myths or how HIV / AIDS cannot be transmitted.[40]

The significant increase in knowledge about HIV / AIDS transmission after the intervention is a strong motivation factor to sustain the intervention programme. Findings from other studies showed that if people perceive a mode of transmission to be responsible for a disease, they do take significant measures to protect themselves against the disease.[16] Even when researchers controlled for socio-economic status and other factors, they found that more educated HIV positive or diabetic patients were more likely to adhere to treatment and perform better self-

management of their disease. This adherence made them experience improvements in their self-reported general health.[8] It is essential, though, to always promote a culturally sensitive and appropriate HIV / AIDS health promotion programme in South Africa.[40]

Perception of attitudes: The more positive perception of attitudes towards people with HIV / AIDS in the post-intervention group took place over a relative short period of time. Other studies documented a lag or inertia of attitudes and practices over the usually faster improvement of knowledge levels, a seemingly "persistence factor" that seems to block or undo many therapies.[15] Interventions should be aimed to increase tolerance of persons living with HIV / AIDS among the general population. It is important to reintroduce the elements in the intervention programme that addressed attitudinal aspects amongst the employees on an ongoing basis. Re-enforcement is necessary since it has been proven that stigma reduction interventions appear to work, but usually only in the short term.[41]

Attitudes towards HIV / AIDS people: There were no significant differences between the pre and post-intervention groups on their attitudes towards people with HIV / AIDS. This is in keeping with other research that documented rejection and social stigma associated with HIV / AIDS.[19, 22] As was mentioned above, attitudinal aspects in training should in effect influence attitudes towards other persons with HIV / AIDS.[19, 22, 41] Interventions should also target health workers through role modelling, diffusion of training and discussions of discrimination and human rights. This has shown to significantly affect the perception of risk groups and behaviours,

perceived skills in treatment and counselling.[42] It also reduced fears and increased concern for people with HIV disease, improved the climate of treatment and prevention of HIV infection.[42]

Risk: Too many respondents perceived themselves to be vulnerable to contracting HIV / AIDS in both intervention groups. The significant increase in knowledge about risk of contracting HIV / AIDS from the pre to post-intervention groups was heartening. Previous studies have shown that knowledge about risk factors for contracting a disease considerably reduce the risk of infection.[16, 43] On the other hand, psychological models which specify how behaviour is shaped by socially shared beliefs can be used as a basis for HIV-preventive education.[10] An application of these social-cognitive models undoubtedly represents a useful advance over simple information provision campaigns, which assume that increased knowledge will automatically promote behaviour change.[19] In some research it was shown that increased condom use rather than abstinence, non-penetrative sex or reduction in partner turnover offered the most promising approach to infection control.[10, 11, 12] By contrast the Ugandan study showed that an approach based on moral ethics embraced by each and everyone (even at presidential level), turned around the HIV / AIDS epidemic for the whole country.[17]

Social-cognitive models propose that measures of individuals' health-related beliefs can predict whether or not they will take preventive action. The measures specified include individuals' intentions and their beliefs concerning their susceptibility to a health threat, its severity, the benefits and barriers associated with precautions, the

degree to which others (such as their peers) approve of preventive measures, and their perceived ability to take precautions (self-efficacy).[10, 14, 44]

Practices: The post-intervention group had significantly better knowledge of high-risk practices for contracting HIV / AIDS. There were, however, no significant differences between the pre and post-intervention groups in their usage of and beliefs about condoms.

Studies conducted on reasons for non-use of condoms highlight situational constraints, especially substance use before intercourse and unplanned sexual encounters.[11] Specific measures have to be included in studies to explain and predict accurately why people do or do not engage in HIV-preventive behaviour, particularly to understand why those with seemingly appropriate beliefs and intentions do not act accordingly.[10, 13] As pointed out above, condom-related beliefs may not predict condom use, whereas previous practice may be a more powerful determinant of sexual behaviour. Sexually transmitted disease patients in China had low levels of HIV / AIDS and engaged in high-risk behaviours. The majority of patients reported having had multiple sex partners. When having sex, few men and no women reported always using condoms.[45] 'Condom negotiation skills' involve verbal skills that are least developed in the inexperienced and most difficult to apply to an unfamiliar partner. Furthermore, couples in which women had greater influence on sexual negotiation were more likely to practice contraception. Sexual social training skills must therefore empower young women to challenge and

dismantle powerful gender role constraints. The free availability of condoms will thus be enhanced through individual training in skills.[10, 12]

Influence from significant others: The post-intervention group was significantly more influenced than the pre-intervention group by their significant others.

The effectiveness of inter-personal communication has been highlighted as a dominant factor for promotion of activities in other studies.[46] It is therefore a strong encouragement for the sustaining of peer educators,[22, 30] especially since they have such a strong influence on other members in their sphere of influence.[30] They are also likely to spend more time and have an emotional bond with their client. This bond seems to aid rather than impede the whole process.[47] It has to be emphasised that health education should not be targeted at 'the masses'.[30]

Improvement in health in industrial society now depends more on appropriate life-styles than on curative care and to join the move away from curative care towards prevention.[29, 30] Part of this move has been the recognition that communities have indigenous, lay skills to help themselves. Families, traditional practitioners and other community members first deal with most health problems. Those are the people who should be helped and supported by re-building lost confidence in them.[10, 12, 29]

Strong evidence exists that improvement in health comes more through changes in life-styles than through spending additional money on traditional curative services, especially amongst the opinion leaders of our societies.[30] This is even more relevant

for HIV / AIDS, since no cure presently is available for this dreaded disease. There should thus be a greater focus on health promotion, rather than disease treatment.[30]

Information routes: In the pre-intervention group personal contact came out as the most preferred way of receiving information about HIV / AIDS. Although the post-intervention group voted it as the third most preferred route, the percentages of the other two more preferred routes (printed materials and TV) were only slightly higher.

Since the post-intervention group cited information from TV as the most preferred information route, this will need to be addressed locally in companies but also on a wider scale. Around the world, large and powerful groups either directly control the media or strongly influence them. Unfortunately, those groups are often not interested in the media as means of improving health through health education. Their own vested interests may lead to wide spread dissemination, and acceptance of ideas and attitudes inimical to health,[30] often portraying certain life-styles as a manly or the charismatic thing to do.[29] Targets in the social action model are the policymakers, decision makers, pressure groups, consumer groups, or consumer associations, and volunteer organisations.[29]

It is important to involve peer educators in the planning and implementation of educational programmes.[46] Health educators should be involved in activities that steer away from the top-down, medical approach, looking at diseases; towards a

much broader way of helping people to change their environment.[29] Health education is something in which everyone can be involved.[29]

Successes with diseases (smallpox, yaws, malaria outside Africa) in the past have one thing in common: each depends on technology in which people themselves are hardly involved.[30] However, our successes to improve nutrition, eliminate smoking and now with HIV / AIDS, have been limited. To achieve success in these we depend on changes of habit and behaviour amongst those involved. Historically, we have relied on much communication coming from the doctor. For many reasons the doctor is a poor communicator to most patients.[30] Fortunately there are peer educators (or part-time health workers) who can communicate better, but they are still part of the health professionals.[30] As pointed out earlier, they should be chosen by their 'community' (fellow employees), usually more for their attitudes than their literacy or level of education.[10, 11, 27, 30] They remain responsible to their fellow employees.

One story related by a health educator in many ways encapsulates some of the ideas presented above. The health educator is standing on a riverbank when he hears a cry from the river. He rushes down to the waters' edge, pulls out a drowning person and gives him artificial respiration. He is delighted to see the person start to breathe again, when he hears another cry from the river. He hurries down to the water and once again rescues someone else from drowning, whom he then resuscitates. This goes on the whole day. He never has a chance to do anything else because he is continually rushing down to the river to rescue these poor people from drowning.

He never had the time to go around the bend in the river to see who was pushing all these people in. What the story is trying to say is that we must determine not only who is pushing the people into the river, but also how and why they are being pushed, and what can be done to stop the problem. We must also assure that, if people are pushed in, they can swim.[29] Practitioners are busy people. They rarely have the luxury of sitting back and reflecting on their work, there is always something that must be done.[48]

Reliability: According to Nunnally internal consistency (coefficient alpha) is regarded as the better estimate of reliability.[35] For hypothesized constructs reliabilities of 0.70 and higher will suffice.[35] As Nunnally notes,[35] the test-retest method is not recommended in the main for estimating reliability of the measures (p. 234); internal consistency (coefficient alpha) is regarded as a better estimate of reliability.

Amongst the pre-intervention group knowledge about transmission; perception of attitude towards a person with HIV / AIDS; risk of contracting HIV / AIDS; usage and beliefs about condoms; and influence from significant others were all found to be reliable scales (> 0.70).

With the post-intervention group the same elements (transmission, perception of attitudes, risk, condom beliefs and influence from significant others) as well as beliefs around HIV / AIDS were found to be reliable scales (> 0.70).

Hypotheses: The following hypotheses were tested: (1) Knowledge, attitudes and practices are positively related; (2) Women have more knowledge about HIV / AIDS than men; (3) Language affects knowledge, attitudes and practices; (4) Race affects knowledge, attitudes and practices; and (5) Age is related to knowledge, attitudes and practices. All the hypotheses received partial support in either or both the pre and post-intervention groups.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

7.1.1 The intervention programme, as demonstrated by the KAP questionnaires, significantly improved the knowledge levels of transmission; perception of attitudes towards a person with HIV / AIDS; knowledge about high-risk practices; and openness to be influenced by significant others.

7.1.2 The captive audience of employees grouped together as peers seemed to be an ideal platform to launch intervention programmes.

7.1.3 Hypotheses 1, 3 and 4 received partial support in both intervention groups, but hypothesis 2 and 5 only in the pre-intervention group.

7.2 Recommendations

7.2.1 Every responsible employer should get involved in preventing the spread of HIV / AIDS.

7.2.2 Peer educators should form part of every intervention programme in the fight against HIV / AIDS.

7.2.3 The peer educator system should be utilised to establish ownership by the employees to the point where they eventually remark: "We have done it ourselves".[30]

7.2.4 Regular contact between the professional nurse and the peer educators should be maintained throughout; this is necessary to ensure: trust of fellow employees in the knowledge of their peer educators; the ultimate success of the peer educator system; and a 'bottom-up' approach.[16, 30]

7.2.5 In order to evaluate intervention effects, it is recommended that pre and post-intervention testing with KAP questionnaires be conducted.

7.2.6 Intervention programmes should not only focus on increasing knowledge levels, but also on skills training, particularly communication in relationships.

7.2.7 It is very important that condoms should be freely available to limit unprotected sexual encounters.

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RESPONDENT INFORMATION LEAFLET AND INFORMED CONSENT

STUDY TITLE **Efficacy of a HIV intervention in the workplace, as measured by KAP (knowledge, attitudes and practices) questionnaires: a before and after study**

Study trial number: 172/2002 a study concerning employees of Vesuvius SA to investigate the efficacy of the intervention.

INTRODUCTION

You are invited to volunteer for a research study. This information leaflet is to help you to decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the investigator. You should not agree to take part unless you are completely happy about all the procedures involved.

WHAT IS THE PURPOSE OF THIS STUDY?

All employees of the company will have the opportunity to complete the questionnaire and will be exposed to the full intervention.

With this study we would like to assess whether the programme of intervention is effective. The overall aim of the study is to evaluate the efficacy of the intervention programme in combating HIV / AIDS in the workplace using this KAP (knowledge, attitudes and practices) questionnaires to evaluate changes before and after the intervention.

Some of the questions are of a personal nature, but it will be impossible to link your response to you as an individual.

WHAT IS THE DURATION OF THIS STUDY?

If you decide to take part you will be one of approximately 150 employees. The study will last for 6 months. You will be asked to avail yourself for sessions where health talks and other information will be given out by the investigator Dr. W Rossouw, and Sr. M Sampson and Mr. R Mofokeng.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This study Protocol was submitted to the Research Ethics Committee and this committee has granted written approval. The study has been structured in accordance with the Declaration of Helsinki (last update: October 2000), which deals with the recommendations guiding doctors in biomedical research involving human subjects. A copy of which may be obtained from the investigator should you wish to review it.

WHAT ARE MY RIGHTS AS A PARTICIPANT IN THIS STUDY?

Your participation in this study is entirely voluntary and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will not affect your access to other medical care.

CONFIDENTIALITY

All information obtained during the course of this study is strictly confidential. Data that may be reported in scientific journals will not include any information that identifies you as a respondent in this study.

Any information uncovered regarding your response results or state of health as a result of your participation in this study will be held in strict confidence. You will be informed of any finding of importance to your health or continued participation in this study but this information will not be disclosed to any third party in addition to the ones mentioned above without your written permission.

INFORMED CONSENT

I hereby confirm that the investigator, Dr. W Rossouw, has informed me about the nature, conduct, benefits and risks of this study. I have also received, read and understood the above written information (RESPONDENT INFORMATION LEAFLET AND INFORMED CONSENT) regarding this study.

I am aware that the results of the study, including personal details regarding my sex, age and responses will be anonymously processed into a study report.

I may, at any stage, without prejudice, withdraw my consent and participation in the study. I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

Respondent's name _____ (Please print)

Respondent's signature _____ Date _____

Investigator's name Dr. W Rossouw

Investigator's signature _____ Date _____

I, Dr. W Rossouw herewith confirm that the above respondent has been informed fully about the nature, conduct and risks of the above trial.

Witness's name* _____ (Please print)

*Consent procedure should be witnessed whenever possible.

Witness's signature _____ Date _____

VERBAL RESPONDENT INFORMED CONSENT

(applicable when respondents cannot read or write)

I, the undersigned, Dr. W Rossouw have read and have explained fully to the respondent, named ..... and/or his/her relative, the respondent information leaflet, which has indicated the nature and purpose of the study in which I have asked the respondent to participate. The respondent indicated that he/she understands that he/she will be free to withdraw from the trial at any time for any reason.

I hereby certify that the respondent has agreed to participate in this study.

Respondent's name _____ (Please print)

Investigator's name Dr. W Rossouw

Investigator's signature _____ Date _____

Witness's name _____ (Please print)

Witness's signature _____ Date _____

POLICY LETTER - HIV/AIDS

1. PURPOSE

To define Company policy in respect of HIV (Human Immuno Deficiency Virus) and AIDS (Acquired Immunity Deficiency Syndrome).

2. BACKGROUND INFORMATION

* HIV/AIDS is not transmitted in the workplace by usual or casual contact between employees.
* There is no reason to consider HIV/AIDS as different from other serious diseases with regard to employment.

3. POLICY

3.1 Employees who may become infected with HIV or who may suffer from AIDS will be permitted to continue in their usual duties to the extent practicable. When an employee can no longer fulfil the inherent job requirements, the individual will be declared medically unfit or incapacitated and dealt with in accordance with fair labour practices as per Labour Relations Act (LRA).

3.2 Prospective and current employees will not be required to undergo testing for HIV/AIDS.

3.3 Particulars of employees suspected or confirmed to be infected with the subject disease will be dealt with in strict confidentiality - by management and on-site healthcare service provider personnel. All healthcare service providers are expected to take appropriate precautions when coming into physical contact with employees.

3.4 An employee with AIDS or HIV infection is under no obligation to disclose his/her condition to a supervisor, manager or any other employee, unless required to do so by future law.

3.5 Employees suspected or confirmed to be suffering from AIDS will not be unfairly discriminated against by management. The Company will attempt as far as reasonably possible, to prevent any group such as fellow employees, supervision and clients, from discriminating against an employee with AIDS.

3.6 Employees suffering from AIDS will be entitled to all normal employee benefits which are in effect at any given point in time and which are applicable to employees in the same job classification.

3.7 The Company will conduct HIV/AIDS awareness programmes and will assist in preventing HIV infection by making condoms readily available and accessible on Company premises.

3.8 The Company will, through the on-site healthcare service provider activity, provide a counselling service regarding HIV/AIDS for anyone requesting it (this includes family members of employees).

3.9 The Company will provide the means for employees to have themselves tested for HIV/AIDS if they so desire, on a confidential basis. The expense for these tests will be borne by the employees who participate.

4. POLICY REVIEW

This policy will be reviewed on a regular basis to take account of the progression of the epidemic, development in medical care, experience in managing it in the workplace and its impact on employee benefit schemes.

Chief Executive Officer