

## Despite Symptoms, migrant's construction workers Delay Treatment for STIs, Have Unsafe Sex in Botswana

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**ABSTRACT:** *Background:* However much research has been carried out with mine workers, truck drivers, and other migrant groups, few studies have investigated the risk factors of construction workers, which form one of the largest employment groups in Botswana.

*Materials and methods:* This cross-sectional study aimed to assess the level of Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome -risk behavior among construction workers in Botswana. Data of 500 workers was collected using structured questionnaires with purposive method.

*Results:* More than quarter (33.4%) of respondent's engaged in unprotected sex. Forty point two percent had experienced sex with Commercial sex workers. Multivariate analysis discovered that living with friends/relatives [Adjusted Odd Ratio 95% Confidence Interval; 2.7(1.89-6.01)], and monthly salary [Adjusted Odd Ratio 95% Confidence Interval; 2.0(0.83-3.85)], were statistically significant to influence condom use efficacy.

*Conclusion:* The paper suggest that migrant worker's lack of awareness about the need to receive prompt treatment, the lack of monetary resources, mostly among women, are all conceivable reasons that people in the study delayed seeking treatment.

**KEYWORDS:** Migrant Construction workers, Sexual Transmitted Infections, Condom use, Knowledge about Human Immunodeficiency Virus.

### 1 BACKGROUND

In Botswana, construction workers have been one of the largest groups of migrant labour, accounting for an estimated 10.5% to 12.5% of formal employment [1]. A number of studies [2] have indicated how construction workers' sexual behaviours contributed to increased levels of HIV infection. The Botswana government's HIV surveillance report found that construction projects have played a major role in the spread of HIV, bringing about a situation where economically buoyant young men frequently come into contact with economically vulnerable young women [3]. A study of the Kgalagadi region of South-West Botswana reported that one of the major ways in which residents were initially exposed to HIV infection was through contact with migrant workers employed at large construction sites in the zone [4]. Botswana UNDP indicated that "expanses that had hosted development projects often involving construction were found to have especially high rates of HIV" [5]. Comparable condition has occurred in South Africa, where it has been reported that the local construction industry suffers from the third highest incidence of HIV/AIDS. The Construction Industry Development Board argued that this was mainly due to its migrant working environment, making it a prime contributor to the spread of the disease [6].

While it has been demonstrated that construction projects contribute to the transmission of HIV in Botswana, few studies have established why this is the case. Amongst other groups of migrant labour, research has identified a number of sexual behaviours involving multiple partners, transactional sex, commercial sex and unprotected sex, which have placed workers at greater risk of HIV. Long-distance migration, involving the separation of workers from their long-term partner, has been identified as one of the central factors contributing to workers' engagement in these sexual risk behaviours. The aim of this

study is to determine the sexual risk behaviours of migrant construction workers, and the risk factors which have contributed to these behaviours.

## **2 METHODOLOGY**

### **2.1 STUDY SITE**

A cross-sectional study with a quantitative approach was completed in Gaborone and Francistown between August 2013 and January 2014; these are the biggest cities with job opportunities.

### **2.2 SAMPLE SIZE**

Sample size was calculated by using an estimation of population proportion formula:  $n = Z^2 \cdot P(1-P) / (E^2)$ , where  $P$  = expected value = 12%,  $E$  = (expected frequency-worst acceptable) = 10%–8% = 2%,  $Z = 1.960$  with a confidence level of 95%,  $n = 1.960^2 \cdot 0.10(1-0.10) / (0.02^2)$ . The final sample size was determined to be 500 after calculating that  $S = n / [1 + (n/\text{population})]$ .

### **2.3 EXCLUSION AND INCLUSION CRITERIA**

Respondents who were included in the study were migrant workers who were between 18 and 65 years of age. Only migrant workers were eligible.

### **2.4 DATA COLLECTION PROCEDURE**

Due to the geographically scattered distribution of migrant workers, different working nature and working hours, and their free time, it was difficult to arrange data collection. Data were recruited in both daytime and after hours and in their residences and workplaces. Data collectors were fourth-year students at the University of Botswana with data collection experience.

### **2.5 GAIN ACCESS TO KEY PARTICIPANTS**

A snowball sampling technique was used to find a specific number of participants per target group. Participants who suited the inclusion criteria were targeted and their informed consent was received prior to recruitment. Indeed, participants were able to identify and refer other potential respondents with similar characteristics, who were willing to discuss sexual behavior. The author's contact information was passed to migrant workers whom the researchers had already interviewed so that they could pass on to other potential participants.

### **2.6 STATISTICAL ANALYSIS**

Descriptive statistics was analyzed as mean  $\pm$  *SD*. In order to examine the associations between the sexual behavior, univariate logistic regression was used. SPSS 21.0 was used to analyze the data.

### **2.7 ETHICAL CONSIDERATIONS**

This study was approved by the Human Subjects Review Committee of the Institution of Social Medicine and Health Administration at Shandong Medical University. An ethical clearance letter was also obtained from the Research Review Committee of the Ministry of Health in Botswana. At the enrolment visit, eligible respondents were confirmed and signed informed consent obtained but immediately after data collection they were destroyed, as the study was regarded as dealing with sensitive issues in the local culture. This consent procedure was approved by the Ethical Committee of Shandong University and the Ministry of Health.

### 3 RESULTS

#### 3.1 DEMOGRAPHIC DATA

The majority of workers were able to report their age. Of these, 53 workers (10.6 %) were under 22 years of age, 164 workers (32.8 %) were 23 – 28 years old, and 283 workers (56.6%) were 29- 35 years. The mean age was 28.3 years with a standard deviation of 8.1 years. The majority (36.2%) of all the respondents had lived in Botswana for an average duration of 3 years. The mean number of years completed by senior staff, 8.23 years (95% CI: 7.88 to 9.04) was significantly higher than the mean number of years completed by skilled workers, 5.11 years (95% CI: 4.92 to 6.30). An independent two-tailed t-test resulted in a significance of  $p = 0.022$  ( $t = 2.82$ ).

#### Risk behavior among the migrant construction workers

*Table 1: level of risky sexual behaviours among construction workers in Botswana*

Variable	n=500	Percent(95% CI)
Using condoms on every occasion		
Yes	232	46.4 (32.45-65.32)
No	268	53.6 (48.99-59.82)
Ever experienced condom breakage		
Yes	98	19.6 (10.28-23.40)
No	402	80.4 (62.19-96.44)
Faithfulness with spouse/partner		
Yes	68	13.6 (10.87-3022)
No	432	86.4 (78.88-95.16)
No condom used because of been circumcised		
Yes	128	25.6 (22.67-31.96)
No	372	74.6 (69.01-82.77)
Had sex with CSW in the past one year		
Yes	201	40.2 (29.11-59.36)
No	299	59.8 (49.41-71.49)
Have more than 2 partner in the in the past one year		
Yes	382	76.4 (72.55-89.21)
No	118	23.6 (18.09-42.63)
Engaged in unprotected sex		
Yes	167	33.4 (30.62-44.41)
No	333	66.6 (58.55-76.92)

Table 1 indicated that virtually all the respondents had received information on HIV/AIDS. About 46.4 % of migrant workers used condoms on every occasion. Of those who used condom always, around 19.6% encountered condom breakage and 25.6 % reported that they had sex without condom because of circumcision. About 86.4% of migrant construction workers were unfaithful to their spouse/partners. Of those who are unfaithful, 40.2 % had more than 2 partners. The mean age at first sex was about 16 years (SD 2.8).

Factors related with HIV and risky sexual behaviours

Table 2: Factors associated with condom use as HIV risk preventive behavior in migrant construction workers

Variables	Crude or 95% CI	Adjusted OR 95% CI
Categories		
Unskilled workers	1	1
Skilled workers	3.2 (2.31-4.62)	2.8 (1.28- 7.55)
Alcohol consumption		
Yes	1	1
No	6.7 (4.11-8.62)	4.8 (4.13-9.02)
Living arrangement		
Alone	1	1
Friends/relatives	3.6 (2.9-5.33)	2.7 (1.89-6.01)
Partner /co-workers	0.81 (0.27-1.02)	0.4 (0.35-1.25)
Monthly		
P500- P1000	1	1
P1001-2000	1.3 (0.92 – 2.25)	2.0 (0.83 – 3.85)
P2001-3000	0.60 (0.44 – 0.99)	1.3 (0.52 – 2.88)
P3001+	0.06 (0.022 – 0.26)	0.31 (0.04-1.44)
Religion		
African traditional religion	1	1
Christianity	0.72 (0.39 – 1.57)	1.0 (0.78 – 2.51)
Muslim	0.04 (0.021-0.42)	0.19 (0.10 – 0.52)

\*P<0.05\*\*P<0.001.

As indicated in table 2, the logistic regression model shown that higher income from construction workers has affirmative association with condom use efficiency. Construction workers who earned better salary were more likely to be able to use condom during sexual practices. Non alcohol consumption workers had contrary association with condom use. Living arrangement also had association of condom use. Construction workers who lived with friends/relatives were about three times more likely to used condom than those who lived alone.

**Table 3: factor association with having one partner as HIV risk preventive behavior in migrant construction workers**

Variables	Crude OR 95% CI	Adjusted OR 95% CI
Migration		
Separated from main partner		
Yes	1	1
No	6.2 (5.45-7.22)	5.6 (4.77-8.27)
Living condition		
Location of accommodation		
Off-site	1	1
On-site	4.2 (2.85-5.44)	4 (2.39-5.70)
Alcohol consumption		
N0. Beers drink per week		
10 beers and over	1	1
Under 10 beers	2.2 (1.32 – 3.82)	2 (1.46-3.99)
Cultural determinants		
Cleansing	1	1
Society recognition	0.72 (0.37-1.10)	0.88 (0.42-1.40)

\* $P < 0.05$  \*\* $P < 0.001$ 

As shown in table 3, construction workers who are not separated from their main partners were six times more likely to have partner than the workers who were separated from their partner. Construction workers who lived on-site were about four times to have one partner than those who stayed off-site. Respondent who had drank less than 10 beers in a week were less likely to have one partner than those who ever took more than 10 beers in a week.

**Sexual transmitted disease among construction workers:** The majority (48.3%) of all the respondents had heard of STI. More than half (62.3%) of the STI-aware respondents could name one or more STD symptoms. There were only 205 men who revealed that they had STI in the past 6 months prior to the survey. Most of these were single (62.1%), with secondary school (42.1%) but with little income. One half (58.2%) of these men had multiple partners. Respondents also reported that they sought medical advice from friends. Diagnosis of STI was reported (1) unskilled workers (48%) than by supervisors (9%;  $P = .02$ ) but not more than skilled workers (27%;  $P = .11$ ); (2) More by those who reported had sex with CSW (45%) than by those who did not (16%;  $P < .001$ ); and (3) more by those who have multi partners (34%;  $P = .003$ ). Majority of respondents took medicine for their ailment from pharmacy (57.4%).

#### 4 DISCUSSION

Construction workers in Gaborone and Francistown, wait approximately two week after the appearance of sexually transmitted infection (STI) symptoms to seek treatment at a health clinic, according to a survey of 500 migrant construction workers. Moreover, once they receive a referral for STI treatment, male wait longer than female to attend an STI clinic for follow-up treatment (28 days vs. 21 days) [7]. Nearly two-quarter of women and one-quarter of men report having had sex while indicative, and one in five women and one in five men report having used condoms while symptomatic.

Men were more likely than women to report coming directly to the STI clinic for their current STI treatment (57% vs. 45%), while women first seek help from drug stores. Workers indicated first seeking treatment a median of seven days following the appearance of STI symptoms which agreed with what others had find [8]. When men and women were referred to the STI clinic, they delayed even longer: Men delayed attending the STI clinic for a median of 28 days and women delayed for a median of 21 days. For genital ulcer disease, the delay was shorter--a median of 16 days for male workers and 18 days for female workers. In the case of vaginitis, women delayed a median of 38 days before attending the STI clinic.

Significantly more women than men reported that they had engaged in sex while they had STI symptoms (66% vs. 30%). Women were significantly more likely than men to report that they had had only one sexual partner while they had symptoms (91% vs. 58%) and that their sexual partner was their spouse (64% vs. 51%). Men were significantly more likely than women to report having exchanged money for sex while they had symptoms (11% vs. 5%).

There was no significant difference between the proportions of men and women who said they had used condoms while they had STI symptoms (20% and 16%). However, significantly fewer men than women said they had used a condom with their spouse while symptomatic (27% vs. 55%). Overall, men were more likely than women to report having used condoms ever in their lives (73% vs. 38%). These findings are beyond our expectations. However, the previous study indicated that for transport workers, the feeling of loneliness grows with every mile, but there are some who see their families even less frequently. This may cause them to be involved with a CSW or multiple partners [9].

## **5 CONCLUSION**

This study specified that improved working conditions could significantly reduce the extent to which migrant construction workers engage in sexual risk behaviours. As a result, introduce availability of condoms at construction sites. During the interviews respondents stated concern that condoms were rarely available, despite the company's condom distribution policy. Workers had difficulties accessing condoms from clinics or shops because majority of them have no travelling documents. Escalating condom distributors for public access at construction sites would be a simple low-cost measure which could potentially reduce the overall incidence of unprotected sex.

## **COMPETING INTEREST**

The authors declare that there is no conflict of interests.

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## **AUTHORS' CONTRIBUTION**

The concept, data analysis and drafting of the manuscript were done by Lesego Selotlegeng. All authors contributed to reading and correcting the manuscript prior to submission.

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