

# Knowledge, attitudes & practices towards HIV/AIDS among former mineworkers of Transkei.

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***Declaration***

I, the undersigned, hereby declare that the work contained in this assignment is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

Signature:

Date:

## **Abstract**

Mineworkers in South Africa are in abundance as mining is the main occupation especially in the former black homeland. These mineworkers retrenched or retire, and returned to their homeland. Transkei is a former black homeland where abundant retired mineworkers reside to their destiny. Migrancy, which for century has been such a conspicuous feature of the South African labour system, and thought to be a significant contributor to the spread of HIV/AIDS (Lurie M, 2000). The migrant labour system in Transkei region was attributed very extensively to contagious disease especially related with sexually transmitted diseases (STI) like HIV/AIDS.

It is estimated that 2 million of the 5 million black mineworkers in South Africa at the time were migrant labourers. Majority of them are from the Transkei region. The ex-mineworkers in this study group are between 41 and 78 years of age (mean 55 years). They have serviced in the mines from 5 to 48 years (mean 20 years). All are married, and having children between 1 and 10 ((mean 6). Fifty seven percent ex-mineworkers did not answer about their number of sex-partners. Only 43% mentioned that they have one partner. Only 31% mineworkers were consuming alcohol. Of them 9% were consuming everyday, and 18% twice in a week.

In this study, HIV/AIDS related knowledge, attitudes and behaviour of ex-mineworkers, living in the remote rural areas of Transkei region of Eastern Cape, were elicited by sending questionnaires to them. Only 19.9% have replied back. There is absolute lack of knowledge in 13.6%, and negative attitude in 27% of the ex-mineworkers. Risks of unsafe sex have been observed among 69%. Of them, 48% have mentioned that they have trust in their wives. Urinary tract symptoms were indicated by 18%, and HIV positivity was reported by 4.5% of mineworkers. There is suicidal tendency (life is not worth living) was found in 22.7% of ex-mineworkers, and a majority (16%) mentioned that it is related with their sickness.

Majority of ex-mineworkers have good knowledge about HIV/AIDS, and positive attitude for the survivals. They have also been practicing sex without condoms, but they have provided reasoning to be a faithful to their partners. There is a high level of awareness and a positive attitude towards HIV/AIDS individuals. It was observed that there is less risk taking sexual behaviour among ex-mineworkers.

## **Opsomming**

'n Groot gedeelte van Suid-Afrikaanse mynwerkers is uit die Transkei gebied afkomstig. Daar word konserwatief beraam dat tussen twee en vyf miljoen mynwerkers jaarliks tussen hulle werkplek en die myne migreer en dat hierdie migrasie ingrypende implikasies vir die verspreiding van die MI-virus het.

Die doel van hierdie studie is om die kennis, houding en gedrag van mynwerkers ten opsigte van MIV/Vigs by 'n steekproef van 198 voormalige mynwerkers in die Transkei te toets.

Die inligting is deur middel van 'n vraelys en onderhoude gedoen en daar word tot die gevolgtrekking gekom dat die kennis van Vigs en die voorkoming daarvan besonder goed is by hierdie steekproef. Die implikasies van die bevindinge van die studie word uitgespel en voorstelle vir verdere studies word aan die hand gedoen.

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## 1. Introduction

In 2003, almost five million people became newly infected with HIV, the greatest number in any one year since the beginning of the epidemic. At the global level, the number of people living with HIV continues to grow-from 35 million in 2001 to 38 million in 2003. In the same year, almost three million people were killed by AIDS; over 20 million have died since the first cases of AIDS were identified in 1981 (UNAIDS, 2004). An estimated 25 million people are living with HIV in Sub-Saharan Africa. There appears to be stabilization in HIV prevalence rates, but this is mainly due to a rise in AIDS deaths and a continued increase in new infections. Prevalence is still rising in some countries such as Madagascar and Swaziland, and is declining nationwide in Uganda (UNAIDS, 2004). Sub-Saharan Africa is home to just over 10% of the world's population-and almost two-thirds of all people living with HIV. In 2003, an estimated three million people became newly infected and 2.2 million died (75% of the three million AIDS deaths globally that year) (UNAIDS, 2004).

HIV/AIDS threatens the economy and social fabrics of the entire region of sub-Saharan Africa. Statistics show that four million of South Africa's citizens are living with the virus, with an estimated 1800 being infected daily.(Ngubane BS. Message from the minister, 2000). There is no such thing as the "African" epidemic; there is tremendous diversity across the continent in the levels and trends of HIV infection. In six countries, adult HIV prevalence is below 2% while in six other countries it is over 20%. In Southern Africa all seven countries have prevalence rates above 17% with Botswana and Swaziland having prevalence rates above 35%. In West Africa, HIV prevalence is much lower with no country having prevalence above 10% and most having prevalence between 1% and 5%. Adult prevalence in countries in Central and East Africa falls somewhere between these two groups, ranging from 4% to 13% (UNAIDS 2004).

Models drawn up in the early 1990s have underestimated the severity of the HIV epidemic. Current models predict approximately 500 000 AIDS related deaths in the year 2010, up from 100 000 this year (Editorial, 2001). According to the 2001

annual national survey South Africa appears to have an HIV prevalence rate of approximately 24%, but 8 years ago recorded rate of less than 10% (DOH, 2001).

The consequences of apartheid, such as widespread inadequate wages, the migrant labour system and massive population removals ultimately are responsible for much of the disease and illness in this society (Savage M, 1979). In sub-Saharan Africa, where 'circular' migration is fundamental to the way in which society is ordered, migration has been an important determinant of the spread of infectious diseases, and has contributed to the extraordinarily rapid spread of HIV. It is generally assumed that when young men leave their rural homes in search of work to urban areas, they may engage in sex with women at high risk, and are themselves at high risk of infection. When they return to their rural homes, they may carry an acquired virus with them and infect their rural partners. This circular migration typifies the pattern of movement of many young men throughout southern Africa (Lurie, 2000). Much of the published research on migrant labour in South Africa has focussed on the gold mines, which have drawn large numbers of workers from all over the subcontinent; by end of 1980s, for example, more than 800 000 men were employed on these mines, majority of them from Transkei, a labour sending area. (Ijsselmuiden et al, 1990). Because these men live almost exclusively in single-sex hostels, without their wives or families, they are inevitably placed at high risk of contracting STD's and now HIV. There was a large-scale retrenchment in 1992; the gold mines employed 32% fewer workers, than they did in 1986, as a result of falling levels of production, a dramatic drop in the international gold price. (Lurie, 2000). It means more mineworkers returned to their homes infecting their sexual partners. In several parts of the world, geographic mobility, migration and widespread population displacement have been identified as significant risk factors in the transmission of HIV, so that migration becomes the central theme in the discussion of AIDS (Decosas et al, 1995). Transkei is one of two regions from which a majority of South African mineworkers used to be recruited, and the destination to which many return (Meel, 2003). The migrant labour system in the Transkei region was



attributed very extensively to socio-economic effects. It was estimated that 2 million of the 5 million black workers in South Africa at the time were migrant labourers (Wilson et al, 1989).

South African mining industry has been hard hit by the HIV epidemic. The mining companies are developing a program that seeks to offer an integrated service encompassing all aspects of HIV prevention and care, not only to its employees, but also their families and others at risk in the local community. This venture is grounded in the firm belief that a profitable business can be sustained, despite a quarter (25%) of the workforce being HIV infected, if strategic and timely investment is made in measures to promote and protect the health of its workforce (Day JH et al, 2000). A follow up survey of gold miners from 1995 to 1997 showed that there is substantial evidence of an increased awareness of the personal risk of acquiring HIV/AIDS, with less risky sexual behaviour and increased condom use. These changes are most likely due to the AIDS awareness programs implemented by the mining industry and the behaviour changes resulting from condom marketing campaigns specifically targeted at miners and commercial sex workers in the mining community (Meekers, 2000). Migrant labour is believed to play an important role in the dynamics of HIV-transmission in many countries of Southern Africa, little has been written about the way in which HIV/AIDS has been dealt within industrial settings in which many migrant workers are employed (Campbell et al, 1999). The connection between labour migration and the risk of contracting and spreading the HIV/AIDS virus in both Malawi and South Africa has demonstrated that migrant labour practice is an important way in which disease is spread (Chirwa, 1995).

The discovery of gold provided a base from which South Africa was able to develop a substantial industrial capacity. The mines demanded a reliable supply of labour, which could only be met by drawing in migrant workers from distant rural areas both within and without South Africa. The migrant labour system not only creates situations in which diseases such as tuberculosis and Sexual Transmitted Infections (STIs) flourish but also serves to disseminate these

diseases widely throughout the region (Jochelson et al, 1991). The world AIDS statistics reported in 2000, that the prevalence of HIV/AIDS is between 28% and 45% among mineworkers in South Africa (AIDS Statistics, 2000). The miners at mines have close relationship with sex workers. Here is a case (Campbell et al, 2001).

In 1991, the World Health Organization (WHO) asserted that people with enough knowledge on HIV/AIDS stood a better chance of preventing themselves against the same than those without knowledge. This was supported by a Glasgow study that vulnerability to HIV/AIDS was associated with the individual's knowledge of disease (Ndegwa et al, 2002). Several recent studies have examined the AIDS knowledge level of adolescents and adults. Many researchers have found moderate to high levels of knowledge about AIDS across cultures (Al-Owaish et al, 1999; Asuzu, 1994; Buysse, 1996). Knowledge about AIDS has positive correlations with confidence in sexual practice ( $p < 0.001$ ), and sexual behavior change ( $p < 0.001$ ), suggesting that those who have more knowledge have more confidence in sexual practice, and have also changed sexual behavior (Uwalaka & Matsuo, 2002). Knowledge level is another possible predictor of attitude, indicating that increasing knowledge levels of AIDS may produce more positive attitudes towards individuals with AIDS (Carducci et al, 1995).

HIV/AIDS infection rate is also accelerated by people's attitudes as reported by the World Council of Churches through a study carried out in India. The study revealed that 80% of the people had elementary knowledge about HIV/AIDS but had wrong attitudes towards it. Attitudes towards AIDS and/or those persons with AIDS may also help predict behavior change. Attitude has a positive correlation with beliefs of susceptibility to AIDS ( $p < 0.05$ ), but negative correlations with confidence in sexual practice ( $p < 0.05$ ) and sexual behavioural change ( $p < 0.05$ ), suggesting that those who have liberal attitudes toward AIDS patients have higher beliefs that they will not contact AIDS (Uwalaka & Matsuo, 2002). Several studies find high levels of empathy, tolerance, and positive attitudes towards AIDS or persons with AIDS (Serovich & Greene, 1997; Villarruel et al, 1998).

However, other findings show neutral, unfavourable, or unsympathetic attitudes towards AIDS or those persons with AIDS (Carducci et al, 1995; Katz et al, 1995; Konde-Lule et al, 1989). In a study carried out by Al-Owaish et al (1999) showed that 80% of Kuwaiti participants felt that persons with HIV/AIDS should not be left to live freely in the community.

In order to reduce the spread of HIV in the population, enhancing knowledge and positive beliefs about preventing the spread of HIV/AIDS have been the primary goals of most intervention programs (DiClemente et al, 1987). Although attitudes towards risk behavior are important components of the theory of reasoned action; knowledge is considered an important prerequisite for behavior change (DiClemente, 1989). Several studies have reported wide spread misconceptions in the population knowledge of HIV/AIDS (Malavaud et al, 1990). Shayne and Kaplan (1988) reported general high knowledge about HIV transmission among American public but low knowledge about general aspects of disease prevention. Several researchers have reported that people lack factual knowledge about HIV/AIDS with some misunderstandings (Wilson et al, 1989). Researchers attempting to link knowledge of HIV/AIDS and behavioural change have found contradictory results. Several researchers have reported no relation between knowledge and practice of risk-reduction behavior (Skurnich et al 1991). Only one study (Carrol, 1988) reported that a sample of college students indicated concern about HIV/AIDS, and this had affected their selectivity of sexual partners.

In addition to knowledge and attitudes about AIDS, previous literature on health behaviours has focused on the role of individuals' perceived susceptibility to AIDS as a motivator of behavioural change. The individuals must perceive themselves to be at risk of the health threat before they take actions to reduce risky behaviours or to engage in healthy alternative behaviours (Aiken et al, 2001; Fishbein et al, 2001). Research focusing on the effects of beliefs of susceptibility to AIDS indicates that adolescents and adults who report high perceived risk for AIDS, practice safer sexual behaviours, whereas those who

perceive low risk for contracting AIDS, report practicing unsafe sexual behaviours (Gray & Saracino, 1989; Villaruel et al, 1998). However, in a study of health behavior in Kenya, perceived susceptibility to AIDS was not a significant predictor of condom use. To further understand risk behavior, it is important to understand how an adult interpret his/her risk of contracting HIV. Most adults are not personally concerned about contracting HIV. For the people to change their high risk behaviours, they must perceive HIV/AIDS to be a personal threat, understand the reasons for preventive measures, and have a sense of personal efficacy (Witte, 1992). Some adults understand their risk but are not motivated to change their behavior risky behavior (Boyer and Hein, 1991).

There is still no cure for AIDS. Once an individual becomes infected, he/she is infected for life. Researchers have estimated that 99% of the people infected with the causative agent, HIV, develop AIDS and die from AIDS-related illnesses within 5 to 10 years (CDC, 1989). In the absence of a cure, the major strategy for preventing the spread of the disease has been public health education. Educational efforts have focused on the dissemination of information about the cause of AIDS, routes of transmission, and precautionary measures against the spread of disease. There is limited research that links knowledge of AIDS and subsequent behavioural change among heterosexuals. Carroll (1988) found that the most common change reported by sexually active students was greater selectivity in choice of partners but little or no decrease in coital frequency (Carroll 1988).

Participants' misconception about the origins and transmission of AIDS e.g. some participants reported the belief that anal sex was safe alternative to vaginal sex. For these individuals, misconceptions, or lack of accurate knowledge about AIDS, resulted in inaccurate assessments of susceptibility (Volk & Koopman, 2001). The failure of perceived susceptibility to predict behavior most likely resulted from participants' misconception about the origins and transmission of AIDS (Uwalaka & Matsuo, 2002). In this way, it seems that perceived

susceptibility must be coupled with accurate knowledge in order to bring about behavioural change.

The level of STDs as reported in the KAP study appears to be below what would be expected. One reason for this could be embarrassment and a consequent reluctance to reveal the fact that one has had an infection. Another reason could be misdiagnosis on the part of the participants, in that they are not correctly identifying the fact that they have had an infection. It is important therefore to ensure that employees are clear on all the signs and symptoms of STDs and the need to obtain treatment for these (South Deep Mine Report, 2002). The majority of infections are transmitted through heterosexual contact. Although the probability of transmitting HIV in a single act of intercourse can be quite low, a number of factors increase the risk of infection dramatically. The two most important are the presence in either partner of a sexually transmitted disease (STD), like syphilis or gonorrhoea, and having a large number of sexual partners. A significant number of Southern African adults suffer from STDs and many have a number of partners. As a result, about 88% of new HIV infections are due to heterosexual contact (US agency for International Development, 2001).

Confidence in sexual practice has a positive correlation with sexual behavioural change ( $p < 0.001$ ), suggesting that those who have confidence in sexual practice are more likely to have changed their sexual behaviours to safer practices (Uwalaka & Matsuo, 2002). Individuals susceptible for health threat, such as AIDS, will not change their behavior unless they feel confident in their ability to change their risky behaviours (Rosenstock et al, 1994). In this way, an assessment of individuals' confidence in performing safe sexual practices is a critical element in determining whether or not individuals will actually change their behavior (Uwalaka & Matsuo, 2002).

In order to identify the target groups who would benefit most from prevention activities, knowledge of HIV prevalence is useful (Brink and Clausen, 1987). Very early in the epidemic the mines made efforts to establish HIV prevention

programs, several years before any government prevention programs, including large-scale educational campaigns, which all mineworkers had to attend, and widespread condom distribution (Stein and Seinberg, 1995; Decosas, 1994). Nevertheless, the results have been disappointing (Crisp, 1996) and while factual awareness regarding HIV/AIDS has increased, they have not shown demonstrable behavior change or any impact on the epidemic. There is a heavy drift between management and union regarding ideological position recently expressed by South African Chamber of Mines' medical representative (Ref?). Unless the mining industry shifts their perspective to see HIV/AIDS as a public health issue, located within a complex range of social and developmental factors, the efforts and energies that they are putting into HIV prevention are unlikely to be effective (Williams et al, 1999).

There is a high risk of HIV infection among migrant workers of all ages (Williams et al, 2000). The migrant labour system in the mining sectors is fuelling the HIV/AIDS pandemic in South Africa. A survey in Cartonville, a gold mining area near Johannesburg, revealed that 60 percent of the 88,000 miners had come from other parts of South Africa like Transkei or from neighbouring countries of Lesotho, Malawi, and Mozambique. One-fifth of miners were HIV-positive, and 75 percent of the 400 to 500 sex workers who serviced the miners were HIV-positive. By 2010, life expectancy in South Africa is estimated to be about 45 years with AIDS, as compared to close to 70 years without AIDS, according to the United Nations Development Program (AEGIS, 2002).

The mining industry began to react to the epidemic of HIV in the late 1980s, long before there had been any response from the apartheid government (Campbell and Williams, 1999). The industry made substantial efforts to provide mineworkers with compulsory education on modes of transmission and prevention, and at the same time provided free condoms (Stein et al, 1995). In a study carried out on the knowledge and perceptions of HIV/AIDS among mineworkers showed that between 83% and 87% know the importance of faithfulness, and condom use in prevention of HIV transmission. Yet 53% of the

miners reported sexual intercourse with at least one casual partners during year prior to the survey. There were 28% mineworkers who were infected with HIV. There was no condom use in 85% of regular partners, 12% said that condom use sometimes and only 3.2% that they always use condom. Approximately half of these men reported a relationship with a casual partner (Williams et al, 2000).

There is little information on HIV/AIDS within the region regarding knowledge, attitude, and sexual practices among ex-mineworkers. Urban-solitary- life of former mineworkers has been identified as a risk for the spread of HIV in the rural area, on their joining their families. A high percentage of these mineworkers were treated for gonorrhoea, syphilis, herpes, and genital warts (Johnson et al, 1992). Many studies assessing the impact of national AIDS prevention programmes on knowledge, attitude and practices have been published worldwide. Most have found that, while general knowledge increased, there was little change in behaviour (Govender et al, 1992). The less intention of condom use, less condoms use knowledge and younger age of first vaginal intercourse were predictive for HIV/AIDS risk behaviour. HIV prevention intervention program should include the identified factors and cultural diversity (Peltzer, 2002). A simple model of HIV transmission on the mines is developed and uses to estimate the likely burden of disease and the effect that interventions might have in stemming the epidemic. The model shows that by the year 2010 the annual death rate from AIDS on the mines could exceed 40 000 men per year but that a hypothetical reduction of the force of infection by four times over next two years would limit the peak death rate to 12 000 men per year followed by the gradual elimination of the disease (Williams & Campbell, 1996).

A vast majority of HIV-positive individuals are unaware of their HIV status. As a result they may continue to transmit HIV infection to sexual partners and would lose the opportunity to receive preventive measures. HIV negative individuals who are unaware of their status may continue to be vulnerable to HIV infection through continued high-risk behaviour. In both these situation there are chances to reduce the spread of HIV infection. Ex-mineworkers are a high-risk group

population who could be counselled in order to promote safe sex and reduce HIV transmission to both the casual and stable partners. There is a need for promoting and sharing of information on understanding the relation between sexual transmitted and HIV infection. Greater emphasis must be on the use of condom to prevent transmission of disease and HIV (Desai et al, 2000).

The objectives of KAP survey are firstly, to assess vulnerability of an individual or a group such as the sexual practices poor lead to vulnerability. Secondly, Information gathered will guide to develop a program, customized strategies plus education and counselling messages among the community. The last and important to develop baseline information to measure progress in future.

The Transkei region is one of the labour sending areas for the South African mines. The rural women are at a high risk of acquiring HIV/AIDS from their husbands/boyfriends who periodically return from the mines and have unprotected sex with them. It remains unclear about knowledge, attitude and perception of ex-mineworkers who have retired from their jobs, and resettled in their homes. These factors and the possibility of a relationship among them are examined in this study.

## **2. Methods**

### **2.1 Definition of Variables**

2.1.1. Knowledge: People should know about the transmission and prevention of HIV in order to adopt appropriate behaviour. The route of transmission, preventative methods and the availability of drugs to cure the disease are expected to be known by the mineworkers. The knowledge will be assessed by the type of answer that the ex-miners would give.



2.1.2 Attitude: The attitude is the feeling that one has towards someone suffering from HIV/AIDS. Attitude is linked to knowledge and is how one is comfortable associating closely with such a person or the family.

2.1.3 Practices:

The practice of safe or unsafe sex in extra marital relationships, casual relationships & perverted sex are under scrutiny in this study.

2.2 Study Period: 1<sup>st</sup> September 2004 to 31<sup>st</sup> December 2004.

2.3 Sample size: 250. Calculated using Epi Info6.4 computer programme.

2.4 Data collection

Out of 2080 mine workers registered in the Occupational Health Unit, 250 were selected using random numbers. A 10 item self administered questionnaire (Annexure I) was posted to the selected ex-miners. A stamped, addressed envelope was enclosed for them to return by post after completion. In the questionnaire, 1-4 were on knowledge, 5 & 6 on attitude and 7 & 8 on practices. The questionnaires were both in English and Xhosa.

2.5 Ethical issues

Ethical approval was granted by the Centre for HIV/AIDS Management in the World of Work, Stellenbosch University, Cape Town. Confidentiality was maintained by asking not to write their names, identification numbers, and addresses. A covering letter explained that the information is only for a study.

### **3. Results**

During the 4 month study period 350 questionnaires were posted. Desired forms were returned after being completed by the ex-mineworkers. The personal information of ex-mineworkers is described (Table 1). The mean age was 55 years (range 41-78 years) and the mean of, years of service, was 20 years (range 5 to 48 years) as shown in Fig. 1. The number of children per household

ranged from 1 to 10 (mean 6) (Fig. 3). All the mineworkers had worked underground (Fig. 2). All but 1 was married. Fifty seven did not respond to the question of the number of partners. Forty three had only a single sex partner. Alcohol was consumed by 31% (9% consuming daily, and 18% twice in a week) as shown in Fig. 4.

**Table 1: Characteristics of ex-mineworkers**

Variable	Characteristics
A. Age	Mean 55 yrs, range 41-78 yrs.
B. Mining history	Mean 20 yrs, range 5-48 yrs.
C. Occupation	Underground workers
D. Married or single	Yes (except one).
E. Number of Children	Mean 6, range 1-10.
F. Number of Sex partners	57% not answered, 43% one partner.
G. Consumption of alcohol	31% drinks, 69% teetotallers.

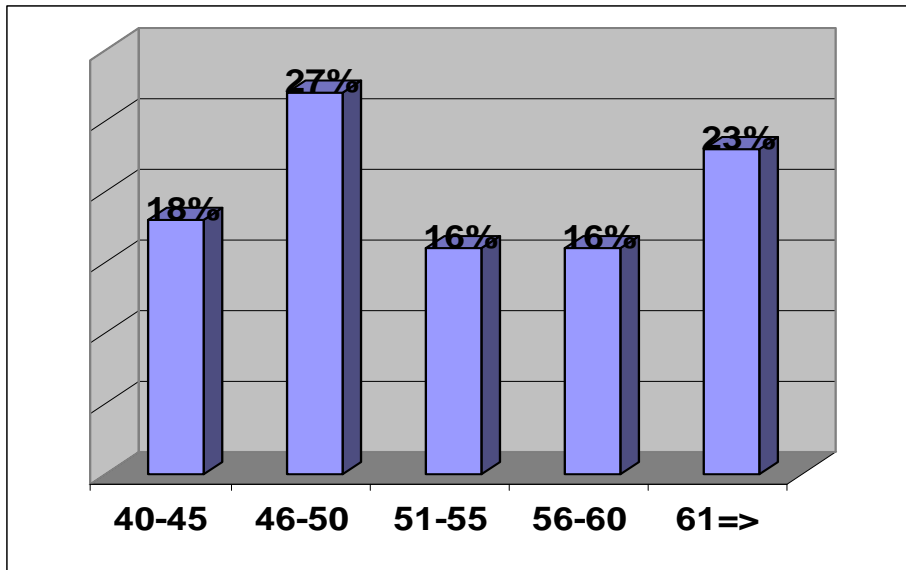


Fig. 1: The different age groups of study subjects

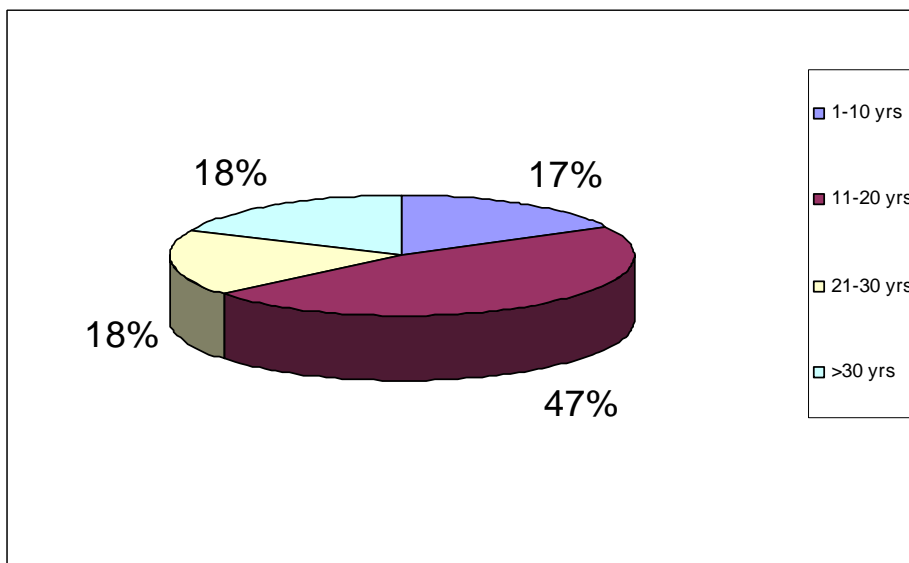


Fig. 2. Duration of service at mines.

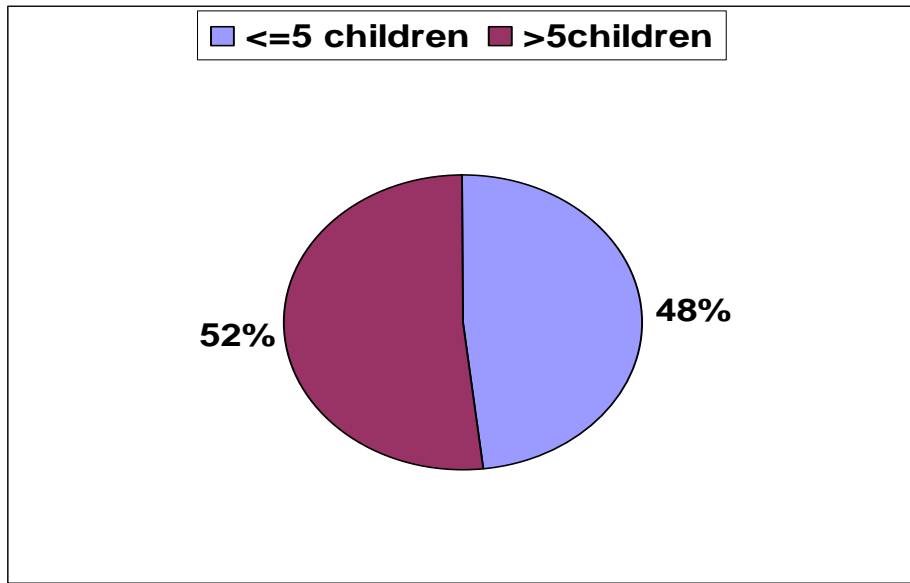


Fig.3 Number of children among ex-mineworkers.

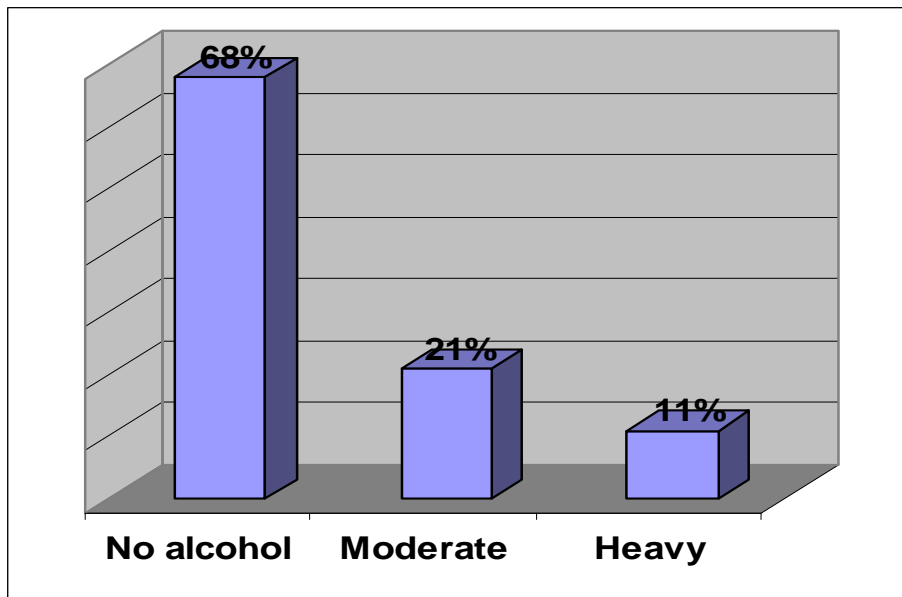
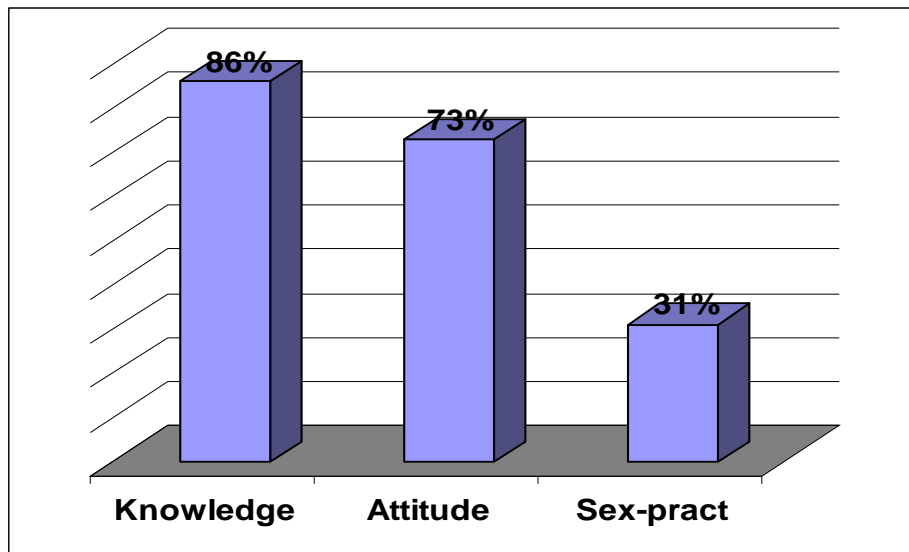


Fig. 4. Alcohol consumption among ex-mineworkers of the Transkei

The Knowledge Attitudes & Perceptions are tabulated in Table 2. There is an absolute lack of knowledge in 13.6%. A positive attitude was shown by 27%. Unsafe sexual practices were noted among 69% (Fig.5). Current symptoms of urethritis were present in 18%, and HIV positivity 4.5%. Suicidal tendency (life is not worth living) was reported by 22.7%, and (16%) mentioned that it is as a result of their sickness.

**Table 2. KAP about HIV/AIDS among ex-mineworkers.**

Indicator	Facts Known (%)	Comments
Sufficient Knowledge of HIV/AIDS (1-4)	86.4%	Majority know the facts, 4.5% mentioned that condom is the cause of HIV.
Positive attitude to HIV/AIDS sufferers (5 & 6)	73%	Majority had a positive attitude
Safe-sexual-Practices and behavior	31%	All except 1, married, and trust their wives, so there is no need to use condoms.
Urinary tract infection	18% (infected)	4.5% mentioned that the colour of urine is changed because they are taking anti TB drugs.
HIV status confirmed	4.5% (confirmed)	Majority not tested for HIV
Suicidal tendencies	22.7% (suicidal)	Majority feel life is worth living.



**Fig.5. Relationship between Knowledge, attitude, and safe-sexual practices among ex-mineworkers of the Transkei region.**

#### 4. Discussion

This questionnaire based survey, is one of the few inquiries into the health of ex-mineworkers of former Transkei. It provides important information that justifies expanded efforts to initiate and develop a program for the screening for HIV of former mineworkers in this part of the country, and for the provision of urgently needed prevention of HIV/AIDS. This survey measures the Knowledge, Attitude and Practices (KAP) regarding HIV. Surveys on KAP can be done in various ways and depends on the financial status. It is symbolic that knowledge comes from the brain, attitudes, beliefs & perceptions from the heart, and practices/behaviour from the reproductive system.

HIV/AIDS is a disease which is prevalent in sexually active individuals between 15 and 49 years of age (Whiteside et al, 2000). Majority of mineworkers in this study are above the age of 50 years as mean age is 55 years (Table 1 & Fig.1). They are not necessarily sexually active at present. It has been reported that 45% of South African current mineworkers are HIV positive (AIDS statistics, 2000). Many ex-miners die soon after returning home after leaving the mines

because of HIV. Therefore they may not get the opportunity to register in the compensation claim clinic. The mortality of young adults has increased rapidly in the last few years with the rate in the 19-25 year range in 1999/2000 being some 3.5 times higher than in 1985 (Dorrington et al, 2001).

A growing body of evidence points to the complexity of sexual behaviour. The risk behaviour is influenced by a factor which lies within a person. The sexual behaviour of South African youth between the ages 14 and 35 years (before they were recruitable for mining job) showed that at least 50% are sexually active by the age of 16 years. About 25% have more than 4 partners per year, and between 50% and 60% of sexually active youth report never using condoms (Eaton, 2005). In this study 57% mineworkers did not respond to the question of the number of sexual partners (Table 1). This is probably because that they are not sexually active. Only 43% had 1 partner. The normal life span after contracting HIV is between 5 and 10 years. However, there are some exceptions.

All ex-mineworkers except one were married. Thus they have stable relationships, and live in the original place after their retirement. Only 4.5% confirmed HIV positivity, but majority had not tested for HIV. There is a low prevalence of HIV, and low sexual promiscuity among ex-mineworkers in the Transkei region. People who had moved within the last five years were three times more likely to be infected with HIV than those whose residence had been stable for more than 10-years. The lowest infection rates were among those who had been living for the longest time in the same place. Also individuals who migrated reported more sexual partners than non-migrant counterparts (Nunn et al, 1995).

These findings among ex-mineworkers are sharply in contrast to the current mineworkers. The prevalence of HIV in current mineworkers is as high as 45%. It has been reported in several studies that in the mines, sex is a fact of life and so, HIV/AIDS (NUM, 2001). Therefore, the code of good practice on key aspects of HIV/AIDS and employment is critical. It recognises that this epidemic may

affect every workplace, with prolonged workers illnesses, absenteeism (NUM News, 2001).

Xhosa culture is rich with a hierarchal system in the family and community. There is respect of the elderly. Young do not sit among elderly. They follow instructions from elderly. Women also have a place in the family and community and often the division of labour is between the sexes. Housework is almost entirely done by women and girls. Men herd cattle, hunt, and earn money. No Bantu marriage is considered complete until the woman has borne her husband at least one child. One standard of behaviour, enforced among adults but broken regularly by herd-boys, is respect for the property of others. The instruction regarding sexual behaviour is given during the seclusion period (Circumcision ceremony) to the males, and to girls on her first menstruation. While sex education is an important aspect of teaching, particularly those for girls, they never promote a sexual licence. The males were not allowed to have any extramarital sex in the Xhosa culture (Hammond-Tooke, 1934).

Fifty seven (57%) ex-mineworkers did not answer about their number of sex-partners, although they have answered all other questions including habit of drinking. It seems to be that they have stigma in disclosing their sex-partners. It is well known that mineworkers often live apart from their families and most have multiple sex partners, as well as engaging in unprotected sex, are quite susceptible to HIV/AIDS (Meel, 2002). Miners in South Africa are now more at risk of contracting human immunodeficiency virus (HIV) than of being in a mining accident. Some epidemiologists predict that the mines could be experiencing 12,000-40,000 deaths related to acquire immunodeficiency syndrome (AIDS) by 2010. A decade of education has not changed risk behaviours, so more emphasis will be placed on outreach program to the communities (Heywood, 1996). This is more difficult in case of ex-mineworkers who are scattered in the rural community, and difficult to reach them.



Alcohol misuse is one of the most significant public health problems in South Africa today. The prevalence of alcohol misuse among workforces such as the mining industry has been estimated at 25 % or more. Alcohol is the main drug of abuse especially in stressful conditions such as found underground in mines, which may serve as a coping mechanism (SIMRAC, 2003). In this study, it was not a problem as only 31% indicated that they consume alcohol. Of this only 11% were drinking regularly (heavy) and 20% were moderate drinkers. Majority (69%) of the ex-mineworkers were teetotallers (Fig. 4). This is surprisingly in contrast to the active mineworkers. It has been reported that alcohol consumption is associated with risky sexual behavior, and therefore to HIV/AIDS as it is difficult to negotiate a drunken man to use a condom (Maisto et al, 2004). Thirty one percent (31%) ex-mineworkers were consuming alcohol. Of them 9% were consuming everyday and 18% twice in a week. Alcohol in South Africa is available cheaply, and it need to taxed high. In a study carried out by Cohen et al (2004) showed that communities need to identify cost-effective interventions for HIV prevention to optimize limited resources. Among the most cost-effective interventions overall were raising alcohol taxes (Cohen et al, 2004).

The expenditure of ex-miners is at its highest when they return, as the children are grown and are in secondary or senior secondary school. Many are not re-employable because of their poor health and some are disabled (Meel, 2004). In this study on an average ex-mineworker had 6 children (range is from 1 to 10). This is a heavy liability that rests on the ex-mineworkers. It is not only the ex-mineworker who is usually under psychosocial pressure, but the families and the communities as a whole. Extreme poverty is clearly evident in many families of ex-mineworkers and these needs to be addressed by the government as a priority (Meel, 2004).

The question of sex partner was ignored by 57% of ex-mineworkers, and only 31% had mentioned that they are living with a single faithful partner (wife). This is in contrast to current miners, more than half (53%) of whom had at least one casual partner in the previous year (Gilgen et al, 2001). This change of

behaviour of miners at mines and at home is unique. The test of knowledge was assessed by analyzing replies to first four questions (1-4).

**Question 1. What do you know about HIV/AIDS?**

<b>It kills</b>	<b>No knowledge at all</b>
<b>77%</b>	<b>23%</b>

The response to this question was indicative of the mindset of the people as 77% said that HIV/AIDS kills. The media is responsible for this. This message has also been given by the national union of mineworkers “Condomise or face death: AIDS KILLS” (NUM, Jan 2001). The message should be one of hope to those who are already suffering from this disease. Otherwise the afflicted will feel depressed, and could contemplate suicide. Only 23% have mentioned that they do not know anything about the disease, and most were between 50 and 67 years of age. They are probably illiterate and living in rural areas without a TV or radio. The media propagation of HIV/AIDS kills is prevalent among them (86.4%) This is negative information acquired by the mineworkers, and it propagates a distorted view of HIV/AIDS. Many mineworkers (72.2%) indicated that there is no treatment for HIV/AIDS. One mentioned the drug Nivarapine. AZT was mentioned by another as prophylaxis. These are those who are HIV positive, and have greater knowledge than the others. Only 18.1% mentioned that they have no idea whether HIV/AIDS curable or not. The use of condom as a measure of prevention was reported by 27.7% of the respondents. A healthy vegetable diet and praying to God was advocated by 4.5% who were HIV positive. Only 22.7% had no knowledge whatsoever about prevention of HIV/AIDS. An old man of 72 years had stated that abstinence is the only way to prevent HIV/AIDS.

**Question 2. Do you know how it is transmitted?**

<b>Sexually</b>	<b>Do not know</b>
<b>81%</b>	<b>19%</b>

That the common route of transmission is sexual was known by 81%. Nineteen percent expressed that they do not know the answer. A small percentage (9%) also mentioned other routes of transmission as well.

**Question 3. Is there any treatment available for HIV/AIDS?**

<b>No treatment</b>	<b>Do not know</b>
<b>81%</b>	<b>19%</b>

That there is no treatment was available was expressed by 81%. Few (9%) had heard about some drugs available such as AZT & Nevirapine. They were the HIV positive ex-miners who seemed to be better informed about drugs. This is to be expected as they have undergone for counselling.

**Question 4. How can you prevent HIV/AIDS?**

<b>Use condom</b>	<b>Can't prevent</b>	<b>Healthy vegetable, and prayer</b>	<b>No idea</b>	<b>Don't know</b>
<b>68%</b>	<b>4.5%</b>	<b>9.5%</b>	<b>4.5%</b>	<b>13.5%</b>

Almost two thirds (68%) advocated the use of condoms. The rest had different views. Only 4.5% stated that HIV/AIDS cannot be prevented. The ex-mineworkers (81%) are aware of how HIV/AIDS is spread and know that condom use (68%) will prevent them from getting it. These facts exist within the complex circumstances of mineworkers' lives. Mineworkers live in hostels and only occasionally travel back to their families in other parts of Southern Africa. The mines are dangerous and the work is unpleasant and difficult (Campbell, 2003). When these mineworkers left their mines and retired to their homes, they left all their misdeeds. They began a disciplined new life. The current mineworkers think that the risk of dying of HIV/AIDS is small compared to dying from an accident in the mines. Mineworkers suffer from loneliness and having sex without the use of a condom, is a way of creating intimacy. Although mineworkers understand that HIV/AIDS is spread through unprotected sex, the context of their daily existence prevents simple behaviours, in contrast of ex-

mineworkers. This is also proving up to certain extent, that knowledge is not only them taking simple precautions. The environment of a person changes the behaviour of a person. The HIV-transmission routes support this theory. The Nairobi-Mombassa highway has been associated with HIV infection as has the Trans-African highway in East Africa (Nzyuko, 1991).

A number of studies have been carried out in East and Southern Africa to determine trends in sexual and reproductive health knowledge, attitude, practices and behaviour among young people about HIV/AIDS. It was reported that the level of knowledge was high, but perceived vulnerability and condom use were low (MacPhail & Campbell, 2001). The World Health Organization (WHO) asserted that people with enough knowledge on HIV/AIDS stood a better chance of preventing themselves against the same than those without knowledge. A number of studies have also shown that a mismatch between HIV knowledge and sexual behaviours exists in many settings; including South Africa (Abdool-Karim, 2001). This was supported by sex drive in humans is the strongest reflex, which neutralizes the knowledge component. Everybody in South Africa has probably heard about HIV/AIDS, but infection is still climbing (Boyle, 2004).

Attitude was assessed by answers to questions 5 & 6. A positive attitude towards HIV/AIDS sufferers was shown by 73%. This could be because of the ethical code in the mines not to discriminate on the ground of HIV status.

**Question 5. Would you like to shake hands, and drink tea in the same cup, used by an HIV/AIDS infected person?**

Yes	No	Do not know
68%	9%	23%

Many ex-miners (68%) acceded that they would not discriminate against HIV positive individuals and only 9% indicated that they would not share utensils with such persons. Attitude is difficult to assess as it is difficult to understand feelings of an individual. Although it is easy to write or say that one does not

discriminate, in reality it tends to be present in everyone to a lesser or greater degree. A study carried out By Nagesh et al (2003) in Ethiopia showed that respondents seem to have favourable attitude on prevention of HIV, but when asked to share a cup majority of them refused to share (Yayeh, et al, 2003). A proportion of respondents who opposed isolation of HIV/AIDS patients are higher than who supported (58% and 37%). It still indicates a strong prejudice and social discrimination, which is consistent with the study done in a rural community in 1995 (Israel et al, 1995).

**Question 6. Would you associate with family or friends of HIV/AIDS patients?**

Yes	No	Do not know
77%	13.5%	9.5%

Majority (77%) of mineworkers responded positively. Unlike in the earlier question they felt safer to associate with the friends and family of the afflicted.

In a study carried out at South Deep Mines (2002) it was found that the majority of participants were aware that there is no danger from casual contact with persons infected with HIV/AIDS, many remain uncomfortable working in the same area as an infected individual. A similar percentage would be less than comfortable using the same toilet or the same crockery and cutlery (South Deep Mine, 2003). The positive attitude (73%) to HIV/AIDS sufferers is as a result of their excellent knowledge (86.4%). This is almost comparable to the findings of a study done in Addis Ababa in 2000 (Mohammed et al, 2002). This indicates the existence of a favorable environment for HIV/AIDS sufferers among rural mining communities such as Transkei, and HIV disclosure will not be to the detriment of the sufferers.

**Question 7. What would you do to prevent contracting HIV/AIDS?**

Knows the facts	Does not know the	Does not replied

	<b>facts</b>	
<b>77%</b>	<b>18%</b>	<b>4.5%</b>

Use of condoms as a method of prevention was suggested by 77% of respondents. Abstinence was the method advocated by 4.5%. The National Union of Mineworkers (NUM) is openly preaching to the workforce that they must change their attitude towards sex and use condoms when having casual sex. The catch phrase, “you cannot eat sweets wrapped in plastic” must now be dropped. Therefore the era of “*nyama, nyameni*” or flesh to flesh is definitely over except in faithful marriages. In fact only abstinence is 100% safe. Condom is 95% safe. There is a 5% chance of condoms getting torn, if it is not properly inserted or if expired (NUM, 2001). These migrant mineworkers are far away from their home, and living without families and their social norms. Miners take risks everyday while working underground, thus they do not seem to care taking risks whilst they are above the ground, a fear which is underpinned by the thinking that “knocks in and be lucky to be knocked out alive” (NUM News, 2001). They deal with sex the same way. Sex workers are often forced to agree to unprotected sex despite fears of HIV infection because they refuse to pay for sex with condoms on (Macheke et al, 1998).

**Question 8. Do you use condom in your sexual practices?**

<b>Don't use condom because they are faithful.</b>	<b>Use condom</b>	<b>Do not like condom because it brings AIDS</b>
<b>64.5%</b>	<b>31%</b>	<b>4.5%</b>

Although 95.5% of ex-mineworkers know the truth about safe sex, only 31% used condoms as prevention. A very small number, 4.5% responded by stating that the use of condoms *is* the cause of HIV/AIDS. All but 1 was married, and living with their wives, so they claimed that it was not necessary to use condoms (64.5%). A study conducted in South Deep Mines in 2002 showed that less than a third of the supervisors had used condoms during the preceding 12 months.

This may be due to majority being married and claiming to be monogamous. The primary concern among the supervisors in regard to condom usage was that this would imply a lack of trust in one's partner (South Deep Mines, 2002). However, condom is an imperfect and temporary solution to the problem of HIV/AIDS. It is clearly mentioned by Campbell (2003) in her recently published book that condoms are not enough in the HIV/AIDS battle (Campbell, 2003). Moreover, in order to increase acceptability condom use, it is recommended that the existing condom distribution programmes is expanded to ensure that condoms are readily available at all hours and at all high risk location including rural communities like Transkei. There is a fair degree of ignorance, regarding correct use and safety of condoms. Apart from the use of condoms, mining communities have misconceptions about their sexual behavior and generally filtered down from their seniors or from peer groups. Abstinence is considered as bad for health. A study carried out by Nielsen (1999) showed that in mining communities, sexually inactive people of both genders are often labelled as abnormal, weird and childish, and abstinence was considered unhealthy (Nielsen, 1999).

Mineworkers have a belief that high blood pressure is likely to develop in individuals who do not engage in sexual intercourse (Molapo, 1995). There is also a mythical belief among people in Transkei that sexual intercourse with a virgin will cure one's HIV/AIDS. This is also a contributory factor in transmission of HIV in this region (Meel, 2003).

The epidemic is partly being driven by migrant laborers from neighboring states that in turn spread the virus in their countries when they return home. The problem is worse in the mines, where most workers live in single-sex hostels, and the virus spreads easily through prostitution. Actuarial Society of South Africa's AIDS committee told a recent mining seminar that the epidemic was threatening to kill up to 10% of the mining workforce a year (Mail, & Guardian). The survival of commercial sex workers depends on the money they make from selling sex. They are desperately poor and have to cadge for day-to-day existence. An overall unity and high competition among sex workers has made collectively insisting on condom use difficult (Campbell, 2003). Those who were

spared from contracting HIV in the mines will not be vulnerable for contracting it. This is because they have at home and has a wife.

**Question 9. Do you pass any discharge through your urinary opening?**

<b>Do not pass any discharge</b>	<b>Pass discharge</b>
<b>89%</b>	<b>11%</b>

Only 11% of ex-mineworkers reported to have a discharge from their urinary passage. One in 10 ex-mineworkers complained of urinary tract symptoms. This is correlated with a study carried out by Gilgen et al (2001) who also showed symptoms in 1 in 10 among current mineworkers. However, HIV could not be correlated in these two groups. A study carried out in Tanzania (2003) showed that there was a high prevalence of HIV and other STIs in communities around the new goldmines. HIV and STI prevalence among mining workforce is still relatively low, but high risk sexual behaviour is reported (Clift et al, 2003). Some of them responded that they are on treatment for TB, and drugs used for TB may cause discoloration of urine. A retrospective analysis carried out by Schonwald et al, 1999, showed that patients with HIV had a UTI more frequently than the controls (Schonwald et al, 1999). Only 4.5% of ex-mineworkers consulted a doctor for their discharge. This is in line with a study carried out in Lesotho (2000). A high prevalence of sexually transmitted diseases (STDs) and HIV infection was found in a population characterised by low levels of knowledge about STDs/HIV, high risk sexual behaviour, and evidence of inappropriate health seeking behaviour for STDs (Colvin et al, 2000).

**Question 10. Do you think that it is not worth living in this world at any time in your life?**

<b>Worth living</b>	<b>Not worth living</b>
<b>77%</b>	<b>23%</b>

About a quarter (23%) stated that life is not worth living. There are several possibilities for this kind of depressive thoughts. Old age is known for its



depressive disorders. The ex-mineworkers who are HIV positive may have depressive thoughts. HIV is known to have a significant association with suicides. Early studies suggested suicide risk 20 to 36 times higher than the general population, but more recent trends in America show a decline. This is not true in Africa, including the region of Eastern Cape, South Africa (Meel & Antoon, 2004). There was a suicidal tendency (life is not worth living) in 23% of ex-mineworkers, and a majority (16%) mentioned that it is related to their sickness.

Majority (81.8%) of ex-mineworkers have excellent knowledge on HIV/AIDS. This is probably because of the extensive publicity in the news media, and HIV/AIDS literacy programs at the workplace. Only 18.2% have a poor knowledge. The observation from this study is that the ex-miners have sufficient knowledge on HIV/AIDS. A good number of them (86.4%) know that HIV/AIDS kills, and that there is no cure. A similar percentage (86.4%) is also aware that it is transmitted sexually and can be prevented by condom use. However, a study carried out by Campbell (2003) showed that increasing levels of knowledge about HIV/AIDS did not necessarily improve safe sexual practices (Campbell, 2003). A study conducted by Gilgen et al (2001) on natural history of HIV/AIDS in a major gold mining centre in South Africa showed that the prevalence of HIV was high (29%) among mineworkers, and also very high (69%) among sex workers in that area. The migrant mineworkers had high prevalence of casual partners than more permanent residents (Gilgen et al, 2001). The knowledge about HIV was high, and vulnerability for HIV is low among ex-mineworkers, in contrast to current mineworkers in the Gilgen study, where knowledge and vulnerability for HIV were high. The media is mostly responsible for the adage, "HIV/AIDS kills" which in turn has been responsible for stigmatization of the disease. A good percentage (73%) was sympathetic and supportive towards HIV/AIDS sufferers. Only 22.7% of ex-mineworkers thought that it gets transmitted by sharing cups, and shaking hands with HIV positive persons. The same group has suggested that they should not be associated with. It is very difficult to assess the attitude of a person.

Risk of unsafe sex has been observed in 68.1% of the respondents. Of them, 48% have claimed to trust in their wives. Only 20.2% have not given any reason for not using condoms. Only 31% practice safe-sex by use of condoms (Fig. 5). A study conducted by Williams et al (2000) in the Carletonville mining area has also noted similar observation. Eighty five percent had never used condoms with their regular sex partners (Williams et al, 2000). Surprisingly in this study 57% did not disclose the number of sexual partners, and only 43% indicated that they have only one partner.

There is a consistent relationship between these three variables knowledge, attitude, and practices in this study. Theoretically, they should be interlinked, but in actual practice they may not. Most problematic is with sexual practices. Despite good knowledge on HIV, individuals still take risks. Sex drive is the strongest of impulses as it is responsible for procreation and thus continuation of species. Risky sexual behaviour in the face of a deadly disease such as HIV could be as a result of this strong drive.

## **5. Conclusion & Recommendations**

There is a high level of awareness and a positive attitude towards HIV/AIDS individuals. It was observed that there is less risk taking sexual behaviour among ex-mineworkers. There is a need of a prospective in-depth study in ex-mineworkers of Transkei to understand their lifestyle, and prevalence of HIV/AIDS. This report has a limitation due to the low number of respondents.

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## Annexure 1

Data collection sheet

Questionnaire No.-----

*Inombolo yempepha-mbuzo.-----*

HIV/AIDS-Related Knowledge, Attitude, and Practices Among Former Mineworkers of the Transkei.

*Ulwazi, iimbono kunye nokwenza ngoku yelelene kwisifiso I-HIV/AIDS (Ingculazi) kwabo babe fudula bengabasebezi basemgodini abakwi ngingqi ye-Transkei.*

Dear Ex-mineworker,

**Bhota wena wawufudula usebenza ezimayini**

We are in the process of conducting a survey on HIV/AIDS and, therefore, request you to answer the questions related to HIV/AIDS. You are not required to furnish us with your name or address since we would like to keep this information confidential. If you are HIV positive and would like to seek some help you can speak to us. We will keep your HIV status confidential and only assist you with your problem.

*Sikwiphulo lokwenza uphando mayelana nesifo i-HIV/AIDS (Ingculaza). Akukho mfuneko yokokuba ubhale igama lakho okanye I-address yakho kuba izimvo zakho siyakuzigcina ziyimfihlelo. Ukuba unaso esisifo yaye ufuna uncedo, thetha nathi sokunceda yaye ubunjani bakho asiyikububalisa nakubani na. Akukho nabani oyakuthi ave kuthi bunjani bakho malunga nesisifo.*

- A. Age----- B. Years of mining----- C. Type of work-----  
A. Ubudala----- B. Iminyaka usezimayini----- C. Uhlobo lomsebenzi----
- D. Married Yes No E. Number of Children ----- F. Number of sex Partners -----  
-----
- D. *Utshtile?* Ewe Hayi E. *Abantwana*----- F. *Abantu othandana nabo*-----
- G. Alcohol consume in a week (cross): *everyday twice thrice none*  
G. *Isantya soselo tywala ngeveki (khetha): yonke imihla kabini kathathu nakanye*

1. What do you know about HIV/AIDS? -----  
*1. Yintoni oyaziyo nge HIV/AIDS?-----*
  2. Do you know how it is transmitted? -----  
*2. Uyazi ukuba yosuleleka njani?-----*
  3. Is there any treatment available for HIV/AIDS? -----  
*3. Ingaba likhona ichiza elinyanga I-HIV/AIDS?-----*
  4. How can you prevent HIV/AIDS? -----  
*4. Ungayikhusela njani I-HIV/AIDS?-----*
  5. Would you like to shake hands and drink tea in the same cup used by an HIV/AIDS infected person? If NO, then explain the reasons why?  
*5. Ingaba ungabambana ngezandla okanye usele ngemagi ibisetyenziswa ngumntu one HIV/AIDS. Ukuba kunjalo chaza ukuba ingenziwa yintoni lo nto?*
- 
- 
6. Would you associate with family or friends of HIV/AIDS patients? If NO, then explain why not?  
*6. Ingabe unganabo ubuhlobo nezizalwane okanye abahlobo babantu aba ne HIV/AIDS? Ukuba kunjalo, kutheni?*

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7. What would you do to prevent contracting HIV/AIDS?

7. *Ungenza ntoni ukuze ukusele ukosulelwa sisifo I-HIV/AIDS?*

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8. Do you use condom in your sexual practices? If No, then why not explain

8. *Ingaba uyayi sebenzisa I-condom xa usabelana nge sondo? Ukuba akunjalo, chaza ukuba kutheni*

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9. Do you pass any discharge through your urinary opening? What do you think the cause of this discharge is? Have you consulted a doctor for this?

9. *Xa uchama ingaba zikhona izinto eziphumayo apha kuwe? Ingaba zibangelwa yintoni? Ukhe wa dibana no gqirha malunga nezizinto ziphuma kuwe?*

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10. Do you ever think that it is not worth living in this world at any time in your life? If so, explain why?

10. *Ukhe ucinge ukuba ubom abubalulekanga? Ukuba kunjalo, chaza ukuba yintoni le ikwenza ucinge ngoluhlobo.*

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Thank you

**Siyabulela**

Yours Sincerely

**Oweni ozithobileyo**

Benefit Examination Clinic Staff.

Post this questionnaire in an enclosed envelope.

*Posa oluphando luvo ngokusebenzisa imvulophu evalwayo.*