



Journal of  
**AIDS and HIV Research**

Volume 9 Number 2 February 2017

ISSN 2141-2359



*Academic  
Journals*

## ABOUT JAHR

**The Journal of AIDS and HIV Research (JAHR)** is published monthly (one volume per year) by Academic Journals.

**Journal of AIDS and HIV Research (JAHR)** is an open access journal that provides rapid publication (monthly) of articles in all areas of the subject like the implications for gender-based HIV and AIDS prevention interventions, Sputum cellularity in pulmonary tuberculosis, Comparative tolerability and efficacy of stavudine 30 mg versus stavudine 40 mg in patients on combination antiretroviral therapy, HIV and sexual risk behaviours amongst intravenous drug users etc.

The Journal welcomes the submission of manuscripts that meet the general criteria of significance and scientific excellence. Papers will be published shortly after acceptance. All articles published in JAHR are peerreviewed

### Contact Us

**Editorial Office:** [jahr@academicjournals.org](mailto:jahr@academicjournals.org)

**Help Desk:** [helpdesk@academicjournals.org](mailto:helpdesk@academicjournals.org)

**Website:** <http://www.academicjournals.org/journal/JAHR>

**Submit manuscript online** <http://ms.academicjournals.me/>

## Editors

**Prof. Bechan Sharma,**  
*Department of Biochemistry,  
University of Allahabad,  
Allahabad,  
India.*

**Dr. John E. Lewis,**  
*University of Miami,  
Miller School of Medicine,  
1120 NW 14th Street  
Suite #1474 (D21)  
Miami, FL 33136  
USA.*

**Prof. Ruta Dubakiene,**  
*Vilnius University,  
Lithuania.*

**Prof. William Nuhu Ogala,**  
*Ahmadu Bello University Teaching Hospital,  
Zaria, Nigeria.*

## Editorial Board

**Dr. Arun Kumar,**  
*Manipal College of Medical Sciences,  
India.*

**Dr. Manal Fouad Ismail,**  
*Faculty of Pharmacy,  
Cairo University,  
Egypt.*

**Dr. Eshrat Gharaei Gathabad,**  
*Mazandaran University of Medical Sciences, Sari  
Faculty of Pharmacy,  
Iran.*

**Dr. P. Aparanji,**  
*Department of Biochemistry,  
Andhra University Visakhapatnam,  
India.*

**Dr. Amzad Hossain,**  
*Atomic Energy Centre,  
GPO Box 164, Ramna,  
Dhaka-1000,  
Bangladesh.*

**Prof. Irvin Mpofo,**  
*University of Namibia,  
Namibia.*

**Dr. Rajiv Nehra,**  
*Muzaffarnagar Medical College,  
India.*

**Dr. Marion W. Mutugi,**  
*Jomo Kenyatta University of Agriculture and Technology,  
Kenya.*

**Dr. Emmanuel Nwabueze Aguwa,**  
*Department of Community Medicine,  
College of Medicine,  
University of Nigeria,  
Enugu Campus,  
Nigeria.*

**Dr. William A. Zule,**  
*RTI International,  
USA.*

**Dr. M. Abhilash,**  
*The Oxford College Of Engineering,  
Bommanahalli, Hosur Road, Bangalore 560068,  
India.*

**Dr. Fukai Bao,**  
*Kunming Medical University,  
China.*

**Dr. Baligh Ramzi Yehia,**  
*University of Pennsylvania School of Medicine,  
Philadelphia, PA,  
USA.*

**Dr. Khandokar Mohammad Istiak,**  
*University of Dhaka,  
Dhaka-1000,  
Bangladesh.*

**Dr. Aamir Shahzad,**  
*Max F. Perutz Laboratories,  
University of Vienna,  
Vienna Bio center, A-1030 Vienna,  
Austria.*

**Dr. Subarna Ganguli,**  
*Pharmacy college in Kolkata ,  
West Bengal,  
India.*

**Dr. Mehmet Kale,**  
*Dept. of Virology,  
Mehmet Akif Ersoy University,  
Faculty of Veterinary Medicine,  
Turkey.*

**Mr. Shakeel Ahmed Ibne Mahmood**  
*Bangladesh AIDS Prevention Society, BAPS, Bangladesh  
Youth Wing, National AIDS Committee,  
Bangladesh.*

**Dr. Adewumi, Moses Olubusuyi,**  
*Department of Virology,  
College of Medicine,  
University College Hospital,  
University of Ibadan,  
Ibadan,  
Nigeria.*

**Dr. Theodoros Eleftheriadis,**  
*General Hospital of Serres,  
Serres,  
Greece.*

**Dr. Keertan Dheda,**  
*University of Cape Town,  
South Africa.*

## ARTICLES

- |   |           |
|---|-----------|
| <b>Assessment of the workplace programme for HIV/AIDS in the tourism industry sector of Namibia</b> | <b>31</b> |
| Teweldemedhin, M. Y. , Swartz, J., Kavita, E. and Siebert, A  |           |
| <b>Factors associated with HIV testing among female sex workers in Botswana</b>                     | <b>42</b> |
| Keamogetse Setlhare and Gorata Duduzile Manyeagae   |           |

*Full Length Research Paper*

# Assessment of the workplace programme for HIV/AIDS in the tourism industry sector of Namibia

Teweldemedhin, M. Y. \*, Swartz, J., Kavita, E. and Siebert, A.

Namibia University of Science and Technology, Windhoek, Namibia.

Received 5 November, 2016; Accepted 23 January, 2017

The aim of this paper was to assess the Work Place Programme (WPP) for HIV/AIDS in Namibia. The methodological framework consisted of the following stages: (i) defining the target population, (ii) clustering the producers, (iii) applying the selection criteria and (iv) applying the eligibility criteria. Data analysis involved descriptive and inferential statistical procedures, as well as the triangulation of data. The study was conducted in Namibia, in the capital city of Windhoek and the city of Swakopmund, which is a tourist hub between the desert and the coastline. The results show that of the 108 companies sampled, none had a WPP in place, while a few had some undocumented HIV/AIDS activities. Companies indicated that WPP implementation strategies had been inactive for long periods of time and that many HIV and AIDS activities were centered on World Aids Day. This was attributed to budgetary constraints; there is perception that such programmes are the responsibility of the government. This prevented such programmes from featuring in the business's strategic planning and not yet mainstreamed into company operations. This study suggested that effective HIV and AIDS policy need to integrate within the context of corporate social responsibility (CSR), is essential for adequate health care management in the tourism industry.

**Key words:** Policy, corporate social responsibility (CSR), Work Place Programme (WPP), HIV/AIDS, Namibia.

## INTRODUCTION

Namibia has achieved and maintained considerably sound economic management, good governance and respect for human rights, with a well-functioning physical infrastructure, a market economy, rich natural resources, and a relatively strong public administration, all of which add value and give the nation a competitive advantage (World Bank, 2013). However, social and economic challenges remain obstacles to the development, for example, high income inequality (with an estimated Gini coefficient of 0.59), high unemployment rate (at 29%),

and a high incidence of poverty (with an estimated 21% of the population consuming less than \$1.25/day) (World Bank, 2013) are attributed to these economic challenges. In addition, HIV and AIDS is a major social concern. The estimated percentage of adults (aged 15 to 49) living with HIV and AIDS in Namibia dropped from 19.54 in 1999 to 16% in 2014; however, the number of people living with HIV and AIDS increased from 180 000 in 2013 to 220 100 in 2014, which is a 22.27% increase (Indxmundi, 2015). The implication is that within the Namibian tourism

\*Corresponding author. E-mail: [tmogos@nust.na](mailto:tmogos@nust.na).

sector, 3840 employees are HIV positive, of which 2266 are female. With Namibia being upgraded to upper-middle income status, the funding received from the International Development Community has also been reduced (NSA, 2015).

HIV and AIDS is the single greatest threat to the development of Namibia. Its impact is felt at every level of society, affecting individuals, families and communities—the basic building blocks of social and economic development. HIV and AIDS threaten the education and psychosocial development of children, as it deprives them of their parents, caregivers, teachers and ultimately, their future. Moreover, as the infected become too ill to work, workplaces lose valuable human resources and expertise (Ministry of Health and Social Services, 2013:10).

With the reduction in funding from the international community towards the prevention of HIV and AIDS, ensuring the sustainability and productivity of tourism activities in Namibia requires the integration of workplace programmes (WPPs) within the context of corporate social responsibility (CSR). The International Labour Organisation (ILO, 2016) reported that workers in hotels and restaurants have a low rate of trade union membership due to the small size of enterprises and thus the labour force, with often paternalistic labour relations and the subcontracting of activities to other sectors. It is also widely recognized that the low attractiveness of the sector is responsible for the high labour fluctuation, with tremendous costs for employers and a shortage of skilled workers in the sector. As a result, CSR is a growing agenda in the tourism sector, with transnational companies having developed CSR policies as a unilateral declaration of intent formulated and conceived by management, whereby a responsible business should consider the effect of its activities on society and the environment (ILO, n.d.; ILO, 2012).

Knowledge about workplace initiatives, strategies, practices and interventions that work in real workplace settings to achieve good outcomes is yet to be comprehensively documented in South Africa. Good practices for achieving good outcomes have not yet been well documented, disseminated and scaled up. Good outcomes are successes that workplaces could achieve in addressing HIV and AIDS, as espoused in the “Recommendations Concerning HIV and AIDS and the World of Work, No. 200 (2010) and the ILO Code of Practice on HIV and AIDS and the World of Work. These recommendations include increased knowledge of HIV and AIDS, increased uptake of voluntary counselling and testing (HCT), increased uptake of antiretroviral therapy (ART), improved efforts for the prevention of mother-to-child transmission (PMTCT) of HIV, and the reduction of sexually risky behaviours, translating into reduced absenteeism and staff turnover, reduced occupational risk (PEP, PREP Universal), reduced costs (recruitment, treatment, precaution, TB supervision, training and lost

productive time) and voluntary medical male circumcision.

## METHODS AND MATERIALS

### Research area

The geographical scope of the study covered the selected research site of Namibia, specifically Windhoek and Swakopmund. The study area encompassed the public and private sector, including formal tourism industry workplaces, as well as informal tourism workplace settings. The study involved workplaces characterized by the ILO-supported implementation of HIV workplace initiatives, as well as workplaces with no ILO involvement.

### Design and approach

This was an exploratory-descriptive study involving both quantitative and qualitative approaches. The quantitative approach involved the process of obtaining quantifiable and verifiable evidence of the achievement of good outcomes. The qualitative approach involved the process of conducting repeated in-depth interviews with the same or different persons in each workplace in order to determine “what worked” in terms of achieving a particularly good outcome.

### Sampling

At the outset, the study involved a comprehensive assessment (solid, quantifiable and measurable evidence) of proven, innovative, effective and efficient HIV/AIDS workplace initiatives, strategies and practices that worked well in the achievement of successful outcomes, aimed at determining eligibility for inclusion in the study. Of a total population of 1066 tourism establishments, a sample of 108 (10.5%) was selected as being representative.

### Approach to the selection of eligible workplaces

The site studies were preceded by a situational analysis conducted by means of a desktop review to determine eligible workplaces to be included in the research. The desktop review involved the assessment of all available evidence obtained from data sources such as project evaluations, monitoring systems, surveys, interviews, policies and programmes, and other means of documenting results.

### Eligibility criteria

To obtain and assess evidence on which to base workplace eligibility, a situational analysis tool was used to apply criteria for the evaluation of good outcomes, based on the following key good outcomes (ILO, 2012):

- GO1A: Increased male and female employee knowledge/education on HIV and AIDS
- GO1B: Assessment of male and female employee knowledge/education on HIV and AIDS
- GO2: Increased uptake of HCT/ VCT by men and women
- GO3: Reduction in risky behaviour by men and women
- GO4: Increased uptake of voluntary male medical circumcision (VMMC) services
- GO5: Reduced occupational risk among men and women
- GO6: Increased uptake of ART and treatment services by men and

**Table 1.** Respondents by employment status within the workplace/organization and gender.

Level within workplace/organization	Male (%)	Female (%)	Total (%)
Owner/partner	33.3	22.4	26.4
Senior management	30.8	47.8	41.5
Middle management	5.1	7.5	6.6
Junior management	2.6	4.5	3.8
Supervisor	15.4	10.4	12.3
Other	12.8	7.5	9.4
Total	100.0	100.0	100.0

women

GO7a: Reduced stigma and discrimination towards PLHIV among men and women

GO7b: Reduced employment-related discrimination among men and women

GO8: Impact on family/community

GO9a: Reduced absenteeism and staff turnover among men and women

GO9b: Reduced workplace costs

GO9c: Increased productivity among men and women

GO10: Increased uptake of PMTCT by women.

#### Data analysis

Thematic content analysis was done and appropriate data analytical procedures were applied for both the quantitative and qualitative data collected, according to the outcome indicators, through the use of appropriate statistical software.

A gender perspective was adopted in the analysis of the data to ensure an in-depth understanding of the impact of gender in terms of the socio-economic, cultural and political dynamics, and also to minimize the possibility of research results being based on inaccurate assumptions and stereotypes.

#### Analysis of quantitative data

1. For quantitative data in general, the analysis involves more descriptive and inferential statistical procedures.
2. Where appropriate, the data collected was disaggregated by gender, age, epidemic type, economic sector, worker category, educational level, etc. in order to ensure an in-depth understanding of differentiated impacts.
3. Attitude towards HIV was measured based on the scale.
4. Demographics, socioeconomic factors, components of the intervention programmes and regional versus national programme implementation served as the explanatory variables.

#### Triangulation of data and analytical report

In this study, the purpose of triangulation was to establish the validity of the findings, that is, to ensure that they accurately reflected the situation and were supported by evidence. This study involved data and methodological triangulation.

#### Data triangulation

This encompassed the various sources of information in this study, namely stakeholders outside the workplace ('conductive environment'), key informants (inside the workplace), and general

employees (programme recipients/participants). In-depth interviews were conducted with each of these groups to gain insight into their perspectives on the programme outcomes. During the analysis stage, feedback from the stakeholder groups was compared to determine areas of agreement (as well as areas of divergence).

## RESULTS AND DISCUSSION

### Biographical information

Of the 108 companies interviewed, only five were found to have some type of HIV/AIDS activities (not even WPPs) in place. Therefore, this research focuses only on those respondents not able to implement any HIV/AIDS activities or WPPs.

Table 1 shows that 41.5% of respondents were in a senior management position at their workplace, while approximately 3% were in junior management. More males (33.3%) were business owners than females (22.4%), while more females (47.8%) were in senior management positions than males (30.8%). Although, the expectation is for the respective owners or senior managers to implement some sort of HIV and AIDS programme, this is not the case.

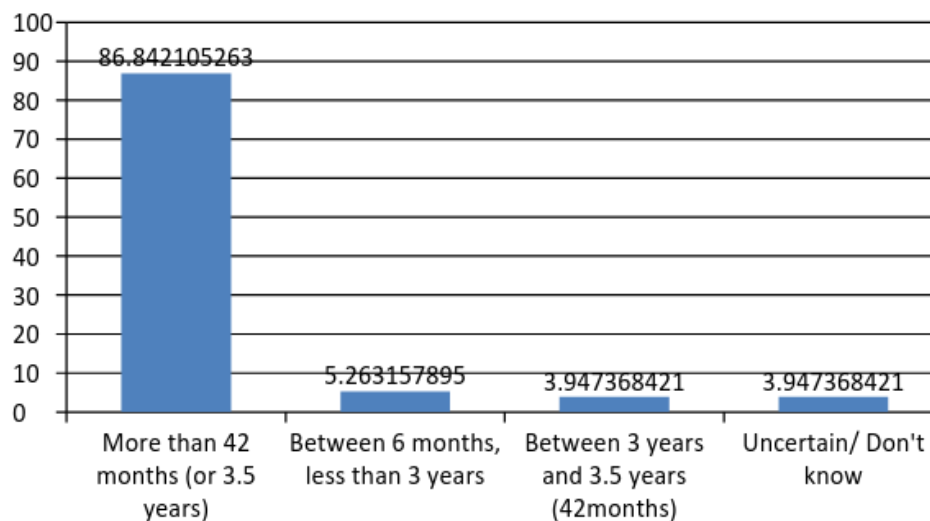
In a study by PricewaterhouseCoopers (2013), 61% of the 200 private companies that participated identified the loss of a skilled workforce as the greatest threat to growth and expansion, with little mention made of HIV and AIDS, despite the fact that 5% of those same companies considered HIV and AIDS to be a challenge over the preceding 12 months. HIV and AIDS is no longer only a long-term threat- several businesses indicated that the immediate effects of the disease were already visible on the market and available resources. Companies with more experience in responding to and tracking the disease are able to see the effect of HIV and AIDS quite clearly, for instance through reduced productivity, loss of man-days, higher benefit claims and funeral benefits, lost investments in terms of training and recruitment, and of course, higher treatment costs. Despite the tourism industry's high level of personal interaction and associated risk, business owners and managers are still underestimating the importance of implementing WPPs for HIV and AIDS.

As indicated in Table 2, the majorities of the



**Table 2.** Respondents by highest level of education and gender.

Highest education level	Male (%)	Female (%)	Total (%)
Secondary/high school	28.2	43.3	37.7
Certificate/diploma	46.2	41.8	43.4
Bachelor's degree/professional degree	20.5	11.9	15.1
Postgraduate degree (Hons/Master's/Doctorate)	5.1	3.0	3.8
Total	100.0	100.0	100.0

**Figure 1.** Respondents by duration of existence of workplace.

respondents were certificate/diploma graduates, and therefore expected to have a better understanding of, and consideration for, the consequences of ignoring WPPs.

Approximately, 43% of respondents indicated a certificate or diploma as being their highest level of education. More females (43.3%) than males (28.2%) had completed secondary or high school, while approximately 11% of females held a bachelor's degree or professional degree.

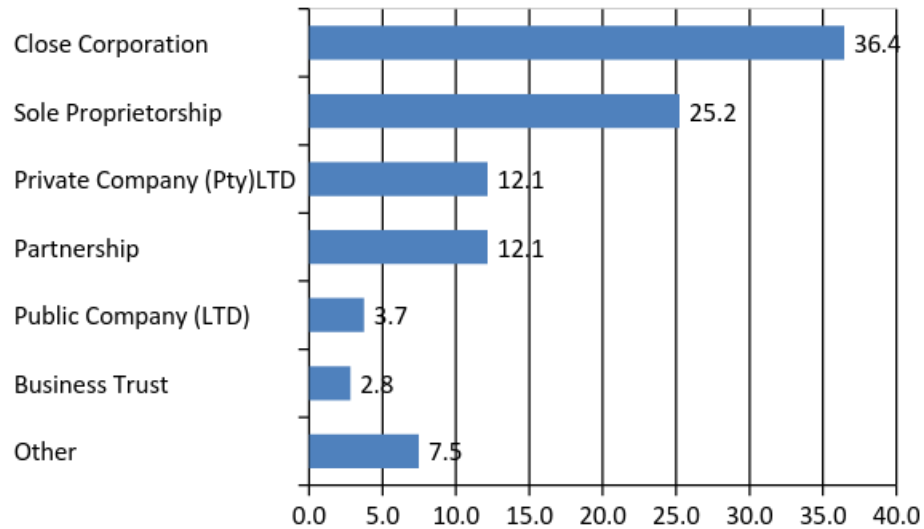
### Workplace characteristics

Figures 1 and 2 present the sampled workplaces in terms of duration of existence and business form. The results show that approximately 86% of respondents indicated that their workplace had been in existence for longer than 42 months (or 3.5 years), while 36.5% of respondents reported that their workplace was a close corporation. One would expect that a business that has been in existence for a long period of time, and which is operating as a close corporation, would have a solid WPP in place, but this is not the case, and business growth is being crippled as a result. For example, the estimated

percentage of adults (aged 15 to 49 years) living with HIV and AIDS in Namibia was reduced from 19.54% in 1999 to 16% in 2014; however, the number of people living with HIV and AIDS increased from 180 000 in 2013 to 220 100 in 2014- an increase of 22.27% (Indexmundi, 2015). This reflects a worrying figure of 3840 HIV-positive employees in the tourism sector, 2266 of which are female (Figure 3).

Aggravating matters further is the fact that Namibia has been upgraded to upper-middle income status, meaning a reduction in the funding received from the International Development Community (NSA, 2013). This will continue to pose a challenge in terms of reducing the impact of HIV and AIDS on the general economy. Table 3 shows that 40% of respondents indicated the number of full-time employees at their respective workplaces as being between 10 and 49, while 7% reported having more than 100 staff members. This is a clear indication of the importance of WPPs.

As indicated in Figure 4, about 64% of respondents indicated that they were uncertain about, or did not know, or preferred not to disclose information on, the gross annual turnover of the business. However, 12.1% of respondents indicated an annual turnover of more than



**Figure 2.** Respondents by legal entity of business.

**Table 3.** Respondents by number of full-time employees.

Number of full-time employees	Full-time employees			Part-time employees		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
None	5.3	1.5	2.9	52.6	46.3	48.6
Up to 4 employees	18.4	19.4	19.0	15.8	32.8	26.7
5-9 employees	23.7	28.4	26.7	13.2	7.5	9.5
10-49 employees	39.5	40.3	40.0	5.3	6.0	5.7
50-99 employees	5.3	6.0	5.7	5.3	1.5	2.9
100-499 employees	7.9	3.0	4.8	7.9	6.0	6.7
Uncertain/don't know/unable to answer	0.0	1.5	1.0	100.0		
Total	100.0	100.0	100.0			

N\$1-5 million (equivalent to US\$0.33-0.67 million, at an exchange rate of US\$1 to N\$15). The cost of prevention and care can offset the direct and indirect costs of HIV and AIDS. To be competitive and profitable in the tourism industry, business leaders need to be aware of the realities of HIV/AIDS, and how the epidemic will affect their revenue, profits and their reputation. Udeh et al. (2014:249) examined HIV/AIDS awareness and its impact on profitability by means of a multisectoral cost benefit analysis, conducted in King William's Town in the Eastern Cape Province of South Africa. The key findings of that study were as follows: (i) the employees of business firms did not have sufficient awareness of the impact of HIV/AIDS on their businesses, families and communities; (ii) there were no WPPs in place to minimize the impact of HIV/AIDS; and (iii) there were no mechanisms in place to assess employee absenteeism and state of health, the loss of key personnel, the costs incurred in terms of recruitment and training, and the

ultimate effect on the profitability and sustainability of the business.

### Knowledge and perceptions of HIV/AIDS

Figure 5 shows that 53.3% of respondents strongly agreed that they were comfortable talking to another staff member about HIV/AIDS. Udeh et al. (2014) argued that many efforts have been directed towards the implementation of successful HIV and AIDS WPPs, improving the knowledge base on what is effective or what works in practice within workplaces. However, well-documented evidence of good outcomes or positive changes brought about by these interventions is still lacking.

Approximately, 92% of respondents reported that over the past year, they had not participated in any activities focused on organizational membership. More than 80%

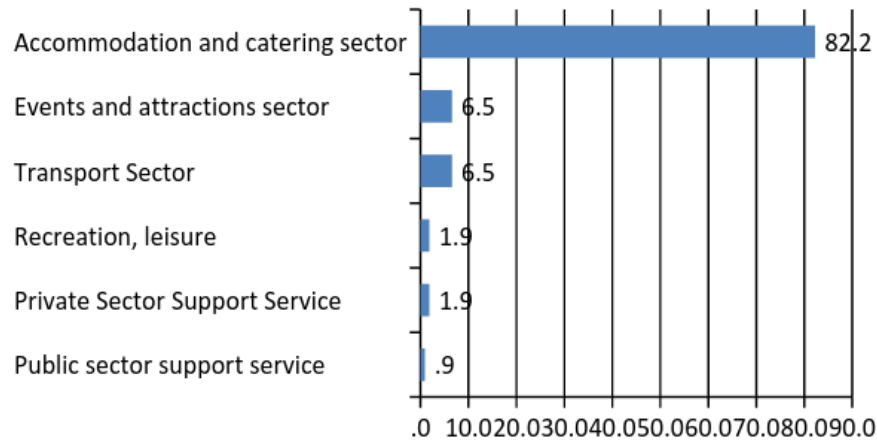


Figure 3. Respondents by tourism sector.

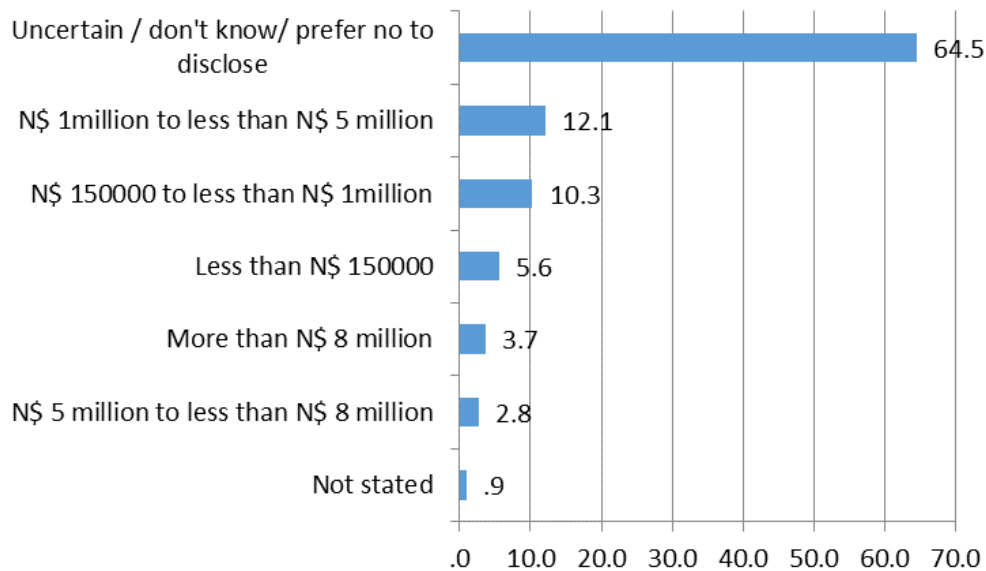


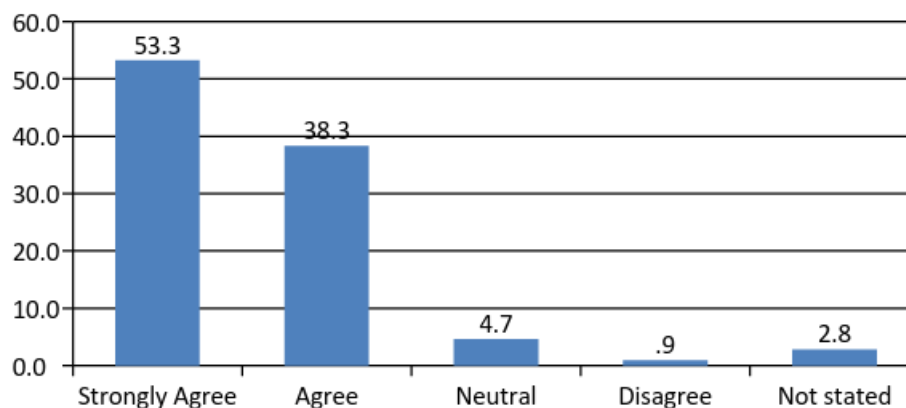
Figure 4. Respondents by gross annual turnover.

of respondents reported that they had never volunteered for any activities, nor had they attended a rally, march, play, education event or workshop (Table 4). A previous study by PricewaterhouseCoopers (PWC, 2013) confirmed that visible participation by management in prevalence testing activities is normally considered a clear indication of management acknowledging that HIV and AIDS is also a personal concern at that level.

Table 5 shows that 66% of respondents reported that they themselves are primarily responsible for preventing new HIV infections, followed by their partner (59.4%), the government as third and fourth most responsible entity (31.1 and 33%, respectively), and then the employer (32.1%). Within the Namibian tourism industry, employment projections are expected to rise to 53,000

jobs (6.7% of total employment) in 2024 (WTTC, 2014; WTTC, 2015). However, if appropriate workplace policies and programmes are not in place, and if HIV and AIDS responses are not mainstreamed into all operational aspects of the business, including risk management, strategic and business planning, as well as budgeting, it is envisaged that the infection rate could grow in equal proportion to the job growth rate, having dire consequences for Namibia’s economy. To ensure the sustainability and productivity of tourism activities, this research study suggests that the integration of WPPs within the context CSR could have a mitigating effect in this regard.

More than 94% of respondents agreed that they were aware of their HIV status and that there were



**Figure 5.** Respondents by level of comfort in talking to another staff member

**Table 4.** Respondents by participation in activities.

In the past year, have you participated in any of the following activities?	Yes (%)	No (%)	Total (%)
Attending a community meeting	28.3	71.7	100.0
Participating in membership of the organization	7.6	92.4	100.0
Volunteering for activities	16.0	84.0	100.0
Attending a rally, march or event	14.2	85.8	100.0
Attending workplace meeting	29.2	70.8	100.0
Attending a play or educational event	16.0	84.0	100.0
Attending a workshop	17.0	83.0	100.0
Giving someone advice	47.2	52.8	100.0
Caring for someone suffering from HIV/AIDS	44.3	55.7	100.0
Helping the family members of someone suffering from HIV/AIDS	43.4	56.6	100.0
Helping the family members of someone who has passed away from AIDS	41.5	58.5	100.0

**Table 5.** Respondents by entity most responsible for preventing new HIV infections.

Entity most responsible for preventing new HIV infections	Most responsible (%)	2nd most responsible (%)	3rd most responsible (%)	4th most responsible (%)	5th most responsible (%)	Total (%)
Self	66.0	29.2	1.9	0.9	1.9	100.0
Partner	22.6	59.4	5.7	8.5	3.8	100.0
Employer	0.9	19.8	28.3	18.9	32.1	100.0
Government	2.8	7.5	31.1	33.0	25.5	100.0
AIDS organizations/NGOs	6.6	8.5	25.5	30.2	29.2	100.0

occupational health and safety procedures at their workplace to address the risk of transmission. Approximately 84% of respondents agreed that they should care for infected staff members; while 84% disagreed that the workplace should train or promote infected persons (Tables 6 and 7).

#### Environmental 'conductive factors'

More than 50% of respondents agreed on the importance of political leaders and tourism business leaders publicly recognizing the extent and effects of HIV and AIDS. Approximately, 33% of respondents strongly disagreed

**Table 6.** Respondents by attitude towards HIV.

Attitude towards HIV	Agree (%)	Disagree (%)	Not Sure (%)	Total (%)
Restaurant owner/caterer	55.7	22.6	21.7	100
Care for infected staff member	84.0	7.5	8.5	100
Have protected sex with infected person	37.7	56.6	5.7	100
Train or promote infected person	12.3	84.0	3.8	100
Keep status secret	53.8	42.5	3.8	100
Keep staff separated for fear of infection	24.5	71.7	3.8	100
Marry an infected person	14.2	68.9	17.0	100
Allowed to work if infected but not sick	73.6	22.6	3.8	100
Know HIV status	94.3	4.7	0.9	100
Occupational health and safety procedures to address risk of transmission	98.1	1.9	0.0	100

**Table 7.** Respondents by perception of HIV and AIDS policy-making.

Perception of HIV and AIDS policy-making	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Total (%)
Political leaders are committed to controlling the spread of HIV	33.3	23.5	10.8	27.5	4.9	100.0
Tourism business leaders are committed to controlling the spread of HIV	5.0	31.7	18.8	37.6	6.9	100.0
It is important that political leaders publicly recognise HIV/AIDS	3.0	18.8	19.8	51.5	6.9	100.0
It is important that tourism business leaders publicly recognise HIV/AIDS	3.0	25.0	17.0	50.0	5.0	100.0
Government allocates sufficient funds to control the spread of HIV	4.0	25.7	25.7	39.6	5.0	100.0
Tourism industry allocates sufficient funds to control the spread of HIV	5.9	44.6	21.8	25.7	2.0	100.0
Community-based organisations assist the country's tourism industry employees and their families in terms of HIV and AIDS	5.9	52.5	25.7	14.9	1.0	100.0
Government supports tourism industry employees	3.0	37.6	29.7	28.7	1.0	100.0

that political leaders are committed to controlling the spread of HIV, while 52.5% disagreed that community-based organizations are assisting the country's tourism employees and their families in terms of HIV and AIDS. Approximately, 44% of respondents also disagreed that the tourism industry allocates sufficient funds to control the spread of HIV and AIDS.

Table 8 shows that 71.3% of respondents considered legislation to be a requirement for the implementation of WPPs. More than 61% disagreed that the workplace suffers from "information fatigue" due to a constant bombardment of messages on the topic, and that the private sector is not benefiting and should not implement WPPs. More than 53% disagreed that the demand for services by employees is a concern, and that the "privileged" status of HIV and AIDS in relation to other

illnesses is preventing the implementation of WPPs. About 65% agreed that workplace capacity/resources is a requirement for the management of HIV and AIDS. More than 50% agreed that employees seek help elsewhere once affected, and that since government and civic society are benefiting, they should be implementing such WPPs, with the cost thereof being carried by government or civic society.

#### **Uptake of a WPP for HIV and AIDS in the tourism business/workplace**

Table 9 presents the sources of information that the respondents personally found useful in understanding HIV and AIDS, with more than 80% identifying friends

**Table 8.** Respondents by perception of workplace factors that may have negatively impacted on the uptake of a WPP for HIV and AIDS in the tourism business/workplace.

<b>Workplace factors that may have negatively impacted on the uptake of a WPP for HIV and AIDS in the tourism business/workplace</b>	<b>Strongly disagree (%)</b>	<b>Disagree (%)</b>	<b>Neutral (%)</b>	<b>Agree (%)</b>	<b>Strongly agree (%)</b>	<b>Total (%)</b>
Knowledge about HIV/AIDS is prerequisite for the implementation of a WPP	3.2	25.5	16.0	51.1	4.3	100.0
WPP for HIV/AIDS does not address holistic wellness	3.2	29.5	18.9	43.2	5.3	100.0
Buy-in from workplace management must relate to workplace profitability	4.2	30.5	17.9	45.3	2.1	100.0
Buy-in from workplace management must relate to workplace productivity	0.0	25.3	14.7	55.8	4.2	100.0
Legislation is required to implement WPPs	1.1	12.8	8.5	71.3	6.4	100.0
Workplace capacity / resources is required for the management of HIV/AIDS	1.1	23.2	7.4	65.3	3.2	100.0
WPPs do not qualify for tax incentives / discounts	4.2	40.0	16.8	35.8	3.2	100.0
Status disclosure, stigma and/or discrimination in relation to HIV/AIDS in the workplace are factors impacting on decision-making	1.1	40.4	13.8	41.5	3.2	100.0
Brand / image association with HIV is a concern	3.2	42.1	8.4	43.2	3.2	100.0
Demand for services by employees is a concern	4.3	53.2	11.7	28.7	2.1	100.0
Access to workplace support services is a concern	2.1	41.1	10.5	45.3	1.1	100.0
Access to HIV/AIDS services for part-time / seasonal / contract employees is a concern	2.6	36.8	18.4	39.5	2.6	100.0
Workplace employees seek help elsewhere once affected	5.4	18.3	21.5	50.5	4.3	100.0
Past experiences with HIV/AIDS WPP initiatives have a negative impact on decision-making	7.5	47.3	14.0	30.1	1.1	100.0
Workplace suffers from "information fatigue" due to constant messages	14.9	61.7	11.7	11.7	0.0	100.0
Privileged status of HIV/AIDS in relation to other illnesses prevents the implementation of WPPs	8.7	58.7	13.0	19.6	0.0	100.0
Private sector not benefiting, should not be implementing WPPs	9.8	67.4	7.6	15.2	0.0	100.0
As government and civic society are benefiting, they should be implementing such WPPs	10.8	26.9	6.5	53.8	2.2	100.0
Cost of WPPs should be carried by government or civic society	3.2	21.3	10.6	59.6	5.3	100.0
Private sector does not have a role to play in financing WPPs	5.3	55.3	10.6	25.5	3.2	100.0

and doctors/nurses/clinics, and more than 70% identifying television, newspapers, magazines and expert talks/speakers as useful sources of information in understanding HIV/AIDS.

### Conclusions and recommendations

The results of the workplace programme performance assessment initially appeared impressive, until the discussion focused on the issue of implementation. Despite the sense of goodwill and good intentions, the challenge lies in the implementation. Sporadic responses

that are poorly planned and budgeted for typically affect policy implementation. It is therefore crucial that the policies that are developed should take into consideration the necessary resources and systems that need to be implemented, and these should be financed accordingly.

Support from the executive office was cited as a key success factor, and business decision-makers are strongly encouraged to start providing the necessary support and leadership to expedite implementation. There is a need for the increased availability of affordable medical care options for all levels of staff, in instances where employees are found to be HIV positive. The value of "knowing your company's status", based on

**Table 9.** Respondents by sources of information personally found useful for understanding HIV/AIDS.

Sources of information personally found useful for understanding HIV/AIDS	Not applicable (%)	Useful (%)	Neutral (%)	Not useful (%)	Total (%)
TV	3.8	74.5	5.7	16.0	100.0
Radio	10.4	60.4	7.5	21.7	100.0
Newspaper	1.9	74.5	13.2	10.4	100.0
Magazine	6.6	70.8	12.3	10.4	100.0
Leaflet / booklet	4.8	68.3	10.6	16.3	100.0
Posters	8.6	67.6	10.5	13.3	100.0
Billboard	6.7	63.8	15.2	14.3	100.0
Signs on Busses / Taxis	19.2	33.7	15.4	31.7	100.0
Painted Walls / Murals	16.3	44.2	12.5	26.9	100.0
Drama or plays	11.4	55.2	11.4	21.9	100.0
Music concerts or entertainment events	14.3	51.4	16.2	18.1	100.0
Payslip Messages	46.7	16.2	5.7	31.4	100.0
Cell phone	24.8	40.0	1.9	33.3	100.0
Information Boards	6.7	65.7	14.3	13.3	100.0
Expert talks/ speakers	6.7	71.4	13.3	8.6	100.0
Friends	4.8	82.9	5.7	6.7	100.0
Doctors/ Nurses/ Clinics	3.8	81.0	9.5	5.7	100.0
Movies / DVE's	11.4	59.0	13.3	16.2	100.0
Other	60.8	33.3	5.9	0.0	100.0

information provided by companies that have undertaken prevalence testing, is evident. Some companies that were pioneers in prevalence surveillance have actively promoted it, encouraging other companies to do the same.

Misperceptions still exist about the disease not being a threat to companies, for various reasons. In several instances, this is coupled with the perception that it is the government's responsibility to address HIV and AIDS. These misperceptions need to be dispelled through improved information dissemination techniques that lay out the threat of the disease in a manner that the business would appreciate. Once again, conducting prevalence tests could yield surprising results.

Many companies admitted that the WPP implementation strategies had been inactive for a long period of time and that many HIV and AIDS activities are centered on World Aids Day. This was mostly attributed to budgetary constraints, as well as lack of HR capacity. Moreover, it was found that in terms of the many business concerns and risks that business leaders need to take into consideration, HIV and AIDS might not be seen to compete favourably. This issue therefore still does not feature in a business's strategic planning, nor is it appropriately mainstreamed into company operations.

The Ministry of Environment and Tourism (MET, 2013), acknowledged that: (i) HIV and AIDS directly affects the health of a large number of people in society and reduces the overall health status and wellbeing of the nation; and (ii) HIV and AIDS impacts negatively on the management

of natural resources, thereby impacting negatively on profitability and the community. To tackle the above-mentioned challenges, Namibia crafted its HIV and AIDS policy. However, since the launch of the policy in 2011, the MET has failed to conduct Monitoring and Evaluation (M&E) assessments with specific indicators. In addition to this, in the evaluation of the NDP-3, government acknowledges that the key reasons for failing to achieve the required rate of success have been, amongst others, a lack of execution and accountability, and the spreading of efforts and resources too thinly. These deficiencies are compounded by bottlenecks of absence of a formalized process for implementing, monitoring and evaluating the necessary plans.

The results of the survey show that the tourism sector is failing to respond to the challenge of HIV and AIDS in the workplace. It is also evident, however, that the response is yet to be mainstreamed into company operations in a manner that proves that HIV and AIDS is being treated seriously, and as a business concern.

The study found a general lack of workplace HIV and AIDS programmes in the Namibian tourism sector. This was mostly observed in SMEs that failed to quantify the cost of HIV and AIDS, as well as those that did not acknowledge HIV and AIDS as a business challenge. The lack of programmes may therefore be the result of incapacity to carry out a cost benefit analysis of having HIV and AIDS programmes in place. Since the Namibian tourism sector failed to calculate the costs of HIV and AIDS, they do not realize the cost savings of having HIV

and AIDS programmes in place. As a result, they generally perceive the programmes as costly to business. In addition to a lack of necessary know-how and skills, there is also a general misconception that HIV and AIDS is a health issue that should be dealt with in the health sector. There are also some who indicated willingness to offer programmes, but lack the necessary know-how and technical skills.

### Conflict of interest

The authors declare that there is no conflict of interest.

### REFERENCES

- International Labour Organisation (ILO) (2016). Sectoral brief: Hotels, catering and tourism: Social dialogue. Available at: [http://www.ilo.org/wcmsp5/groups/public/---ed\\_dialogue/---sector/documents/briefingnote/wcms\\_162194.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/briefingnote/wcms_162194.pdf)
- International Labour Organisation (ILO) (2012). HIV and AIDS: Guide for the tourism sector. Geneva: ILO.
- Indexmundi (2015). Data graph. Available at: <http://www.indexmundi.com/g/g.aspx?v=35&c=wa&l=en>
- Ministry of Health and Social Services (2014). Report of the 2013 National HIV and AIDS Workplace Programmes Survey. Windhoek: Directorate of Special Programmes. Available at: <https://searchworks.stanford.edu/view/11815746>
- Namibia Statistics Agency (NSA) (2015). The Namibia Labour Force Survey 2012 Report. Windhoek: NSA. Available at: [http://nsa.org.na/microdata1/index.php/catalog/9/related\\_materials](http://nsa.org.na/microdata1/index.php/catalog/9/related_materials)
- Price waterhouse Coopers (PWC) (2013). Business decision makers' survey on HIV and AIDS: The boardroom speaks. Available at: [https://www.pwc.com/en\\_NA/na/assets/pdf/business-decision-makers-survey-on-hiv-and-aids-2013.pdf](https://www.pwc.com/en_NA/na/assets/pdf/business-decision-makers-survey-on-hiv-and-aids-2013.pdf)
- Udeh C, Smith W, Shava H (2014). HIV/AIDS awareness and its impact on the profitability of business firms in developing nations. *Mediterr. J. Soc. Sci.* 5(7).
- World Bank (2013). *Engendering development through gender equality in rights, resources, and voice*. New York: Oxford University Press.
- World Travel and Tourism Council (WTTC) (2014). *Travel and tourism economic impact: Namibia-UK*. London: Oxford Economics.
- World Travel and Tourism Council (WTTC) (2015). *Travel and tourism economic impact 2015: Namibia*. London: WTTC.



*Full Length Research Paper*

# Factors associated with HIV testing among female sex workers in Botswana

Keamogetse Setlhare\* and Gorata Duduzile Manyeagae

Department of Statistics, Faculty of Social Sciences, University of Botswana, Gaborone, Botswana.

Received 11 November, 2016; Accepted 21 December, 2016

Botswana continues to have a high level of HIV prevalence, with about 17% of the population living with HIV AIDS (BAIS IV, 2013). Female sex workers are classified among the most at risk population group in the country. However, sub-national disaggregated data on new infections are not available. Hence, there is a need to focus great attention on other proxies of infection. The present study examines predictors of HIV testing among female sex workers (FSWs) in Botswana. The FSWs were recruited into the study using the time-location cluster sampling method (TLS) to collect data on prevalence and incidence of HIV and other STIs and their risk factors for HIV. The logistic regression analysis was performed to estimate crude odds ratios and identify the factors associated with having an HIV test among the FSWs. HIV prevalence among sex workers in Botswana was found to be 3 times higher than in the general population. Analysis of the results shows that the sex workers most likely to seek HIV testing were young women with no children. The odds of testing for HIV were almost 4 times more for FSWs who had first sex older as compared to the odds of testing for those who are 17 to 19 years old. Lack of or inconsistent condom use and currently having symptoms of STIs such as lower abdominal pain and genital ulcerations were also factors associated with HIV testing. Results further show that FSW hold little discrimination and stigma related attitudes towards PLWA. FSWs have little participation in the HIV prevention, treatment and care efforts currently accessed by the general population. It is recommended is that this framework should also be extended to FSW's and their clients in order to curb HIV and STIs.

**Key words:** Female sex workers, HIV testing, Botswana, prevalence, associated factors, odds ratio.

## INTRODUCTION

According to WHO (2013), a total of 95 million people had HIV in 119 countries which provided results in 2010. Despite these global strides, Africa remains the most disproportionately affected by HIV, especially sub-Saharan African region which was a host to 70% of the all new infections in 2012 with women accounting for

approximately 57% of all people living with HIV. Despite the increase in the supply of antiretroviral (ARV) drug, the epidemic continues to spread more rapidly in sub-Saharan Africa (UNAIDS, 2012). Botswana with a population of 2.2 million in 2011, ranks among the countries most affected by HIV. Prevalence in the general

\*Corresponding author. E-mail: setlhark@mopipi.ub.bw.

population aged 18 months to 64 years was estimated at 17.6% in 2008 and has since increased to 18.5% in 2013, with women having a higher estimated prevalence of 20.8% than men at 15.6% (Central Statistics Office (CSO), 2009).

In most parts of sub-Saharan Africa, less than one in 10 people know their HIV status. HIV testing rates are also consistently lower among men than women, and men tend to have lower CD4 cell counts when accessing treatment (Gupta, 2000). According to UNAIDS (2012), coverage of HIV testing and counselling is low in most parts of the world, especially among adolescents and key populations such as female sex workers, men who have sex with other men and injecting drug users. UNAIDS estimates indicate that female sex workers are 13.5 times more likely to be living with HIV than other women globally (UNAIDS, 2012). In Botswana, female sex workers accounted for 12.5% of all new infections and HIV prevalence among this, most at risk group is estimated at 61.9% (Ministry of Health, 2013). This group represents the most at risk part of the population and changing their HIV-risky sexual behaviours is crucial in declining the pandemic. McGarridge et al. (2005) found out that high risk sexual and drug injection behaviours are the main factors associated with HIV testing in Britain, especially among female sex workers. The same findings were supported by Miller et al. (1996) as they stated that "...having more than one sex partner and never using a condom in the past year were strong predictors of testing". Studies in different countries have shown that HIV testing among female sex workers is still poor (Matovu and Makumbi, 2007; Machekano et al., 2000; WHO/UNAIDS/UNICEF, 2007; Kalichman, 2003; Weiser et al., 2006). Findings from recent demographic and health surveys in the 12 countries (Botswana, Cameroon, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Nigeria, Democratic Republic of Congo, United Republic of Tanzania and Uganda) show that in half of the 12 countries, not more than 10% of female sex workers had been tested for HIV and had received their results in 2005 (WHO/UNAIDS/UNICEF, 2007). A report by World Health Organisation (WHO, 2013) continued to point at stigma and discrimination, fear of receiving an HIV-positive status, lack of confidentiality, long distances to Voluntary Confidential HIV testing (VCT) sites, and long delays in returning HIV test results as factors discouraging people to access traditional VCT systems for testing, prevention and treatment, hence this fuels the cycle of new infections, especially among female sex workers.

Babalola et al. (2005) pointed out that among Nigerian female sex workers, readiness for testing was associated with knowledge of HIV, knowing a source of VCT, perceived risk and having discussed condom use for prevention. Knowing that healthy looking people can be infected was also associated with HIV testing. In China, HIV testing remains low in Southwest China, especially

among female sex workers despite the recognized importance of HIV testing in prevention, care and treatment. Millions of female sex workers were found to play a critical role in China's escalating HIV epidemic. Hong et al. (2012) revealed in their study that among the 48% of female sex workers who ever took HIV testing, older age, less education, working in higher-income commercial sex venues and better HIV knowledge were associated with HIV testing. They further indicated that those who never took HIV testing were more likely to engage in high-risk behaviours including inconsistent condom use with clients and stable partners. A study carried out in Iran showed that FSWs are the second most affected sub-population by HIV and only 27.5% had tested in the past year. Another study by Shokoohi et al. (2016) showed that FSWs who perceived themselves at risk of HIV had received free condoms and started sex work at an older age and those who knew an HIV testing site had significant higher chance of having a recent HIV test result. Some studies confirmed that as compared to those who had been tested, individuals who were not tested for HIV demonstrated significantly greater AIDS related stigmas; showing greater shame, guilt and social disapproval to people living with HIV (Kalichman and Simbayi, 2003). Others found out that transactional sex, gender-based violence, substance abuse and socio-economic disadvantaged were factors associated with HIV testing among women in Soweto (Dunkle et al., 2004)

Although, studies elsewhere have identified the barriers to accessing VCT, this study characterises the factors associated with HIV testing among female sex workers in Botswana. Understanding these factors may help improve HIV testing policy and scale up testing among female sex workers or develop effective programs, specifically targeted at this high risk group.

## MATERIALS AND METHODS

The study uses secondary data from a cross-sectional population-based study of 950 female sex workers conducted in three districts of Gaborone, Kasane and Francistown with samples sizes of 410, 130 and 410 subjects, respectively. The study was part of the 2012 Botswana Biological and Behavioural Surveillance Survey (BBSS) baseline study to collect data on prevalence and incidence of HIV and other STI's and the risk factors for HIV among the FSWs, men who have sex with other men and people injected with drugs.

The time-location cluster sampling method (TLS) was adopted to recruit the female sex workers into the study. TLS is a form of cluster sampling that contains dimensions of both time and location. First, a mapping exercise of all venues where FSWs solicited clients in the urban centres of each of the three districts was used to create a time location sampling frame. The mapping team consisted of 10 mappers (active FSW peer educators in the different districts) and a supervisor. TLS clusters were selected using probability proportionate to size with a fixed number of FSWs recruited from each cluster. The cluster size was 10, and 37 clusters were selected in each district in order to reach the sample size of 370.

When the estimated number of FSWs in a district was less than the sample size of 370, as in Kasane, a 'take-all' approach was

used in which all FSWs were recruited for the survey. During the second stage, all or a subsample of randomly selected population members who appeared at the site during a designated time interval of fixed length (in this case 4 hours) were interviewed. The selection method was found to be more representative because all members of a target population access the locations at some point. Secondly, TLS is a probability sampling method, because all population members have a non-zero chance of selection as long as the TLS frame is complete and because the selection probabilities can be calculated by taking the time and space dimensions into account. No eligible FSWs refused to participate in the study (Ministry of Health, 2013).

## Measures

For analysis, the outcome variable was: "Have you ever been tested for HIV?" which was asked the respondents. The independent variables were divided into behavioural factors and socio-demography variables. The dataset includes the following background information categorized as: age, nationality, level of education, marital status, occupation, sexual debut, age started sex work. Variables related to sex work and sexual practices included consistent condom use with sex partners (regular clients, boyfriends, married partners, casual partners, boyfriend not cohabiting), volume of clients per week, place of sex, alcohol consumption as well as sexually transmitted infections (STIs).

## Statistical analysis

The Statistical Package for Social Sciences (SPSS) version 24 computer software was used for the various analyses. The characteristics of FSW who ever had an HIV test were compared with those who never had an HIV test using Pearson's Chi-square test. The logistic regression analysis was performed to estimate crude odds ratios (OR, 95% confidence interval) and to identify the factors associated with having an HIV test among the FSWs. Multivariate logistic regression analysis was used for evaluating the effects of a select group of predictor variables on the probability of testing for HIV while controlling for other variables in the model.

## RESULTS

### Sample characteristics

A total of 948 female sex workers were sampled. The mean age was 29 years (Table 1). A relatively small portion (3.9%) of the respondents were either married or cohabiting, while the majority (57.9%) of the female sex workers were single and 26.5% have not cohabited boyfriends. The level of unemployment was fairly high, with 67.7% reporting not being employed and 15.9% having formal employment and another 15.7% reporting other types of employment. Senior/higher certificate and junior secondary education were reported as the highest education level attained at 46.5 and 41.2%, respectively. Close to half (47.6%) of the female sex workers have at least two children and 15.8% have no children. One third of the FSW's in the study started sex work at 21 years and below, while slightly more than one third was 27 years and above when they started sex work. About 50% of the FSW reported having a partner/boyfriend with

whom they have sex 5-6 times in the last month. A significant number of them solicit their clients mainly from bars, and also through the telephone, or on highways or hotels or at home. Some individuals reported physical violence (21.2%), forced sex (17.7%) or forced not to use condom (21.2%). Harassment or abuse by police was reported by 9.4% of the FSWs.

Table 2 shows the differences in demographic and behavioural characteristics between FSWs who ever tested for HIV and those who never tested for HIV. About two thirds of the sex workers are Batswana and the rest are Zimbabweans. The median age of FSWs is 28 years and 33.6% reported they started sex work at the age of 21 and below. There was significant difference in the ages of FSWs who tested and those who never tested. The FSWs who tested reported having one or more children as compared to those who never tested (85.8 vs. 70.7%). About 56% of the FSW who ever tested was single as compared to 66.7% of those who have not tested, while 11.2% of those who once married (divorced, separated and widowed) tested as compared to 15.5%. When compared with FSW who tested for HIV, FSWs who never tested were more likely to have consumed alcohol everyday in the past month, and they reported inconsistent use of condom or never using condom with regular clients (17.5 vs. 28.4%), and with boyfriend they do not cohabit with (37 vs. 57.9%). Self perceived risk for HIV was lower among FSW who tested as compared to those who have not tested (58.1 vs. 71.8%) and a lower percentage of them reported having 16 or more clients per week as compared to those who have not tested (61.3 vs. 69.6%). However, the two groups did not differ significantly in terms of educational status, age debut, age started sex-work and place of sex. The never tested FSWs were significantly more likely to report having lower abdominal pains (19.7 vs. 29.4%), foul smelling discharge (15.9 vs. 24.5%) and genital ulcerations (3.4 vs. 8.7%). There was significant difference between the two groups in their stigma and discrimination related attitudes with those who tested holding less stigma and discrimination attitudes than those who have not tested. Overall, FSW who ever tested were more likely to know where they can get advice on AIDS and get a confidential HIV test as compared to those who never tested.

The results of factors associated with having an HIV test are given in Table 3. Analysis of the multivariate results after controlling for the significant factors in univariate analysis show that those aged  $\leq 24$  (OR=7.203, CI: 1.06-49.07), having no children (OR=4.62, CI=0.82-26.02), those whose sexual debut is 17-19 (OR=0.25, CI: 0.08-0.81), consistent condom use every time (OR=0.22, CI: 0.08-0.60), currently having lower abdominal pains (OR=3.74, CI:1.36-10.29), currently having burning pain on urination (OR=0.09, CI=0.009-0.947) and genital ulceration (OR=4.969, CI=1.19-20.80) were all found to be factors significantly associated with having an HIV test, as well as the belief

**Table 1.** Socio demographic characteristics of female sex workers.

<b>Variable</b>	<b>Percentage</b>	<b>Frequency (n=948)</b>
<b>Nationality</b>		
Motswana	68.4	648
Zimbabwean	31.2	296
Other	0.3	3
<b>Age</b>		
<=24	25	237
25-29	32.2	305
30-34	24.6	233
35+	18.6	173
<b>Number of children</b>		
None	15.8	150
One	36.6	347
Two	28.7	272
Three and more	18.9	179
<b>Marital status</b>		
Married/cohabiting	3.9	37
Single	57.9	549
Once married	11.7	111
Boyfriend not cohabiting	26.5	251
<b>Education</b>		
Primary and lower	12.3	117
Junior	41.2	391
Senior/higher	46.5	440
<b>Age started sex work</b>		
<=21	33.6	319
22-26	31.9	302
27+	34.5	327
<b>Other occupation</b>		
None	67.7	642
Formal employment	15.9	151
Others	15.7	149
<b>Age at first sex</b>		
<=16	25.9	246
17-19	38.2	362
20+	35.9	340

that a teacher should be allowed to teach when they have HIV (OR=0.095, CI=0.016-20.80).

## DISCUSSION

BBSS (2013) study where the data used in this paper

was derived is the first systematic survey on female sex workers in Botswana. Botswana's HIV prevalence among FSW's is 61.9%, more than 3 times that of the general population [Ministry of Health, 2013]. Although, Botswana introduced universal access to ART in 2002 for all patients with CD4 counts less than 200 or with AIDS defining illness and the routine HIV testing for all citizens

**Table 2.** Association between HIV testing and socio-demographic characteristics of FSWs.

Variable	Ever tested (N=845)		Never tested (N=102)		$\chi^2$	p-Value
	n	%	n	%		
<b>Nationality</b>					5.627	0.229
Motswana	588	69.5	60	58.8		
Zimbabwean	254	30.0	42	41.2		
Other	3	0.3	0	0		
<b>Age</b>					14.287	0.03*
<=24	202	23.9	35	34.0		
25-29	285	33.7	20	19.4		
30-34	199	23.6	34	33.0		
35+	159	18.8	14	13.6		
Mean age (29.13)						
Median age (28)						
<b>Number of children</b>					15.553	0.001*
None	120	14.2	30	29.1		
One	316	37.4	31	30.1		
Two	248	29.3	24	23.1		
Three and more	161	19.1	18	17.5		
<b>Marital status</b>					8.234	0.041*
Married/Cohabiting	35	4.1	2	1.9		
Single	481	56.9	68	66.7		
Once married	95	11.2	16	15.5		
Boyfriend not cohabiting	234	27.7	17	16.5		
<b>Education</b>					1.018	0.602
Primary and lower	103	12.2	14	13.6		
Junior	345	40.8	46	44.7		
Senior/higher	397	47.0	43	41.7		
<b>Age started sex-work</b>					3.959	0.138
<=21	279	33.0	40	38.8		
22-26	278	32.9	24	23.3		
27+	288	34.1	39	37.9		
<b>Other occupation</b>					2.486	0.289
None	566	67.3	77	74.8		
Formal employment	139	16.6	12	11.7		
Others	135	16.1	14	13.6		
<b>Paid not to use condom</b>					1.916	0.166
Yes	247	29.3	37	35.9		
No	596	70.7	66	64.1		
<b>Forced not to use condom</b>					2.316	0.128
Yes	173	20.7	28	27.2		
No	664	79.3	75	72.8		
<b>Self-perceived risk for HIV</b>					7.280	0.026*
No/Small risk.	177	21.7	16	15.5		
Moderate	165	20.2	13	12.6		

Table 2. Cont'd.

High	474	58.1	74	71.8		
<b>Alcohol consumption</b>					6.581	0.087
Everyday	94	11.1	14	13.7		
Once a week	395	47.1	48	47.1		
Once a month	131	15.6	7	6.9		
Never	219	26.1	33	32.4		
<b>Age at first sex</b>					2.593	0.273
<15	321	38	28	27.2		
15-20	261	30.9	40	38.8		
20+	263	31.1	35	34		
<b>Condom use with regular clients</b>					7.038	<b>0.03*</b>
Every time	531	63.2	55	53.4		
Almost every time	162	19.3	19	18.6		
Sometimes/never	147	17.5	29	28.4		
<b>Client volume per week</b>					4.975	0.083
<=8	91	10.8	7	6.9		
9-15	236	27.9	24	23.5		
16+	519	61.3	71	69.6		
<b>Condom use with boyfriend not cohabiting</b>					6.478	<b>0.039*</b>
Every time	203	49.0	12	31.6		
Almost every time	58	14.0	4	10.5		
Sometimes/never	153	37.0	22	57.9		
<b>Current have lower abdominal-pains</b>					5.268	<b>0.072</b>
Yes	167	19.7	30	29.4		
No	678	80.1	72	70.6		
<b>Current have excessive vaginal discharge</b>					0.281	0.596
Yes	162	19.8	22	21.4		
No	682	80.2	80	78.6		
<b>Current have foul smelly discharge</b>					4.656	<b>0.031*</b>
Yes	134	15.9	25	24.5		
No	711	84.1	77	75.5		
<b>Current have burning urine</b>					0.503	0.478
Yes	75	8.9	7	6.8		
No	770	91.1	86	93.2		
<b>Current have swelling groin</b>					2.213	0.137
Yes	20	2.4	5	4.9		
No	825	97.6	98	95.1		
<b>Current have genital ulceration</b>					76.717	<b>0.01**</b>
Yes	29	3.4	9	8.7		
No	816	96.6	94	91.3		

Table 2. Cont'd.

<b>Current have fever</b>					<b>1.524</b>	<b>0.217</b>
Yes	71	8.5	5	5.0		
No	764	91.5	96	95.0		
<b>Share a meal</b>					<b>21.151</b>	<b>0.000**</b>
Yes	781	92.4	81	78.6		
No	64	7.6	22	21.4		
<b>Give care</b>					<b>2.526</b>	<b>0.112</b>
Yes	826	97.8	98	95.1		
No	19	2.2	5	4.9		
<b>Teacher allowed to continue</b>					<b>19.693</b>	<b>0.000**</b>
Yes	830	98.3	93	91.2		
No	14	1.7	9	8.8		
<b>Buying</b>					<b>5.383</b>	<b>0.020*</b>
Yes	759	89.9	84	82.4		
No	85	10.1	18	17.6		
<b>Status of family remain a secrete</b>					<b>2.317</b>	<b>0.128</b>
Yes	265	31.5	39	39.0		
<b>No</b>	<b>577</b>	<b>68.5</b>	<b>61</b>	<b>61.0</b>		

\*Significant at 5% level; \*\*significant at 1% level.

in 2004, with the goal of increasing the proportion of individuals aware of their status, these programs have not benefitted the high risk sub-populations of FSW (Kenyon, 2005). The laboratory confirmed results on HIV testing of this subpopulation show that 56% of the 912 who complete the HIV screening procedure tested HIV positive. The descriptive analysis show that the majority of the FSWs (89.2%) in the study claimed to have tested for HIV in the last 12 months. About 58.5% of those who tested reported a negative HIV status while 28.6% reported a positive HIV status. Of those who reported that they were HIV positive, about 38% of them reported being on ART. This means that all those with laboratory confirmed HIV infection the majority were not on ART. Of those who were HIV negative, the majority were also unaware of their status. This could be because they have never collected their results for fear of knowing ones HIV status.

Documented studies have shown that HIV-related stigma is a barrier to testing in Africa and elsewhere (Weiser, 2006; Arnott and Crago, 2009; Mtetwa et al., 2013; NACA, 2003). However, the results of this study showed social stigma and discrimination as an insignificant factor on having an HIV test. Importantly, the FSWs have less stigma related attitudes towards PLWA because all the questions on their opinion in relating to PLWA were not statistically significant except that the

odds for testing for those who think a teacher must not be allowed to teach when they have HIV is more than 10 times the odds for testing for those who think the teacher must be allowed to teach.

Analysis of the study results show young FSWs are more likely to have an HIV test and those who reported not having children. The odds of testing for HIV is over 7 times for those who are 24 years and younger as compared to those who are 35 years and older. This is inconsistent with a study by McGarrigle et al. (2005) where HIV testing was associated with old age among men than women. Similarly, FSWs who have no children were 4 times more likely to take an HIV test as compared to those who have 3 or more children and no significant difference for those who have one or two children. What could lead to this finding is not clear. One would expect the odds of testing to increase with the number of children, particularly with the hope that if one receives a positive test results they would enrol in the ART programme and prolong their lives to continue taking care of the children. The odds of taking an HIV test for those whose sexual debut is 20 years and above are almost 4 times of those who are 17 to 19 years and there is no significant difference for those who are under 16 years of age. The FSWs reported a high rate of symptomatic STIs which may increase their risk of contracting and transmitting HIV. Significantly, lower abdominal pains,

**Table 3.** Factors associated with ever taking an HIV test.

Variable	Sig	Exp(B)	95% CI for Exp(B)	
			Lower	Upper
<b>Age (35+)</b>	0.016*			
<=24	0.044*	7.203	1.057	49.066
25-29	0.748	1.369	0.202	9.284
30-34	0.885	1.153	0.167	7.960
<b>Number of children (3 or more)</b>	0.001**			
None	0.083	4.621	0.821	26.020
One	0.177	0.279	0.044	1.778
Two	0.975	1.026	0.217	4.851
<b>Age at first sex(20+)</b>	0.037*			
<=16	0.938	1.043	0.363	3.000
17-19	0.020*	0.252	0.079	0.806
<b>Condom use with boyfriend not cohabiting (sometimes/never)</b>	0.007**			
Every time	0.003**	0.215	0.078	0.595
Almost every time	0.066	0.202	0.037	1.109
Lower Abdominal pain	0.011*	3.738	1.359	10.285
Burning urination	0.045*	0.095	0.009	0.947
Genital ulceration	0.028*	4.969	1.187	20.802
Teacher allowed	0.014*	0.099	0.016	0.620
Constant	0.036	0.535		

\*Significant at 5% level; \*\*Significant at 1% level.

burning pain on urination and genital ulcerations were predictors of having an HIV test. FSWs who experienced lower abdominal pains had an AOR of 3.74 of reporting an HIV test, while FSW burning pain on urination had an AOR of 0.1 and those with reported genital ulcerations had AOR of 4.97. Almost half of those who reported having STI's accessed health service either at the government clinic or health worker. This confirms findings of previous studies that those who feel at risk because of STIs symptoms are more likely to seek testing (Xu, 2011; Wang et al., 2009). However, some FSWs underestimate their risk of contracting HIV, as this factor and the volume of clients serviced were not found to be significant. Similar finding were recorded by Wang et al. (2009) and made suggestions for educational programs to which can help raise HIV awareness and teach them to understand that HIV infections are often not asymptotic. Major efforts to increase HIV testing among FSWs would be beneficial if they are encouraged to go for post test counselling and getting results. These efforts will encourage the FSWs to change their risky behaviours and for those who have positive sero-prevalence to take treatment and improve on their general health well-being.

There was significant evidence of inconsistent condom use with cohabiting boyfriends. Respondents who sometimes or never use the condom are more than four times likely to go for an HIV test than those who reported using the condom every time and almost every time. About 62% of the FSWs reported consistent condom use with their clients. However, these factors turned out insignificant in the model together with condom use with casual partners. Although, few FSW (3.7%) reported having boyfriends/married partners, simple analysis on condom use presented similar findings to other studies that they are less likely to use condoms with their boyfriends/married partners or casual partners to show trust and their level of intimacy (Grayman et al., 2005).

It has been observed that where coverage of prevention services is high, high levels of condom use have followed. Botswana has made significant interventions in HIV treatment programs and has developed a strong health care system to provide for services to PLWA. This framework should also be extended to FSW's and their clients in order to curb STIs and HIV infections. The study shows that HIV prevalence among sex workers is high in Botswana and there is little



participation in HIV prevention, treatment and care efforts. Similar observations were made in a study by Cowan et al. (2013) even though the Zimbabwean National Aids Council (NAC) initiated a programme for FSWs targeted at overcoming challenges related to access. Despite some of these huddles, there has been evidence of marked HIV reduction and social stigma where robust interventions are in place for FSWs and their clients (Chetsich et al., 2007; Shannon et al., 2015).

## Limitations

The use of secondary data in this study imposed restrictions for further investigations and clarifications to be made in relation to HIV/AIDS prevalence among the respondents. Some of the required variables were available but not presented in a way the researcher would have preferred to use them hence we resorted to a recoding process which in itself has limitations. The data further exposes this research paper to the errors and would like to request that the results be interpreted with caution.

## Conclusions

This is a baseline study conducted to collect data on the emerging sub-population, of whom little is known about their sexual behaviour in Botswana. The study demonstrated that female sex workers were disproportionately more vulnerable to HIV and other STIs. It is also known that by nature, sex workers engage in multiple concurrent partnerships which can serve as a “bridge” for HIV transmission between the most-at-risk groups and general population. The government of Botswana can curb the impact of HIV by scaling up prevention efforts among the most-at risk groups by removing the barriers and allowing them to participate in HIV prevention, treatment and care efforts.

## Conflict of Interests

The authors declare that they have no conflict of interest.

## REFERENCES

- Arnott J, Crago AL (2009). Rights Not Rescue. A report on female, male and trans sex workers' Human Rights in Botswana, Namibia and South Africa. New York City. Open Society Institute. Available at: [https://www.opensocietyfoundations.org/sites/default/files/rightsnotrescue\\_20090706.pdf](https://www.opensocietyfoundations.org/sites/default/files/rightsnotrescue_20090706.pdf)
- Babalola S, Tambashe BO, Vondrasek C (2005). Parental factors and sexual risk taking among youth people in Code d'Ivoire. *Afr. J. Reprod. Health* 9(1):49-65.
- Central Statistics Office (CSO) (2009). 2008 Botswana AIDS Impact Survey III Statistics Report, Central Statistics Office. Gaborone.
- Botswana National Strategic framework for HIV/AIDS 2003-2009 (2003). National AIDS Coordinating Agency. Gaborone.
- Cowan FM, Mtetwa S, Davey C, Fearon E, Dirawo J, Wong-Gruenwald R, Ndikudze T, Chidiya S, Benedikt C, Busza J, Hargreaves JR (2013). Engagement with HIV Prevention Treatment and Care among Female sex workers in Zimbabwe: a Respondent Driven Sampling Survey. *PLoS One* 8(10):e77080.
- Chersich MF, Luchters SM, Malonza IM, Mwarogo P, King'ola N, Temmerman M (2007). Heavy episodic drinking among Kenyan female sex workers is associated with unsafe sex, sexual violence and sexually transmitted infections. *Int. J. STD AIDS* 18(11):764-769.
- Dunkle KL, Jewkes RK, Brown HC, Gray GE, McNtryre JA, Harlow SD (2004). Transactional sex among women in Soweto: prevalence, risk factors and association with HIV infection. *Soc. Sci. Med.* 59(8):1581-1592.
- Global Report (2013). UNAIDS Report on Global Aids pandemic. Available at: [http://files.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/UNAIDS\\_Global\\_Report\\_2013\\_en.pdf](http://files.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/UNAIDS_Global_Report_2013_en.pdf)
- Grayman JH, Nhan DT, Huong PT, Jenkins RA, Carey JW, West GR, Mihn TT (2005). Factors associated with HIV testing, condom Use, and Sexually Transmitted Infections among Female Sex workers in Nha Trang, Vietnam. *AIDS Behav.* 9(1):41-51.
- Gupta R (2000). Gender, sexuality and HIV/AIDS: the what, the why and the how. *Can HIV AIDS Policy Law Rev.* 5(4):86-93.
- Hong Y, Zhang C, Li X, Fang X, Lin X, Zhou Y, Liu W (2012). HIV Testing Behaviours among Female Sex Workers in Southwest China. *AIDS Behav.* 16(1):44-52.
- Kalichman SC, Simbayi LC (2003). HIV testing attitudes, AIDS stigma and voluntary HIV counselling and testing in a black township in Cape Town, South Africa. *Sex. Tran. Infect. Dis.* 79(6):442-447.
- Kenyon K (2005). Routine HIV Testing: A view from Botswana. *Health Hum. Rights* 8(2):21-23.
- Machekano R, McFarland W, Hudes ES, Bassett MT, Mbizvo MT, Katzenst D (2000). Correlates of HIV test results seeking and utilization of partner counseling services in a cohort of male factory workers in Zimbabwe. *AIDS Behav.* 4(1):63-70.
- Matovu JK, Makumbi FE (2007). Expanding access to voluntary HIV counselling and testing in sub-Saharan Africa: alternative approaches for improving uptake, 2001-2007. *Trop. Med. Int. Health* 12(11):1315-22.
- McGarrigle CA, Mercer CH, Fenton KA, Copas AJ, Weelings K, Erens B, Johnson AM (2005). Investigating the relationship between HIV testing and risk behaviour in Britain. National survey of sexual attitudes and lifestyle 2000. *AIDS* 19(1):77-84.
- Miller KS, Hennessy M, Wendell DA, Webber MP, Schoenbaum EE (1996). Behavioral risks for HIV infection associated with HIV testing decision. *AIDS Educ. Prev.* 8(5):394-402.
- Ministry of Health (2013). Botswana Biological and Behavioural Surveillance Survey (BBSS) report. Gaborone. <https://www.fhi360.org/projects/behavioral-and-biological-surveillance-survey-bbss-hivsti-among-select-high-risk-sub>
- Mtewa S, Busza J, Chidiya S, Mungofa S, Cowan F (2013). “You are wasting our drugs”: Health Services Barriers to HIV Treatment for Sex Workers in Zimbabwe. *BMC Public Health* 13:698.
- Shannon K, Strathdee SA, Goldenberg SM, Duff P, Mwangi P, Rusakova M, Reza-Paul S, Lau J, Deering K, Pickles MR, Boily MC (2015). Global epidemiology of HIV among female sex workers: influence of structural determinants. *Lancet* 385(9962):55-71.
- Shokoohi M, Karamouzian M, Khajekazemi R, Osoli M, Sharifi H, Haghdoost AA, Kamali K, Mirzazadeh A (2016). Correlates of HIV Testing among Female Sex Workers in Iran: Findings of a National Bio-Behavioural Surveillance Survey. *PLoS One* 11(1):e0147587.
- Statistics Botswana (2013). Preliminary Results Botswana AIDS Impact Survey IV (BAIS IV), Private Bag 0024 Gaborone, Botswana.
- UNAIDS Report on the Global AIDS Epidemic. 2012.
- Wang Y, Li B, Zheng J, Sengupta S, Emrick CB, Cohen MS, Henderson GE (2009). Factors related to female sex workers willingness to utilise VCT service. A qualitative study in Jinan City, Northern China. *AIDS Behav.* 13(5):866-872.
- Weiser SD, Heisler M, Leiter K, Percy-de Korte F, Tlou S, DeMonner S, Phaladze N, Bangsberg DR, Iacopino V (2006). Routine HIV Testing

- in Botswana: A Population-Based-Study on Attitudes, Practices, and Human Rights Concerns. *PLoS Med.* 3(7):e261.
- World Health Organisation (WHO/UNAIDS/UNICEF) (2007). Towards universal access: scaling up priority HIV/AIDS interventions in the health sector. [http://www.who.int/hiv/mediacentre/universal\\_access\\_progress\\_report\\_en.pdf?ua=1](http://www.who.int/hiv/mediacentre/universal_access_progress_report_en.pdf?ua=1)
- WHO (World Health Organisation) (2013). Global update on hiv treatment in 2013: Results, Impacts and Opportunities. Geneva. <http://apps.who.int/iris/handle/10665/85326>
- Xu J, Brown K, Ding G, Wang H, Zhang G, Reilly K, Li Q, Wang G, Wang N (2011). Factors Associated with HIV testing history and HIV-Test follow-up among female sex workers in two cities in Yunnan, China. *Sex Transm. Dis.* 38(2):89-95.



# Journal of AIDS and HIV Research

Related Journals Published by Academic Journals

- *Clinical Reviews and Opinions*
- *Journal of Cell Biology and Genetics*
- *Journal of Clinical Medicine and Research*
- *Journal of Diabetes and Endocrinology*
- *Journal of Medical Genetics and Genomics*
- *Medical Case Studies*



**academic**Journals