

Sexual Practices among Cobblestone Construction Workers in Addis Ababa, Ethiopia: Challenge to the Prevention of HIV Infection

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Abstract

Background: HIV infection remains a public health challenge. This study assessed sexual practices among casual workers at the Cobblestone construction, Addis Ababa, Ethiopia.

Methods: This was a quantitative cross-sectional study carried out among the labourers at the Cobblestone construction sites between October – December 2018. Multi-stage sampling was used to estimate the sample size. Demographic and sexual practice information were collected using a structured questionnaire. Bivariate and multivariate analyses were used to determine associations between variables; $P < 0.05$ was considered statistically significant.

Results: We recruited 627 labourers. Majority (82.2%) were aged between 18 and 38 years; average age at onset of sexual debut was 17.9 ± 2.67 and 19.14 ± 2.18 years among males and females respectively. Majority (68.5%) were married; exposure to pornography was 40.2% and 32% among male and female respectively. Lifetime multiple sexual practices were prevalent (59.9% and 50.0%) among males and females respectively; extramarital sex was prevalent (66.9%) among males but protected sex was relatively low (46.2%). Being employed significantly associated with likelihood of first exposure to alcohol ($P = 0.029$), level of education, exposure to pornography and knowledge of symptoms of STIs significantly associated with multiple sexual practices.

Conclusion: Prevalence of risky sexual practices among the labourers were high which risks them to HIV infections. Innovative approaches to behavioural change are needed to reduce risks of HIV infection.

Keywords: Unprotected sex, extramarital sex, multiple partners, HIV, condom

1. Background

The world has in the past three decades experienced devastating impact of Human Immunodeficiency Virus (HIV) and global efforts to find a cure for the disease have not been successful (Brummer D.2002). The HIV pandemic remains a global major public health concern. According to the UNAIDS Global HIV & AIDS Statistics Facts Sheet (UNAIDS, 2020), 37.7 million people were living with HIV (PLHIV) globally, 1.5 million became newly infected and 680, 000 people died from AIDS-related illnesses. The report indicates that among PLHIV, 36.0 and 1.7 million were adults and children aged 0–14 years respectively; and 53% were women and girls. In the sub-Saharan Africa, six in seven new HIV infections among adolescents aged 15–19 years are among girls; and young women aged 15–24 years are twice as likely to be living with HIV than men. Around 4,200 adolescent girls and young women aged 15–24 years became infected with HIV every week (AVERT, 2018). Initiation into sexual activity is an important landmark of transition into adulthood (Lamers, Ireland, Resnick, & Blum, 2000; Baumgartner, Waszak, Tucker, & Wedderburn, 2009), and early adolescent sexual activity is a recurring problem with negative psychosocial and health outcomes. Early age at first sex (below 15 years) exposes adolescents to risk of unwanted pregnancy, sexually transmitted and HIV infections (Mchunu, Peltzer, Tushan & Seutlwadi, 2021; Makenzius & Larsson, 2013; Durowade et al., 2017). The risk factors for HIV infection include unprotected sex, multiple sexual partners, alcohol consumption, drug abuse, and risky sexual behaviour. Despite gains made in the level of awareness of preventing HIV transmission and scaling up treatment programmes, the number of people acquiring HIV has remained high (UNAIDS, 2020).

The Evidence for Contraceptive Options and HIV Outcomes study (ECHO, 2019) reported HIV incidence of 3.8% among young women in selected study sites. Although data has indicated slow but steady progress towards higher levels of condom use, countries in the sub-Saharan Africa have fallen short of global condom use targets due to inequities and condom use among young women declined in some countries (Smith, Mann, Jones, Miller, Longfield, & Gesuale, 2018). Trends of donor funding for condom programmes have also indicated that global investment in HIV prevention declined by 44% between 2012 and 2017 (Jones, Miller, Mann, Smith & Gesuale, 2018). Intensified efforts are urgently needed to increase investments in programmes to improve condom use in countries with moderate and high HIV prevalence.

Studies have shown that workers engaged in circular migration such as miners, construction, plantations, forestry and military personnel are at higher HIV risk exposure due to the long periods of being away from home, separation from the socio-cultural norms that guide behaviour in more stable communities, relatively high monthly income, and risk-taking behaviour (IOM, 2003). Therefore, higher HIV risk exposure has been associated with increased mobility (Herdt, 1997; Ruiz et al., 2014), and mobility has been associated with higher prevalence of HIV in southern Africa region (Hunt 1989; Wolffers, Fernandez, Verghis, & Vink, 2002; Zuma, Setswe, Ketye, Mzolo, Rehle, & Mbelle, 2010). Studies in India have also pointed out that cultures and beliefs of places of origin play roles in the prevention of HIV (Saggurti, Mahapatra, Sabarwal, Ghosh, & Johri, 2012).

According to the Ethiopia Federal HIV/AIDS Prevention and Control Office (FHAPCO, 2015), there were 741,478 people living with HIV in the country of which 60% were female and 21,216 were new infections. According to the most recent World Bank (2020) data, the situation has improved significantly; the prevalence of HIV/AIDS stands at 0.9% of the population aged 15–49 years and the prevalence of women's share of the population aged 15+ living with HIV/AIDS remains high (63%). There were about 600,000 casual labourers working in large development schemes like flower plantations, construction and mining industries in Addis Ababa, Ethiopia. Baseline assessment has indicated that 9-12% of the sexually transmitted diseases (STDs) occurred among casual labourers at the building and road construction sites (Ethiopia HIV/AIDS Strategic Plan, 2014).

The prevalence of risky sexual behaviours among construction workers was 44.9% (Kassa, Tesfay, & Alamrew, 2013), and multiple partners and lack of condom use were prevalent (Dias, Marques, Gama, & Martins, 2014). Another study in a rural town in Ethiopia reported that seasonal workers were practising non-marital sexual intercourse of which 74% were with commercial sex workers (CSWs), 69% had multiple sexual partners and 49% practised transactional sex. Condom use was uncommon and inconsistent and 57.6% of the respondents had never used condom during any sex episodes (Tiruneh, Wasie, & Gonzalez, 2015). Based on these findings, it is prudent that understanding the complex issues of construction casual labourers is necessary in an attempt to reduce HIV transmission among construction workers. This study aimed to assess the factors associated with sexual and condom use practices as risks to HIV infection among Cobblestone Construction labourers in Addis Ababa, Ethiopia.

2. Methods

2.1 Study Setting

According to the 2007 census, the population in Addis Ababa City was 3.65 million (1.89 million females and 1.76 million males). The study was carried out among Cobblestone construction employees in Addis Ababa, Ethiopia.

2.2 Study Design

This was a quantitative cross-sectional carried out among the labourers at the Cobblestone construction sites between October – December 2018. The study gathered information on income and sexual behaviour among Cobblestone construction casual labourers.

2.3 Population

The target population was construction labourers and the accessible population included all Addis Ababa Cobblestone construction casual labourers.

2.4 Sample Size

Both willing adult male and female employees aged > 18 years, engaged in either quarrying or chiselling works for more than one month prior to the study were eligible to participate in the study. Casual labourers who worked at departments other than quarrying or chiselling were excluded from the study.

In calculating the sample size, the Kish Leslie (1965) formula of single population proportion was used. Based on previous studies on risky sexual behaviour among construction workers in Ethiopia of an estimated proportion p

= 44.9% at 95% CI, margin of error (d) = 5% and z-value of 1.96 (Kassa, Tesfay, & Alamrew, 2013), the estimated sample size was 380 labourers. Adjusting for the non-response rate (10%) and multistage sampling design effect factor 1.5, the total sample size increased to 627 workers.

2.5 Sampling Procedures

The Addis Ababa Cobblestone has seven construction sites including Glangora, Gewasa, Chefe, Katila, Bole Mele, Arabasa and Hanamariam. Simple random sampling was used to select the construction sites by assigning each site with a number from which two (Glangora and Katila) predominantly chiselling sites were randomly selected. Purposive sampling was used to select Hanamariam predominantly a quarrying site into the study. In selecting the study population, numbers were allocated to all eligible workers in the selected sites. Probability proportional to size sampling method was used to determine the number of participants from each site. Simple random sampling was used to select 122, 477 and 28 participants from Glangola, Hanamariam and Katila sites respectively.

2.6 Data Collection

The first author assisted by three trained assistants recruited from the Addis Ababa Prevention and Control Office and one focal person from the Cobblestone Construction Company administered the questionnaire. The questionnaire was adapted from the HIV/AIDS Behavioural Surveillance Survey used by Brummer, (2002), and pre-tested on a group of 15 workers from sites other than the selected study sites. To prevent distortion of information due to language barrier, the questionnaire was translated to Ameharinga, the Ethiopian official language before administration. The interviews were conducted in isolated rooms at the sites offering enough confidentiality and lasted between 30 – 45 minutes. Collected data included demographic data, income, exposure to pornography (viewing of erotic pornographic video and movies), smoking habits and sexual practices. Data quality was ensured by regular meetings everyday between research assistants and the Principal Investigator for reviewing collected data and ensuring uniformity in the data collection process.

2.7 Data Management and Analysis

At the end of each day, collected data was checked and entered through SPSS data capturing sheet. The analysis was done by IBM Statistical Package for the Social Science (SPSS) version 26. Frequencies and cross tabulation were used to characterise the data and multivariate logistic regression were performed to determine association between variables. The p-value <0.05 was considered statistically significant.

2.8 Validity and Consistency

The validity of the data in this study was assured from the questionnaire development which was worded carefully to minimise ambiguity, carefully translated in order to make sure there was no distortion of information. In addition, the methods used were appropriate for the study. The consistency was established by ensuring that repetitive and inappropriate questions were avoided, and trained research assistants were used to collect the data.

3. Ethical Considerations

The study received ethical clearance (Ref: HSHDC/829/2018) from the Department of Health Studies, University of South Africa and permission to carry out the study at the site was granted (Ref: CPC/395/09) by the Cobblestone Project Coordination Office in Addis Ababa.

4. Results

The study recruited 627 Cobblestone casual construction workers of which 464 (74%) and 163 (26%) were male and female respectively. Majority (82.2%) were young adults and the mean age was 31 with ± 0.96 (SD) years. The dominant religion was Orthodox 315 (50.6%); majority (93.9%) were from rural areas and alcohol drinking was prevalent 58.5% and 65.2% among males and females respectively. Literacy was high (85.1%). (Table 1)

Table 1. Socio-demographic characteristics of the study participants

Variables	Total		Male		Female	
	Frequency	%	Frequency	%	Frequency	%
Age						
18 - 24	118	18.8	89	19.2	29	17.8
25 - 31	206	32.9	160	34.5	46	28.2
32 - 38	213	34.0	140	30.2	73	44.8
38+	90	14.4	75	16.2	15	9.2
Total	627	100	464	100	163	100
Religion						
Orthodox	315	50.6	224	48.6	91	56.2
Muslin	100	16.1	83	18.0	17	10.5
Protestant	208	33.4	154	33.4	54	33.3
Total	623	100	461	100	162	100
Ethnicity						
Amhara	254	44.0	178	42.5	76	48.1
Oromo	196	34.0	126	30.1	70	44.3
Debube	127	22.0	115	27.4	12	7.6
Total	577	100	419	100	158	100
Place of origin						
Rural	584	93.9	427	93.0	157	96.3
Urban	38	6.1	32	7.0	6	3.6
Total	622	100	459	100	163	100.0
Education status						
Illiterate	93	14.9	78	16.9	15	9.2
Literate	532	85.1	384	83.1	148	90.8
Total	625	100	462	100	163	100.0
Exposure to alcohol before and after employment at Cobblestone						
Before	329	89.6	242	91.7	87	84.5
After	38	10.4	22	8.3	16	15.5
Total	367	100	264	100	103	100
Current drinking habit						
Not drinking	242	39.7	187	41.5	55	34.8
Drinking	367	60.3	264	58.5	103	65.2
Total	609	100	451	100	158	100
Smoking/khat chewing habits						
Yes	50	8.1	46	10.1	4	2.5
No	566	91.9	408	89.9	158	97.5
Total	616	100	454	100	162	100

4.1 Sexual Practices

The sexual practices of the employees are shown in Table 2. Majority (80.5%) had sex and the age at first sexual

encounter among males was between 13–18 years. Majority of the females (68.0%) had first sexual encounter at > 18 years of age. While 10 participants were uncertain about exposure to pornography, exposure to pornography was 40.2% and 32% among males and female respectively and lifetime multiple sexual partners was almost identical (59.9% and 50%) among males and the females respectively. Having had multiple sex partners six months prior to the study was 49.8% and 46.4% among males and females respectively. However, about 4% were uncomfortable to respond to the question. Extramarital sex was more prevalent among males (66.9%) and protected sex was generally low (42.6%). The average condom use during extramarital sex was 73.4% while consistency protected sex was low (52%). (Table 2)

Table 2. Sexual behaviours and gender distribution among the study participants

Variables	Male		Female	
	Frequency	%	Frequency	%
Have you ever had sex?				
Yes	379	82.0	124	76.1
No	83	18.0	39	23.9
Total	462	100	163	100
Age at first sex				
13 - 18	226	62.4	39	32.0
≥ 18	136	37.6	83	68.0
Total	362	100	122	100
Are you exposed to pornography?				
Yes	185	40.2	54	34.4
No	275	59.8	103	65.6
Total	460	100	157	100
Do you have lifetime multiple sexual partners?				
Yes	185	59.9	234	57.2
No	124	40.1	175	42.8
Total	309	100	409	100
Have you had multiple sexual partners six months prior to this study?				
Yes	152	49.8	45	46.4
No	153	50.2	52	53.6
Total	305	100	97	100
Have you had extramarital sex?				
Yes	174	96.7	40	51.9
No	6	3.3	37	48.1
Total	180	100	77	100
Do you use condom during extramarital sex?				
Yes	65	75.6	17	68.0
No	21	24.4	8	32.0
Total	86	100	25	100
Have you ever paid or received money for sex?				
Yes	117	37.1	25	25.5
No	198	62.9	73	74.5
Total	315	100	98	100

Do you practice protected sex?				
Yes	125	40.6	51	48.6
No	183	59.4	54	51.4
Total	308	100	105	100
How consistent are you in practicing protected sex?				
Consistent	56	51.9	19	48.7
Inconsistent	52	48.1	20	51.3
Total	108	100	39	100

4.2 Bivariate Analysis of Multiple Sex Partners

The bivariate analysis results of multiple sexual partners are presented in Table 3. Age, religion, marital status, education, alcohol exposure, cigarette smoking and khat chewing, average daily income, exposure to pornography significantly associated with multiple partners sex ($P < 0.05$). Similarly, correct and consistence use of condom significantly associated with multiple partners sex ($P < 0.05$). Among the males, average daily income < 100 Birr when compared to daily income of ≥ 100 birr significantly associated with the likelihood of multiple sexual partners ($COR=0.56, 95\% CI (0.33-0.97), P = 0.039$). Employment at the Cobblestone construction significantly associated with the likelihood of the first exposure to alcohol than before employment ($COR=0.61, 95\% CI (0.39-0.95), P = 0.029$). In addition, education, cigarette smoking, khat chewing and symptoms of STIs increased the odds of the likelihood of having multiple sexual partners among males. Controlling for gender, Orthodox religion when compared to Protestant significantly associated with the likelihood of multiple sexual partners among female ($COR=2.37, 95\% CI (1.03-5.46), P = 0.043$).

Table 3: Bivariate multiple sexual partner's sex among the study participants

Variables	All Cobblestone employees			Male			Female		
	COR	95% CI	p value	COR	95% CI	p value	COR	95% CI	p value
Age									
18-24	2.74	1.38 - 5.43	0.004*	2.29	1.33 - 6.57	0.008*	2.75	0.65 - 11.62	0.169
25-31	1.38	0.78 - 2.39	0.284	1.84	0.93 - 3.65	0.91	0.67	0.24 - 1.85	0.436
32-38	2.53	1.29 - 4.30	0.001*	3.58	1.87 - 6.85	0.003*	0.25	0.49 - 5.81	0.616
38+	RC								
Religion									
Orthodox	1.31	0.87 - 1.97	0.191	1.08	0.68 - 1.73	0.745	2.37	1.03-5.46	0.043*
Muslim	2.57	1.49 - 4.42	0.001*	2.66	1.44-4.93	0.002*	1.63	0.46-5.73	0.45
Protestant	RC								
Education status									
Illiterate	3.02	1.81-5.06	0.000*	2.87	1.64-5.03	0.000*	3.25	0.79-13.23	0.1
Literate	RC								
First exposure to alcohol									
Before Cobblestone	0.75	0.51-1.09	0.134	0.61	0.39-0.95	0.029*	1.51	0.68-3.35	0.31
After Cobblestone	2.33	1.06-5.15	0.036*	3.57	1.28-9.98	0.015*	0.96	0.2.0-4.61	0.959
Currently not drink	RC								
Average daily income birr									
< 100	0.51	0.28-94	0.030*	0.5	0.26-0.98	0.044*	4.96	1.29-19.08	0.020*
≥ 100	RC								

Access to HIV testing at work									
Yes	0.69	0.48-0.99	0.047*	0.64	0.42-0.97	0.033*	1.02	0.46-2.17	0.967
No	RC								
Exposure to pornography									
Yes	9.47	6.19-14.46	0.000*	10.5	6.38-17.23	0.000*	6.85	3.01-15.59	0.000*
No	RC								
Knowledge of STIs symptoms									
Yes	7.44	3.57-15.49	0.000*	8.89	3.67-21.53	0.000*	4.57	1.19-17.62	0.027*
No	RC								
Knowledge that correct and consistent use of condom can prevent HIV transmission									
Yes	0.64	0.45-0.92	0.016*	0.76	0.50-1.15	0.199	0.4	0.9-0.84	0.016*
No	RC								

$p < 0.05$ = significant, RC = reference category.

4.3 Multivariate Analysis with Multiple Sexual Partners

Table 4 presents multivariate analyses results of multiple sexual partners practices. The level of education, exposure to pornography, income, paid for sex and symptoms of STIs significantly associated with multiple sexual partners practices. When all other variables remain constant, exposure to pornography, paid sex and symptoms of STIs significantly associated with multiple sexual partner practices for both males and females. Controlling for gender shows that among the males, average daily income, exposure to pornography, and symptoms of STIs significantly associated with multiple sex partners. The level of education significantly associated with the whole population. High odds ratio (2.66) of multiple sexual partners six months before the study was observed among females.

Table 4. Multivariate analyses of multiple sexual partner's sex among the study participants

Variables	All Cobblestone employees			Male			Female		
	AOR	95% CI	p value	AOR	95% CI	p value	AOR	95% CI	p value
Education status									
Illiterate	2.02	1.03 - 3.93	0.040*	NS			NS		
Literate	RC								
Average daily income									
< 100	0.4	0.19 - 0.83	0.014*	0.39	0.17 - 0.88	0.023*	NS		
≥ 100	RC								
Exposure to pornography									
Yes	8.16	5.06 - 13.17	0.000*	8.7	4.89 - 15.21	0.000*	6.15	2.53 - 14.98	0.000*
NO	RC								
Paid for sex									
Yes	2.73	1.64 - 4.54	0.000*	2.25	1.26 - 4.02	0.006*	7.25	2.47 - 21.22	0.000*
NO	RC								
Symptoms of STIs									
Yes	5.58	2.39 - 13.00	0.000*	6.14	2.23 - 16.86	0.000*	NS		
NO	RC								

* $P < 0.05$; RC = Reference Category; NS = Nonsignificant.

4.4 Condom Use

Table 5 shows that, level of education, family support, free condom access at workplace, exposure to pornography, extramarital sex, and correct and consistence use of condom can prevent HIV associated significantly with condom use ($P < 0.05$). After controlling for gender, age, religion, family support, condom access and extramarital sex significantly associated with condom use among males ($P < 0.05$). Other factors that significantly associated with condom use were the knowledge that HIV positive people cannot be recognised from their physical appearance and knowledge that HIV infected people cannot transmit the infection through having meals with infected persons. Among the female, knowledge that receiving HIV positive blood transfusion, sharing syringes with HIV infected people can transmit the infection; and correct and consistence use of condom can prevent HIV infection significantly associated with condom use [(COR=3.7,95% CI (1.10-12.71), $P = 0.034$)].

Table 5. Condom use among the study participants

Variable	All Cobblestone employees			Male employees			Female employees		
	COR	95% CI	p value	COR	95% CI	p value	COR	95% CI	p value
Age									
18-24	0.58	0.28 - 1.17	0.128	0.51	0.22 - 1.18	0.11	0.82	0.19 - 3.43	0.784
25-31	0.57	0.31 - 1.03	0.062	0.5	0.25 - 1.01	0.54	0.78	0.27 - 2.28	0.649
32-38	0.35	0.19 - 0.62	0	0.32	0.16 - 0.62	0.001	0.48	0.15 - 1.56	0.223
38+	RC								
Religion									
Orthodox	0.78	0.49 - 1.21	0.259	0.72	0.43 - 1.20	0.208	0.96	0.41 - 2.29	0.934
Muslim	0.47	0.36 - 0.85	0.012*	0.39	0.19 - 0.79	0.008*	0.96	0.26 - 3.47	0.956
Protestant	RC								
Living with spouse/regular partner									
Yes	1.49	0.92 - 2.42	0.109	1.88	1.08 - 3.28	0.026*	0.71	0.25 - 1.98	0.507
No	RC								
Education status									
Illiterate	0.51	0.29 - 0.88	0.017*	0.43	0.23 - 0.81	0.009*	1.46	0.37 - 5.78	0.591
Literate	RC								
Family support									
Yes	0.57	0.38 - 0.86	0.007*	0.47	0.29 - 0.76	0.002*	1.05	0.47 - 2.36	0.904
No	RC								
Free condom access at work									
Yes	2	1.31 - 3.05	0.001*	2.09	1.39 - 3.42	0.000*	1.63	0.69 - 3.73	0.265
No	RC								
Exposure to pornography									
Yes	0.62	0.41 - 0.93	0.022*	0.49	0.3 - 0.79	0.003*	1.34	0.59 - 2.98	0.5
No	RC								
Extramarital sex									
Yes	0.51	0.32 - 0.79	0.003	0.49	0.29 - 0.85	0.01	0.66	0.26 - 1.65	0.371
No	RC								
Correct and consistence use of condom can prevent HIV									
Yes	1.86	1.25 - 2.77	0.002*	1.56	0.98 - 2.45	0.06	3.12	1.32 - 7.08	0.007
No	RC								

Can you recognise an HIV infected person by face?									
Yes	1.79	117 - 2.74	0.008*	1.9	1.16 - 3.12	0.010*	0.69	0.29 1.64	0.407
No	RC								
Can one be infected with HIV by sharing meals with infected persons?									
Yes	0.52	0.24 - 1.12	0.095	0.38	0.15 - 0.98	0.046*	1.14	0.27 - 4.83	0.859
No	RC								
Can HIV be transmitted by sharing syringes?									
Yes	1.73	0.87 - 3.43	0.121	1.03	0.42 - 2.53	0.944	3.7	1.10 - 12.71	0.034*
No	RC								

* $P < 0.05$; RC = Reference Category.

5. Discussion

The age at sexual debut varies between individuals and from place to place (Fatusi & Blum, 2008; Ekundayo, Dodson-Stallworth, Roofe, Aban, Bachmann, Kempf, Ehiri, & Jolly, 2007; Mott, Fondell, Hu, Kowaleski-Jones, & Menaghan, 1996). The mean age of sexual debut in this study was 17.96 ± 2.67 years for males and 19.14 ± 2.18 years for females, higher than those reported among seasonal workers in Metema, Ethiopia (Tiruneh, Wasie, & Gonzalez, 2015; Oljira, Berhane, & Worku, 2012). Compared to females, males have lower mean age at sexual debut. The finding of low mean age at first sexual encounter among males in this study is unexpected because since girls attain puberty earlier than boys, the expectation would be that females would have sexual debut earlier than males. This finding could be explained by some traditions and expectations in many African communities that a respectable woman should be passive with regards to sexuality and any proactivity would be associated with prostitution, a behaviour highly stigmatised. On the other hand, male dominance, exploring tendency and risk-taking behaviours would drive them to engage in sexuality at lower ages risking themselves to STIs and HIV infection. The prevalence of multiple sexual partners six months prior to this study were high (49.8% and 46.4%) among male and female respectively. This finding supports previous reports which found higher rates of multiple sexual partners among the males (Dias, Marques, Gama, & Martins, 2014; Ganczak, Czubińska, Korzen & Szych, 2017; Onoya, Zuma, Zungu, Shisana, & Mahlomakhulu, 2014; Saw, Saw, Chan, Cho & Jimba, 2018). In addition to the male dominance and societal expectations in sexuality, exposure to pornography, alcohol consumption and ability to pay for sex are likely to influence sexual behaviour and access to commercial sex workers which would explain the multiple sexual partner practices among the males seen in this study.

Education is a powerful tool for empowering communities to appreciate concepts and to make rational decisions. We however, found that the higher the level of education, the higher the likelihood of individuals engaging in multiple sexual partners. This could be explained by the association of education with likelihood of employment, regular and sustainable income which would provide especially among the males, the economic power to buy alcohol, pay for sex and own a television and DVD player for viewing erotic pornographic videos and movies. These findings, however, are contrary to the expectations that increased literacy would be associated with increased access to correct information on STIs and HIV transmission and prevention therefore, majority would take necessary precautions and prevent themselves from engaging in risky sexual practices.

We found in this study some positive attributes related to the knowledge about HIV and its transmission including knowledge that HIV positive people cannot be recognised from their physical appearance; HIV infected persons cannot transmit the infection to an uninfected person by eating together; receiving HIV positive blood transfusion; sharing syringes with HIV infected people can transmit HIV and that correct and consistent use of condom can prevent HIV infection indicate that the labourers' knowledge about transmission and prevention of HIV infection is high. However, their multiple sexual partner practices override the positive attributes.

Previous studies have reported that socio-ecological factors for condom-less sex occur at personal, social, and structural-level (Hughto, Reisner, & Pachankis, 2015; Sevelius, Reznick, Hart, & Schwarcz, 2009; Sweat, & Denison, 1995). At the personal level; dislike of condom, believing that condom use is not necessary, incorrect condom use and forgetting to use it during sexual encounters are some of the factors contributing to the risk of STIs and HIV infection. Previous reports have raised questions on how these challenges can be circumvented (Adia et al., 2018; Restar, Nguyen, Nguyen, Adia, Nazareno, Yoshika & Operario, 2018). We found in this study low rates of condom use during the most recent sexual encounters, (40.6% and 48.6%) among male and female

workers respectively. In addition, we found that among those who used condom, only small proportions (35.8% male and 48.7% female) used a condom during the recent multiple sexual intercourse. On average, about half, 51.9% and 48.7% male and female respectively used condom consistently during sexual intercourse. Similar findings were reported in the Sub-Saharan report (UNAIDS, 2016). In this study, some of the reasons given by the participants for using condom were to avoid STIs/HIV (85.5%), prevention of unwanted pregnancy (11.4%) and lack of trust in their sexual partner (2.1%). The reasons for not using condom on the other hand were preference of skin to skin (91.6%), non-availability of condoms, and a belief that use of a condom creates doubts on trust between sexual partners. While there is good knowledge on the advantages of using condom during sexual encounters, still a large proportion of the labourers preferred skin-to skin sex. Most of the reasons cited for not using condom can be addressed by reviewing the existing information dissemination strategies on STIs and HIV transmission and prevention and adopt innovative and motivating approaches for the young adults to adopt; provide age specific and targeted information about the advantages of condom use during sexual encounters. In addition, effort is needed to institute innovative programmes that will enhance behavioural change that would promote safe sex. The management of the Cobblestone construction sites should design implementable strategies including regularising training on aspects of STIs and HIV transmission and prevention and promote regular testing and treatment of employees who test for STIs and HIV.

6. Conclusion

The Cobblestone construction company employ young labourers that constitute the future generation of human capital for development of Ethiopia. Despite high knowledge of sexually transmitted infections and prevention among the labourers, multiple sexual partners and unsafe sex practices are prevalent. The study has shown that individual and socio-economic factors influencing unsafe sex practices. The Management of the Cobblestone Construction company should introduce measures that will stimulate positive behavioural change among its employees. Introducing regular training sessions on STIs and HIV risk factors, transmission and prevention are likely to promote behavioural changes that would enhance condom use, reduce multiple sexual partners and promote HIV testing and treatment of those testing positive.

Availability of Data and Materials

All data and materials concerning this research article are available for sharing if needed.

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Authors Contribution

WDM developed the project concept which was reviewed by YM and GT. WDM participated fully in the data collection under supervision of YM. All authors participated equally in data analysis, manuscript development and they all formatted and proofread the manuscript several times before submission.

Competing Interests Statement

All authors have declared no conflict of interest on any part of this manuscript.

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