

## **HIV and AIDS in mining townships in Botswana: A comparison of Orapa, Jwaneng, Sowa and Selebi-Phikwe**

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### **Abstract**

*All sectors of human interaction are affected by HIV and AIDS internationally, regionally and nationally. The mining sector, which generally employs the largest number of men, has often been the most affected. This paper seeks to compare HIV prevalence and trends among people aged 6 weeks and above in the 4 mining townships in Botswana, namely: Orapa, Jwaneng, Sowa and Selebi-Phikwe. The paper seeks to (a) establish the cause of the prevalence, (b) establish the difference and similarity between the four mining townships, (c) provide indicative trends in sexual and preventive behavior among the population aged 10 to 64 and (d) investigate any interventions employed by the mines to address the epidemic and assess their impact if any. The data used for this paper is derived from the 2013 Botswana AIDS Impact Survey IV (BIAS IV). SPSS Version 21 software was used for data analysis. To establish the trends, comparison of HIV prevalence was obtained from BAIS II and III. Jwaneng, which is an open township, and Orapa, the only closed mining township, both have the lowest prevalence compared to the other mining townships. Jwaneng and Orapa have consistently shown a decline in the HIV prevalence compared to Selebi-Phikwe, which has consistently shown an increase in prevalence.*

**Key Words:** mining townships, HIV and AIDS, policies, programmes, interventions, Selebi-Phikwe, Orapa, Jwaneng, Sowa.

### **Introduction**

The mining sector is lucrative and pivotal to successful economy globally. In South Africa, the mining sector contributes 6.6% to the national gross domestic product and is the largest employer, with about 455 000 employees (Health Systems Trust, 2016). In Botswana, the mineral industry has dominated the national economy since early 1990s. Diamonds have been the leading mineral for many years and because of that Botswana has become a middle-income country.

According to the World Bank Update report of 8<sup>th</sup> October 2015, Botswana is a development success story because of the mining industry. It is a fact that for some time now, the GDP of Botswana has shown to be robust amongst the four mining townships of Jwaneng, Orapa,

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Selebi-Phikwe and Sowa. Of these, Selebi-Phikwe had the largest growth averaging 5% per annum over the past decade (Aishwarya Yerra, 2015). The township has the Botswana Defence Force camp, BCL-Copper & Nickel mine and many industrial activities as well as some government departments. There is a lot of interaction between miners and community members. A similar scenario also exist in Sowa and Jwaneng, a settlement township surrounded by farming communities. According to Kovacs-Kowalke (2009), corporate social responsibility starts where the mine voluntarily support communities for the betterment of their lives. This responsibility further extents to the commitment to clean environment. Indeed, Hamman & Kapelus (2004) argue that the existence of a mine in a community make a permanent impact on individuals and the surroundings.

Orapa Township is small compared to Selebi-Phikwe and Jwaneng. It is a closed mine and has minimal interaction with surrounding communities. Sowa by contrast is an open mining township surrounded by not well-developed villages such as Dukwi and Nata. The population of the four mining townships are as follows: Orapa 9531, Jwaneng 18008, Sowa 3598 and Selebi-Phikwe 49411 (Statistics Botswana, 2011). The townships were created mainly to support the mines. Selebi-Phikwe was established in 1971 when the Bamangwato Concessions Limited (BCL) mines came into operation. This development transformed Selebi-Phikwe from a cattle post to a nickel and copper mining township that attracted a lot of male labourers and became “one of Botswana’s largest private sector employers” (Kovacs-Kowalke, 2009, p30).

According to the Department of Public Service Management (DPSM) (2013), HIV and AIDS has now become a concern for the mining sector. Botswana population structure shows that about 40% percent of the population are youths, most of who are infected and affected by the HIV/AIDS syndrome. Consequently, the impact of HIV and AIDS on the workforce affects productivity and ultimately the economy (Statistics Botswana, 2011). Health Systems Trust (2016) points out that the larger part of GDP in Botswana comes from the mining sector, which employs the largest number of people who come from different areas and with varying professional, social and moral backgrounds as well as different lifestyles. Kilale et al. (2015) point out that mining areas have a great risk of HIV transmission; but availability and knowledge of prevention intervention to the population in these areas is inefficient. These authors, who conducted their study in two mining areas in Tanzania, stated that information on HIV and AIDS was available to only 25% of the study population in Gelta and Kalawa. Masaga and Sempere (2011) reported that due to long absence from partners, miners engage in risky

sexual behaviors with commercial sex workers and end up contracting HIV and AIDS. A study on mines, migration and HIV and AIDS in Southern Africa revealed that in the past, both Swaziland and Lesotho sent the largest number of men to South Africa mines, and, consequently, these countries have the largest HIV prevalence in the world (Como and De Walque, 2012). Extended periods of separation from their households meant that the men fell prey to multiple concurrent partnership and engaged in sex with commercial sex workers. Further, having a migrant miner partner increased the risk of HIV infection to the wives. The wives of the absent migrant miners were also likely to be involved in extra-marital affairs. Thus, migrant miners to South Africa increased the risk of spreading HIV and AIDS in their countries of origin.

University/Graduate school in Global studies (2009), examined the history, stigma, gender and traditional values, as well as blood diamond movement in the Central District of Botswana. It was observed that stigma and gender issues played a significant role in rendering the De-Beers and Debswana intervention programmes unsuccessful in halting the spread of HIV and AIDS. In addition, the campaign by Survival International on blood diamonds made things difficult for diamond mines in the country to fully succeed in their programme of social responsibility.

EBSCO (2016, March 27). Mmegi/The Reporter paper (Botswana) (Dec 11 2013 News, p1) indicate that Selebi-Phikwe township has had the highest HIV prevalence since 2008. Rape and defilement are also reported to be on the increase in the town. Jwaneng is leading in cohabitation, a factor identified in both the BAIS III (2008) and IV (2013) as the facilitator of the spread of HIV. This shows consistent increase of the HIV prevalence in mining towns.

In 2006, De Beers and Soul City Institute for Health and Development Communications in South Africa entered into a partnership to address HIV and AIDS by training communities in five diamond mining towns in the country. The aim of the partnership was to teach about HIV and contribute to positive behavior change in the targeted mining towns. The interventions employed were based on the fact that South Africa is amongst the countries that have the largest number of HIV infected people in the world, with an estimated 5.5 million people living with HIV (UNAIDS 2006; UNAIDS & WHO 2007). In 2000, De Beers sanctioned the implementation of several prevention, care and support programmes for the employees in South Africa. The Soul City Institute for Health and Development Communications made efforts to expand interventions to the communities, taking cognizance of the devastating effects of the

HIV and AIDS (Rispel et al 2010). The evaluation of the project showed improved knowledge about HIV but with limited positive behavior change, high use of commercial sex workers, multiple concurrent partnerships (27%) and lack of condom use with non-regular sex partners (23%). However, there was an increased condom use at least by sex-workers and accounted for 63%, which is much higher than in 2005 (38%) according to the national population based survey. Indeed, this study evidenced the complexities of population in mining townships and that intervention programmes will always have some element of impact.

The mine as a workplace is an integral part of the mine worker regardless of the type of job one is employed to do. A workplace is defined as the location at which an employee provides services to an employer. The workplace environment can be a facilitator for the spread of HIV and AIDS and this has a major internal and external impact on organizations. Mining workplaces, which mostly employ men, need to be thoroughly explored to see whether and how they could facilitate the spread of HIV and AIDS. Employees spend most of their time at the workplace, hence workplace environment needs to be conducive for people to be productive. Productivity can be achieved through supportive policies and services as well as having a healthy workforce. Given the trends of the prevalence and the incidence of HIV and AIDS globally, regionally and here in Botswana, the workplace dynamics need to be fully understood.

Employees living with HIV and AIDS often suffer estrangement from their milieu, stigma from their co-workers and employer, social isolation and ridicule, or experience discriminatory practices, such as refusal of promotion and termination or refusal of employment. Fear of an employer's reaction can cause a person living with HIV anxiety and much discomfort. Employers see recruitment as a buying-selling relationship and as such would likely be unwilling to recruit or retain an employee with HIV/AIDS.

### **The aim and objectives of the study**

This study seeks to explore HIV and AIDS in the four mining townships in Botswana; namely: Jwaneng and Orapa with a low prevalence, Sowa with a higher prevalence than the previous two and Selebi-Phikwe with the highest HIV prevalence in the country. The objectives of the study are to (a) establish HIV prevalence estimates among the population in the mining township of Orapa, Jwaneng, Sowa and Selebi-Phikwe for people aged 6 weeks and above, (b) establish the differences and similarities of the mining townships of Orapa, Jwaneng, Sowa and

Selebi-Phikwe with regard to HIV prevalence, (c) provide indicative trends in sexual and preventive behavior among the population aged 10 to 64 years and (d) establish interventions by the management of the mines employed to respond to the HIV and AIDS epidemic.

### **Methodology**

Data used for this study were derived from the 2013 Botswana AIDS Impact Survey IV (BAIS IV), provided by the National AIDS Coordinating Agency (NACA). BAIS IV is conducted every 4 years with the objectives of providing current national HIV estimates among the population aged 6 weeks and above and to provide indicative trends in sexual and preventive behavior among the population aged 10 to 64.

### ***Sampling***

BAIS IV was a cross sectional survey which used a two-staged sample design. In the first stage, all districts and major urban areas constituted the strata, after which the enumeration areas were drawn and total 459. The second stage consisted of systematic sampling of household and individuals. Both household and individuals questionnaires were used for data collection and Smart Phone devices were used to capture data at the time of enumeration period. Only individual who had completed the individual questionnaire were selected from the data set for this study provided they were from the 4 mining townships. A total of 40 588 individuals were selected for the study.

### ***Data Analysis and Interpretation***

Data were analysed using SPSS Version 21. Frequency distribution and cross tabulation were used in analysing the data. In establishing the prevalence, similarities and differences in these townships that could be fuelling the prevalence, three main sexual behavioural practices variables were selected and analysed. These were Multiple Concurrent Partnership, Safe Male Circumcision and Condom Use. To establish interventions employed by mines both BCL, De Beers Botswana (Debswana) and Botswana Soda Ash (BOTASH) were consulted on policies and strategic interventions. The study included men and women residing in the 4 mining townships and men and women aged 10 to 64. The study excluded men and women who were not residing in the 4 mining townships and men and women outside the age bracket of 10 to 64.

### ***Limitation of the Study***

The limitations of the study include the fact that it used secondary data from Botswana AIDS Impact Survey IV 2013 and it purposefully sampled only 4 mining townships. To make up for the limitations, direct consultations were made with representative of the 4 mining townships to find out about the policies and interventions employed by each to address the HIV and AIDS epidemic. Past BAIS data were used for the purpose of establishing trends and thorough literature review was carried out.

## **Results**

### ***Demographic***

**Table 1: Demographic characteristics of respondents in the selected towns**

<b>Demographics</b>	<b>District</b>				<b>Total (%)</b>
	<b>S/Phikwe (%)</b>	<b>Orapa (%)</b>	<b>Jwaneng (%)</b>	<b>Sowa (%)</b>	
<b>Sex</b>					
Male	46	45	47	51	46
Female	54	56	53	49	54
<b>Marital Status</b>					
Single	58	50	54	54	56
Living Together	22	16	21	20	21
Married	17	33	23	24	21
Ever Married	3	1	2	2	2

Table 1 shows demographic characteristics of respondents by township. Generally, there were more females than males in all townships with the exception of Sowa. Furthermore, Selebi-Phikwe has the largest proportion of single (58%) and cohabitation (22%) and fewer married couples (17%) compared to other mining townships. Orapa, which is the only closed mine, reported the largest proportion of married persons (33%), followed by Sowa (24%), then Jwaneng (23%) and lastly Selebi-Phikwe (21%).

### ***HIV Prevalence in the four main townships***

**Table 2: HIV Prevalence Rate by Township**

<b>District</b>	<b>Male (%)</b>	<b>Female (%)</b>	<b>Total (%)</b>
Selebi-Phikwe	25.4	29.3	27.5
Orapa	9.9	20.2	15.6
Jwaneng	8.5	16.7	12.8
Sowa	13.3	26.5	19.8

Table 2 shows the percentage of HIV prevalence by township. The HIV prevalence ranges from 12.8% in Jwaneng to 27.5% in Selebi-Phikwe. Females had a relatively higher prevalence rate compared to males in all townships. This is particularly so in Selebi-Phikwe and Sowa. Among the males, Jwaneng and Orapa townships showed a slightly lower prevalence of HIV, with 8.5% and 9.9% respectively.

**Table 3: HIV Prevalence rate by District Targeted Age Group**

	15-24	25-49	15-49	14-18	19-24	25-30	31-49	50-64
Selebi-Phikwe	9.2	42.6	30.8	4.3	12.1	20.2	31.3	30.0
Orapa	8	23	19.1	2.8	10.7	18.1	24.3	16.2
Jwaneng	9.6	18.5	15.9	10.7	8.4	12.7	21	11.6
Sowa	7.1	33.5	25	2.7	9.3	15.7	39.7	23.6

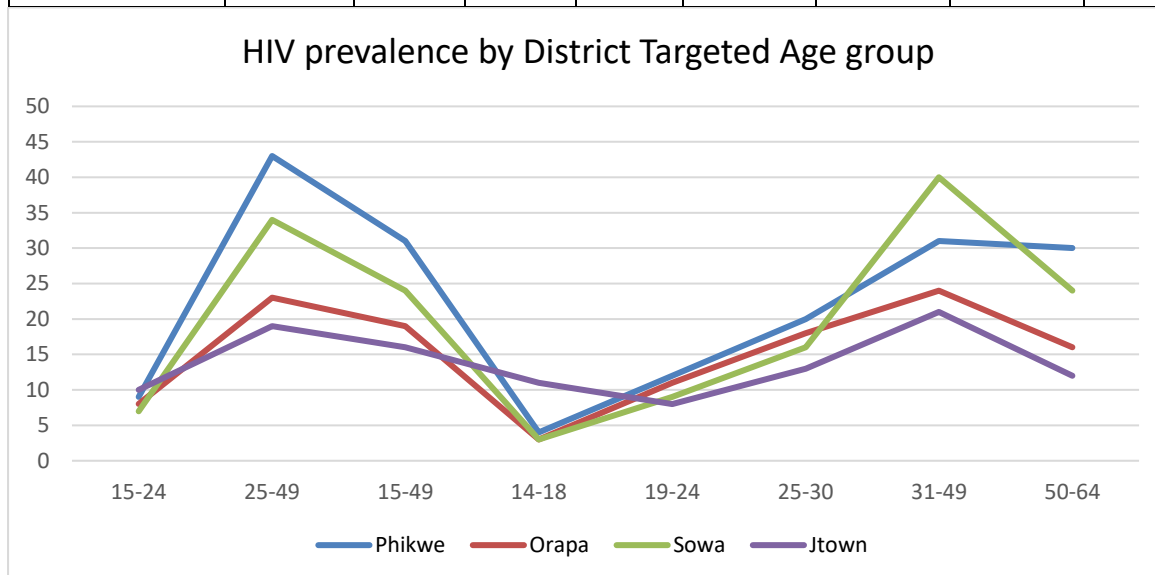


Table 3 shows that regarding HIV prevalence by district/townships per age group, Selebi-Phikwe and Sowa showed that people aged between 25–49 have higher HIV prevalence, which is 43% and 34% respectively. Furthermore, for the age group 31–49, the same scenario holds but the proportion is 31% for Selebi-Phikwe and 40% for Sowa. Generally, the HIV prevalence for those aged 14 –18 is low except for Jwaneng township which has a slightly low percentage of 11.

**Table 4: Comparison of BAIS II (2004), BAIS III (2008) and BAIS IV (2013) HIV prevalence by Township.**

District	2004	2008	2013
Selebi-Phikwe	23.3	26.5	27.5
Orapa	18.2	16.7	15.6

Jwaneng	19.0	15.7	12.8
Sowa	18.8	25.4	19.8

Table 4 shows the HIV prevalence from the previous three BAIS conducted in 2004, 2008 and 2013. Comparison of BAIS IV with BAIS III results for these towns show a drop in HIV/AIDS prevalence for Sowa, from 25.4 % recorded in BAIS III to 19.8% in BAIS IV, and a slight increase for Selebi-Phikwe from 26.5% in BAIS III to 27.5% in BAIS IV.

***Circumcision in the four mining towns***

**Table 5: Percentage of Males aged 10-64 who are circumcised**

District	Percent (%)
Selebi-Phikwe	28
Orapa	33.9
Jwaneng	30.8
Sowa	26.7

Table 5 shows that almost all mining township have a slightly high proportion of men who have been circumcised compared to 24% the national percentage. Orapa and Jwaneng showed an almost equal percentage of 33.9% and 30.8% respectively, which is relatively higher compared to 24% of the national rate of circumcision. Sowa had lower levels of circumcisions at 26.7% followed by Selebi-Phikwe (28%). It is worth noting that both Orapa and Jwaneng mines are owned by DeBeers Company; this may be indicative of good and robust HIV and AIDS intervention policies and programmes put in place by the management of the mine. Sowa mine is owned by BOTASH while Selebi-Phikwe is owned by BCL.

***Unemployment***

Selebi-Phikwe has the highest unemployed rate of 21.6% compared to other 4 mining townships: Jwaneng (14.3%), Orapa and Sowa reported 12.6% and 12% respectively.

**Table 6: Proportion of Unemployment Rate and MCP Rate by District**

District	Percent Employed	Percent Unemployed (7432)	% who reported intercourse with more than one partner(N=4576)
Selebi-Phikwe	78.4	21.6	57.1
Orapa	87.4	12.6	17.5
Jwaneng	85.7	14.3	21.2
Sowa	88	12	4.3



Note: MCP = Multiple Concurrent Partners.

World Bank Group (2015) found that where mines create better opportunities for women, there are permanent effects on women's labor market participation. However, it also became clear that in most cases it is men who get better jobs while women are either employed in low paying jobs or remain unemployed, in which case they can get involved in risk sexual behavior for survival purposes. This observation support the results shown on Table 6 which show high unemployment and MCP in Selebi-Phikwe.

### ***Multiple Concurrent partners***

At 57%, Selebi-Phikwe reported the largest number of people involved in multiple concurrent partner. Jwaneng reported 21.26%, while Orapa reported 17.5% and 4.3% was observed for Sowa. The rate for multiple concurrent partners is higher among the single (56%), followed by those who are cohabiting (21%). Multiple concurrent partners may largely be accountable for the highest HIV prevalence rate in Selebi-Phikwe mining township.

### **A Focus on Selebi-Phikwe: a mining township with highest HIV prevalence**

Table 7 present a summary of demographics related to HIV and AIDS in the mining town of Selebi-Phikwe relative to other mining townships.

**Table 7: Snap-Short of Selebi-Phikwe Township in Comparison with other Townships**

<ul style="list-style-type: none"><li>▪ Females account for 54% of the population.</li><li>▪ Male literacy rate 85.8%. (<i>SB 2014</i>)</li><li>▪ Female literacy rate 92.4%. Total- 89.1% (<i>SB 2014</i>)</li><li>▪ The town has the largest percentage of single at 58% .</li><li>▪ The percentage of people who are living together/ cohabit is 22%.</li><li>▪ The town has the lowest percent of married couples at 17% .</li><li>▪ Male circumcision is the lowest in the town at 28%</li><li>▪ Unemployment is the largest in the town at 21%.</li><li>▪ The town has the largest percentage of multi concurrent partners at 57.1%.</li><li>▪ The town has the largest number of unemployed women at 21.6%.</li><li>▪ There is a BCL mine with a large number of employed men.</li><li>▪ Selebi-Phikwe is the only township that has consistently registered an increase in HIV prevalence compared to other mining towns.</li></ul> <p><b>Other information:</b></p> <ul style="list-style-type: none"><li>▪ Textile firms are not functioning anymore in Selebi-Phikwe.</li><li>▪ There is a BDF camp in the town and has a large number of employed men.</li><li>▪ BCL miners stay in Botshabelo area where accommodation is cheaper.</li></ul>
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Table 8 present a summary of intervention measures made by the Bamangwato Concession Limited Management in the mining town of Selebi-Phikwe.

**Table 8: Snap-Short of Health & Wellness Interventions by BCL Management of the Mines**

<p><b>1. Policies :</b></p> <ul style="list-style-type: none"> <li><i>i.</i> HIV/AIDS Policy</li> <li><i>ii.</i> Wellness Policies (Drafts)</li> </ul>
<p><b>2. Health &amp; Wellness Programs:</b></p> <ul style="list-style-type: none"> <li><i>i.</i> Psychosocial counseling</li> <li><i>ii.</i> Peer Education</li> <li><i>iii.</i> Voluntary Counseling Testing</li> <li><i>iv.</i> Occupational Health</li> <li><i>v.</i> General Health Education and Promotion</li> <li><i>vi.</i> Research</li> <li><i>vii.</i> Condom Distribution</li> </ul>
<p><b>3. Community Outreach Interventions:</b></p> <ul style="list-style-type: none"> <li><i>i.</i> Community Wellness Events</li> <li><i>ii.</i> Community Capacity Building</li> <li><i>iii.</i> Partnerships with other sectors e.g. NGOs, DMASC and Government departments</li> <li><i>iv.</i> Collaboration with schools on health and wellness matters</li> <li><i>v.</i> IDCC site for employee and general public</li> </ul>
<p><b>4. Share Successes / Achievements:</b></p> <ul style="list-style-type: none"> <li><i>i.</i> VCT programs as many employees know their HIV status</li> <li><i>ii.</i> Most programs based on EBP as a result of research</li> <li><i>iii.</i> Good adherence rate and Few AIDS related mortality.</li> <li><i>iv.</i> strong partnership with community as BCL often show cases services in all most all community events on wellness</li> <li><i>v.</i> Strong psychosocial programs which used and recognized by many employees</li> <li><i>vi.</i> Provision of resources and management support by leadership.</li> <li><i>vii.</i> High distribution rate of condoms. BCL on monthly basis distribute more condoms than any site in the whole of Selibe-Phikwe as shown my quarterly reports.</li> </ul>
<p><b>5. Challenges Related the HIV And Aids Response / Interventions:</b></p> <ul style="list-style-type: none"> <li><i>i.</i> Declined peer education program</li> <li><i>ii.</i> High prevalence rate of STIs</li> <li><i>iii.</i> Unaligned HIV and AIDS policies</li> </ul>
<p><b>6. Comment by Medical Officer:</b></p> <p>The Selebi-Phikwe community has all the resources needed to curb the epidemic. What is needed is re-enforcement of the messages such that it resonates with the youth.</p>

## **Discussion**

It was observed in Table 2 that in all the mining townships, females had a relatively higher HIV prevalence rate compared to males. The townships with lower levels of circumcision have higher HIV prevalence rate. Selebi-Phikwe is the only township that registered an increase in HIV prevalence in both 2008 and 2013. Several factors could be responsible for the increase in HIV prevalence. These may include sexual behavior, socio-economic and low literacy rate by both females and males. In addition, the reason for this could also be the high unemployment rate experienced in this town. In fact, one of the suggestions is that since a number of textile factories closed in the late 1990s, high unemployment among female residents has made them financially dependent on the male mine-workers and truck-drivers travelling between South-Africa and the north. Commercial and transactional sex between local women, the miners and truckers could be driving the high HIV infection rate as the high MCP (57.1%) in Selebi-Phikwe Mining Township.

The mine, owned by Bamangwato Concessions Ltd. (BCL), is easily accessible from the town, and is not on the outskirts, as is the case with most other mines in the country. The miners and the local township people interact freely, particularly in Botshabelo area, an informal settlement where many of the miners find affordable housing. Another possible explanation is the large number of people in Selebi-Phikwe who are single and cohabiting. This is plausibly attributable to the fact that this town is an open mining township unlike Orapa, which has a reasonable number of married people (33%) and lower cohabitation (16%) compared to the other three mining townships. According to Statistic Botswana (2014), Orapa has a literacy rate of 97.1% followed by Sowa with 96.3%, Jwaneng with 95.6% and Selebi-Phikwe is the lowest with 89.1%. The men in Selebi-Phikwe is the lowest with 85.8%. Literacy is also said to be a factor that influence uptake of programmes and interventions.

Baingapi (2015) also reported that living together in the same house outside wedlock is a major player in the spread of HIV and AIDS in Jwaneng. At the women forum, it emerged that the standard of living in Jwaneng is high and most women in the township cohabit with the miners to cope with high living standards. It was further revealed that most women who cohabit are at risk of contracting the HIV virus because they are afraid to insist on condom use as they depend mostly, or even solely on their partners. High rentals in Jwaneng were also pointed out as one of the reasons why the youth cohabit. High rise of teenage pregnancy and defilement cases were reported, with most of the perpetrators being male mine workers in Jwaneng. The miners were alleged to offer cash and gifts to students in exchange for sex. Miners who work on shifts

and leave their children unattended face the threat of these children engaging in risky behaviour (Baingapi, 2015). All these factors are said to contribute significantly to the spread of HIV and ADIS in Jwaneng Mining Township.

The three townships of Orapa, Sowa and Jwaneng are smaller compared to Selebi-Phikwe. Consequently, there seems to be better collaboration and networking between the mine authority and the township authorities in these smaller townships in the appropriation of intervention strategies, which often extend to employees' families. Whereas BCL has taken steps to address the HIV and AIDS crisis in Selebi-Phikwe, most of the initiatives focus only on its 4 200 employees to the exclusion of the local community. Eighty (80) trained peer educators conduct regular wellness sessions that include HIV prevention, and distribute 25 000 condoms a month to fellow employees. They have succeeded in persuading 90% of the workforce to take advantage of voluntary counseling and testing (VCT) for HIV at the mine hospital, which also provides ARV treatment. Community outreach efforts were scaled back after recent budget cuts (IRN, 2009). World Bank Group (2009) emphasizes intensifying efforts to reach both workers and communities they reside in as HIV and AIDS is swiftly eroding the gains countries have made in life expectancy, productivity and growth.

Another interesting element is that Jwaneng, which is an open township and is larger than Sowa, has low prevalence compared to Sowa which is also an open township. In addition, Jwaneng and Orapa mining townships which are operated by Debswana both have a lower HIV prevalence rate compared to others. This may be indicative of the targeted interventions and the commitment of the management in prioritising HIV and AIDS response. Debswana is the first of the mine management to provide a comprehensive, prompt, deliberate, robust and targeted response to HIV and AIDS, with policies and interventions aimed at enhancing the wellness of the employees including HIV prevention, care and support to the affected and infected by HIV and AIDS. This could account for having both mining townships with a lower HIV prevalence rate compared to the other mining townships. In addition, the literacy levels could also be facilitating the mine workers and their families or communities to easily embrace intervention strategies provided by managements on the mining townships.

Perhaps other mining townships do not have much control on ensuring that their employees, together with their families, access services and are protected from infiltration of other populations; thus increasing their risk of infection. During the IRIN/PlusNews interview in November 2009, Mr Marumo Johane, the BCL's Acting HIV and AIDS Superintendent, admitted that the Selebi-Phikwe community is linked with the BCL community and there was need to focus more on community participation. The Superintendent was however puzzled by the high rates of female unemployment, alcohol consumption and MCP. According to World Bank Group (2006) effectiveness in addressing socio-economic factors is one approach for winning the war against HIV and AIDS. Other factors that the study laments are the scope and effectiveness of prevention programmes addressing the difference high risk groups and reducing stigma and discrimination.

Voluminous evidence from local, regional and international literature demonstrates and reveals that the mining sector holds the economy of the countries where they exist. These include Botswana, South Africa and Zimbabwe, as large numbers of people are attracted to mining townships to seek employment. Most do not find employment but remain in towns for a long period, increasing unemployment numbers as well as susceptibility to risky behavior. Them and their partners back home end up engaging in risky sexual behaviors such as seeking the services of commercial sex workers, having multiple concurrent partners, participating in indiscriminate casual sexual relationships, uncontrolled use of alcohol and other substances and having unprotected sex. They thus end up exposing themselves to the risk of HIV infection. World Bank Group (2015) indicates that socio-economic factors that arise from any situation affects women more. This may be the case in Selebi-Phikwe and other places where it is evident that more women are unemployed, do commercial sex work and have multiple concurrent partners. Indeed, in Botswana and worldwide it is knowledge in the public domain that females have the highest prevalence rate compared to their male counterparts.

### **Conclusion and Recommendations**

Townships with mines owned by Debswana have lower HIV prevalence rate when compared with other mining townships. There are observable differences in the approach and levels of commitment and implementation of the HIV and AIDS intervention across the mine-management of mining townships. With the exception of Sowa, open mining townships reported high proportions of multiple concurrent partnerships (MCP). Since MCP is one of the key drivers of HIV, this may account for the high prevalence rate noted in these townships.

Selebi-Phikwe has a complex situation as there are many socio-economic factors fuelling the spread of HIV prevailing in the township. This may account for the ever-increasing HIV prevalence rate in Selebi-Phikwe, which has also been the highest in the country for over 2 decades.

**The study makes the following recommendations:**

- Government to collaborate with management of mines to design interventions that target mining townships since their predicaments may be different from those of people living in villages and urban areas. Each township or district has its own unique needs and hence the implementation of programmes should be done in line with these specific needs.
- Undertake a qualitative study on sexual behaviour among residents of mining townships to better understand how to strategically address them. It is important to find out which programmes are preferred by the miners and their communities and what has worked in other mining townships in the country such as Orapa and Jwaneng, as well as in mines outside Botswana. Such successful interventions could then be adapted to Selebi-Phikwe and other areas.
- Government needs to strengthen its support and monitoring of mines in the implementation of HIV and AIDS response to ensure access to interventions. This will enhance and ensure that the management of the mines also intensify their efforts and/or prioritise the response.

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