

*Full Length Research Paper*

## Assessment of substance abuse and risky sexual behaviour among female sex workers in Addis-ketema sub city, Addis-Ababa, Ethiopia

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The global burden of substance use is substantial, accounting for 8.9% of productive life lost annually due to disability and premature mortality, as measured in disability-adjusted life-years (DALYs). Among the ten leading risk factors in terms of avoidable disease burden, tobacco was fourth and alcohol fifth in 2000 and both remain high on the list in the 2010 and 2020 projections. Within any HIV epidemic, sex workers have been one of the groups most vulnerable and at risk of HIV infection due to their substance use and multiple sexual partners spanning multiple sexual networks. High rates of other sexually transmitted infections and unsafe sexual practices further increase the probability of HIV transmission in sex workers. As a result of the risks involved and their vulnerabilities. To assess the prevalence of substance use and magnitude of risky sexual behavior and its association with substance use among female sex workers in Addis-ketema sub city, Addis-Ababa, Ethiopia. Community based descriptive cross sectional study which employed quantitative approach was conducted on substance use among Addis-ketema female sex workers from April 1<sup>st</sup> to 30<sup>th</sup> 2015. Structured questionnaire was used to measure the magnitude and associated factors for substance use on a total sample size of 425 Addis-ketema sub-city female sex workers. The sample size was determined by using single population proportion formula and simple random sampling technique was used to get study subjects. Binary logistic regression analysis was carried out to see the association between each independent variable with outcome variable and then variables that showed significant association were included in a single model, and multiple logistic regressions were performed to identify the most significant predictors. This study revealed that a significant proportion (58.2%) of sex workers abused substances. Prevalence of consistent condom use among female sex workers in Addis-ketema Sub-city Addis-Ababa, Ethiopia was 28.1%. Substance use among female sex workers was significantly associated with marital status of the respondents (AOR = 0.5, 95%, CI = 0.21, 0.99), educational status of the respondents (AOR = 0.1, 95%, CI = 0.02, 0.66), monthly income (AOR = 0.6, 95%, CI = 0.27, 1.32), and risky sexual behaviour (AOR = 2.7, 95%, CI = 1.44, 5.18). The overall prevalence of consistent condom use among Addis-Ketema female sex workers was very low and the main predictors of substance use were found to be risky sexual behaviour, marital status knowledge, educational status and monthly income. Therefore, interventions targeting the predictors are recommended.

**Key words:** Substance use, risky sexual behavior, HIV/AIDS.

## INTRODUCTION

History of Substance and drug abuse is as old as history of mankind. Human beings have been using the different parts of plants as medicine for relieving different health conditions. The extent of illicit drug use is mainly seen among the female sex workers (FSW) (Lemma, 2009). In recent years, researchers have begun to explore the intersection of alcohol or drug use and sexual “risk behaviours” activities that put people at increased risk for STDs, unintended pregnancy, and sexual violence. Studies conducted indicate that drinking and illicit drug use often occurs in association with risky sexual activity (Kaiser, 2002). The global burden of substance use is substantial, accounting for 8.9% of productive life lost annually due to disability and premature mortality, as measured in disability-adjusted life-years (DALYs). Among the ten leading risk factors in terms of avoidable disease burden, tobacco was fourth and alcohol fifth in 2000 and both remain high on the list in the 2010 and 2020 projections. Tobacco and alcohol contributed 4.1 and 4.0%, respectively, to the burden of ill health in 2000, while illicit substances contributed 0.8% (Dawit et al., 2006). The Ethiopian government has identified populations who are most at-risk and/or highly vulnerable populations (MARPs) to HIV infection. MARP is defined as a group in a community with an elevated risk for HIV, often because group members engage in some form of high-risk behaviour; in some cases the behaviours or HIV sero-status of their sex partner may place them at risk (USAID, 2012). Within any HIV epidemic, sex workers have been one of the groups most vulnerable and at risk of HIV infection due to their substance use and multiple sexual partners spanning multiple sexual networks. High rates of other sexually transmitted infections and unsafe sexual practices further increase the probability of HIV transmission in sex workers. As a result of the risks involved and their vulnerabilities, HIV prevalence among female sex workers (FSWs) is often much higher than the general population (HAPCO, 2011). The epidemic continues to have a profound effect on female, male and transgender sexworkers. FSWs are 13.5 times more likely to be living with HIV than other women. In 2008, 37% of FSWs in Amhara region were found to be HIV positive (USAID 2012).

A cross-sectional survey in Adama city Ethiopia found that a high prevalence of work-related violence (59%) and alcohol abuse (51%) (Alem et al., 2006). Work-related violence was statistically significantly associated with unprotected sex with regular, non-paying partners among those who abused alcohol (OR: 6.34, 95% CI: 2.43 to 16.56) and among those who did not (OR: 2.98, 95% CI: 1.36 to 6.54). Alcohol abuse was not associated with inconsistent condom use within these partnerships,

though it may strengthen the effect of work-related violence on unprotected sex (Mooney et al., 2013). Different studies and reports tried to estimate the proportion of consistent condom use and associated factors among female sex workers. Some factors like substance use ,alcohol ,non-paying partners and taking incentives that might affect the consistent condom use, the possible factors associated with inconsistent condom use has not been assessed sufficiently yet. Thus it will be quite justifiable to strive in order to get data that inform how sex workers get exposed to unsafe sex. So that it will be possible to design effective prevention strategy. Therefore this study intends to estimate the extent of consistent condom use and associated factors among sex workers in a view to filling the gap. The objective of this study is to assess the prevalence of substance use and magnitude of risky sexual behavior and its association with substance use among female sex workers in Addis-ketema sub city, Addis-Ababa, Ethiopia, to determine the prevalence of substance use among female sex workers, to assess the magnitude of risky sexual behavior among female sex workers and to assess the association between substance use and risky sexual behavior among female sex workers.

## MATERIALS AND METHODS

The study area was in Addis-Ababa, Addis-Ketema sub city (Merkato). Merkato is the biggest open market in Africa, with 289,000 inhabitant, 2893 establishment based, home based and street based female sex workers residing in Merkato and, alot of hotel, bar, cafeteria, Tej bet ,Arake bet, Shisha bet , and brothels found in the sub city. (Addis-Ketema sub city and PSIE, 2012). A cross-sectional study was conducted to determine the prevalence of substance use and its association with risky sexual behavior among female sex workers in Addis-Ababa, Addis-Ketema sub city from April to May 2015. All establishments based, home based and street based female sex workers residing in Addis-Ketema sub city were considered for the study. Establishments based like FSWs working in hotels, bars, nightclubs, groceries, female sex workers working in their residence (brothel based), female sex workers who are working on the street and involving in a sex work during data collection were included. Females who are found in establishments like in hotels, bars, nightclubs, groceries, females found in the residence of female sex workers, on the street and who are not involving in a sex work during data collection were excluded. Sample size was determined using single population proportion formula for cross-sectional study. Taking current prevalence of khat chewing (51.9%) from study done among sex workers Adama, Ethiopia (Alem et al., 2006) to obtain maximum sample size at 95% certainty and a maximum discrepancy of  $\pm 5\%$  between the sample and the population. Adding 10% non-response rate, sample size became 425.

Regarding the sampling procedure, the sampling technique was simple random sampling based on mapping and size estimate (PSIE, 2012). Out of 715 venues of female sex workers, the venues

of the study subjects was randomly selected by assumption of three sex workers from each category of sex workers and by working with relevant governmental organizations, non-governmental organizations and members of the target group in the different venues, a list of locations where FSWs congregated was established, including the approximate number of FSWs found in each venue per day/night. Once the lists were constructed, 'time-location' clusters were used to take into account the possibility that sex workers exhibiting different behaviours might have high activity' and 'low activity' periods (considered by the study), along with the number of sex workers that were typically found at each venues on those nights.

The questionnaire for this study is developed by drawing relevant questions from guidelines and previous researches. The questionnaire addressed variables related to HIV risks demographic, socio economic and behavioural factors influencing sexual behavior. The structured questionnaire that addressed important variables was prepared in English and translated to Amharic. Another translator translated the Amharic version back into English version. Comparison was made on the consistency of the two versions. The Amharic version questionnaires was used for data collection helped both the interviewees and interviewers understand the questions and communicate easily and thereby ensured the quality of the collected data.

#### Data collection and processing

Data collection was done using a standardized, pre-coded, and pretested questionnaire; male and female interviewers were selected. The interviewers had completed high school and had some previous experience of collecting survey data. They were also trained on ways of administering the questionnaire before they started their work. Dependent variables of this study included consistent condom use, multiple sex partners and substance use. Data was entered and cleaned using Epi-Info version 3.5.3. SPSS version 21 was used for statistical analysis. Descriptive statistics was used. Bi-variate and multivariate analysis were employed in order to infer associations and predictions. Odds interval which does not contain 1 was considered statistical significance.

Ethical clearance was obtained from Haramaya university review board also permission was obtained from Addis-Ketema city Administration office, Addis-Ketema sub city health office, bar and hotel owners each of study subject was informed about the study. The data was collected at Woreda health posts (outreach sites). Data collectors was discuss the issue of confidentiality. Informed verbal and written Consent was obtain from the study subjects, the aim of study, potential benefit and risk was discussed and the questionnaires was pre coded in addition the participant has a right to refuse.

#### Operational definition

- 1) Substances: Any non-medical drugs used by study subjects such as alcohol, khat, tobacco, Cannabis, heroin, cocaine, and marijuana to alter their mood or behaviour.
- 2) Life time prevalence of smoking: The proportion of female sex workers who had ever smoked cigarettes in their life time.
- 3) Lifetime prevalence of alcohol drinking: The proportion of female

sex workers who had ever used alcoholic drinks in their lifetime irrespective of the amount and type

- 4) Life time prevalence of khat chewing: The proportion of female sex workers who had ever chewed khat in their life time.
- 5) Current prevalence of cigarette smoking: The proportion of female sex workers who are smoking cigarettes within 3 months preceding the study.
- 6) Current prevalence of khat chewing: The proportion of female sex workers who are chewing khat within 3 months preceding the study.
- 7) Current prevalence of alcohol drinking: The proportion of female sex workers who are drinking alcohol within 3 months preceding the study.
- 8) Sexual risk behavior: Sexual risk behaviours that female sex workers do. In this study it is defined as one of the following; not using condom (inconsistent use of condoms) and consistent condom use (use of a condom during every sexual encounter).

## RESULTS

### Socio-demographic characteristics of the respondents

Out of the total 380 commercial sex workers who responded to the questionnaire, 45 responses were excluded because of gross incompleteness which resulted to a response rate of 90.1%. Most (57.1%) of them were between the age of 18 and 24 years with mean age of 23.4 and standard deviation 6.4 ±years. Place of birth has similar distribution among the cities but rural areas has a smaller amount (11.6%). 58.2% were never married. Majority of the study population were Amahara 155 (40.8%) by ethnicity and the largest 272 (71.6%) were orthodox Christians by religion.

Concerning the educational status of the respondents, majority (56.1%) has attained secondary school (9 to 10 grade level) followed by primary school (1 to 8 grade level, 28.9%). About 170 (44.5%) demonstrated to earn monthly income in 2001 up to 3000 Ethiopian Birr while about 9 (2.4%) had monthly income less than 1000 Ethiopian Birr. About half (192, 50.5%) of the respondents have been working as a commercial sex worker for two to three years, whereas 49 (12.9%) have been working for five years and above. Concerning the reason for being commercial sex worker, 163 (42.9%) was due to financial problem (Table 1).

### Attitude and practice towards condom use

Almost all (373 98.2%) of the respondents think that condom prevent HIV. Concerning the expiry date, only 36 (9.5%) of them think condom could expire. Out of these,

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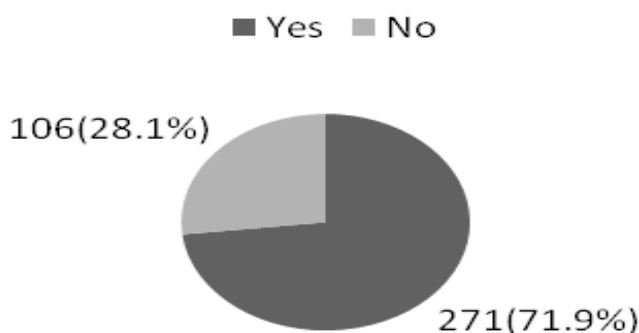
**Table 1.** Socio-demographic characteristics of the study population of female sex workers Addis-Ketema, Addis-Ababa, Ethiopia, March, 2015.

<b>Socio-demographic character</b>	<b>Frequency N = 380</b>	<b>Percent</b>
<b>Age of the respondent</b>		
<18	74	19.5
18 - 24	214	56.3
25 - 40	83	25.8
>40	9	2.4
<b>Place of birth</b>		
Regional city	116	30.5
Addis-Ababa	115	30.3
Rural city	103	27.1
Rural	46	12.1
<b>Marital status of the respondents</b>		
Never married	206	54.2
Married	50	13.2
Divorced	63	16.6
Widowed	19	5.0
Separated	42	11.1
<b>Religion of the respondent</b>		
Orthodox	268	70.5
Muslim	53	13.9
Protestant	59	15.5
<b>Ethnicity of the respondents</b>		
Amhara	155	40.8
Oromo	77	20.3
Tigri	23	6.1
Guragi	46	12.1
Wolayita	58	15.3
Hadya	21	5.5
<b>Educational status of the respondents</b>		
Illiterate	31	8.2
Primary	110	28.9
Secondary	214	56.3
Preparatory	14	3.7
College and above	11	2.9
<b>Monthly income of the respondent in birr</b>		
<1000	10	2.6
1000 - 2000	149	39.2
2001 - 3000	176	46.3
>3000	45	11.8
<b>Work experience as a sex worker in year</b>		
1 - 2	54	14.2
2 - 3	198	52.1

**Table 1.** Cont'd

3 - 5	90	23.7
>5	38	10.0
<b>Reasons for being sex worker</b>		
Financial problem	152	40.0
Death of parents	48	12.6
Divorce of parents	6	1.6
Disagreement with whom you live	89	23.4
Divorce	31	8.2
Peer pressure	54	14.2

### Consistant condom use in the last 12 month



**Figure 1.** Percentage distribution of ever had sex without condom in the last 12 months among commercial sex workers Addis-Ketema, Addis-Ababa, Ethiopia, march 2015.

8 (22.2%) have checked for expiry date of condom. 286 (75.3%) of the respondents did not know that putting condom on male pens without pressing (pinching) the tip of condom could cause condoms rupture, 307 (80.8%) did not know that condom exposed to sunlight could rupture easily and 290 (76.3%) did not put condom on partially erected penis because it could cause its slippage. More than half (214, 56.3%) of the respondents exclusively put condom to their clients. With regard to the reason why the clients did not put condom on their clients; I am ashamed and I do not know how to use it which reported with similar result of 29 (41.4%) (Tables 2 and 3).

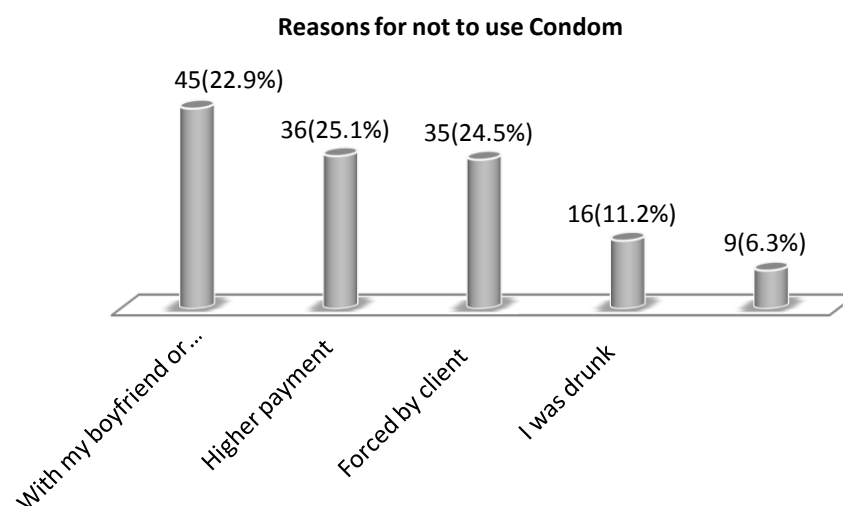
#### Condom use

Among the respondents, it was found that 377 (99.2%) used condom, of those, 106 (28.1%) used condom

consistently in the last twelve months (Figure 1). Majority 288 (75.8%) of the respondents have boyfriend or husband. Of these, 35 (12.1%) always, 38 (13.2%) most of the time, 38 (13.2%) occasionally and 177 (61.5%) never used condom with their boyfriend or husband.

#### Reasons for not using condom

Concerning the sexual act in the last working day, more than half (201, 52.9%) of the respondents were not using condom and the main reason was that 65 (32.4%) requested higher payment, 55 (27.4%) were forced by clients, 45 (22.9%) with boyfriend or husband, 24 (11.9%) said they were drunk and 1(0.5%) condoms not available. And 179 (47.1%) of the respondents used condom. This condom was brought majority 125(69.8%) were herself, 40(22.4%) was client himself and the rest 14 (7.8%) was routinely kept in hotel (Figure 2).



**Figure 2.** Bar graph showing the distribution of the reason why not using condom by commercial sex workers Addis-Ketema, Addis-Ababa, Ethiopia, March 2015

**Table 2.** Knowledge, attitude and practice about STI/HIV of the study population of female sex workers Addis-Ketema, Addis-Ababa, Ethiopia, March, 2015.

<b>KAP towards condom use</b>	<b>Frequency N = 380</b>	<b>Percent</b>
<b>Do you think condoms prevent HIV?</b>		
Yes	374	98.4
I don't know	6	1.6
<b>Do you think condoms could expire?</b>		
Yes	36	9.5
I don't know	344	90.5
<b>Have you ever checked the expiry date of condom?</b>		
Yes	8	22.2
No	28	77.8
<b>Do you think condom which is exposed to sunlight could rupture easily?</b>		
Yes	73	19.2
I don't know	307	80.8
<b>Do you think putting condom on partially erected penis could cause its slippage?</b>		
Yes	59	15.5
No	1	0.3
I don't know	320	84.2
<b>Do you think putting condom on male penis without pressing (pinching) the tip of condom could cause condoms rupture?</b>		

**Table 2.** Cont'd.

Yes	88	23.2
No	2	0.5
I don't know	290	76.3
<b>Who puts a condom to your client?</b>		
Exclusively themselves	70	18.4
Exclusively myself	214	56.3
Either of us	96	25.3
<b>If you have ever put condoms to your clients why don't you put on a condom to on them?</b>		
I am ashamed of it	29	41.4
I do not like it	3	4.3
They do not ask me for it	9	12.9
I do not know how to use it	29	41.4

**Table 3.** Alcohol use of the study population of female sex workers Addis-Ketema, Addis-Ababa, Ethiopia, March, 2015.

<b>Alcohol use</b>	<b>Frequency N = 380</b>	<b>Percent</b>
<b>Have you been consuming drink containing alcohol?</b>		
Yes	193	50.8
No	187	49.2
<b>Did you get intoxicated in the last day of sexual intercourse?</b>		
Yes	73	37.8
No	120	62.2
<b>If yes, did you encounter sex without condom because of alcohol intoxication?</b>		
Yes	53	72.6
No	20	27.4
<b>In the last three months did you encounter sex without condom because of alcohol intoxication?</b>		
Yes	99	51.3
No	94	48.7

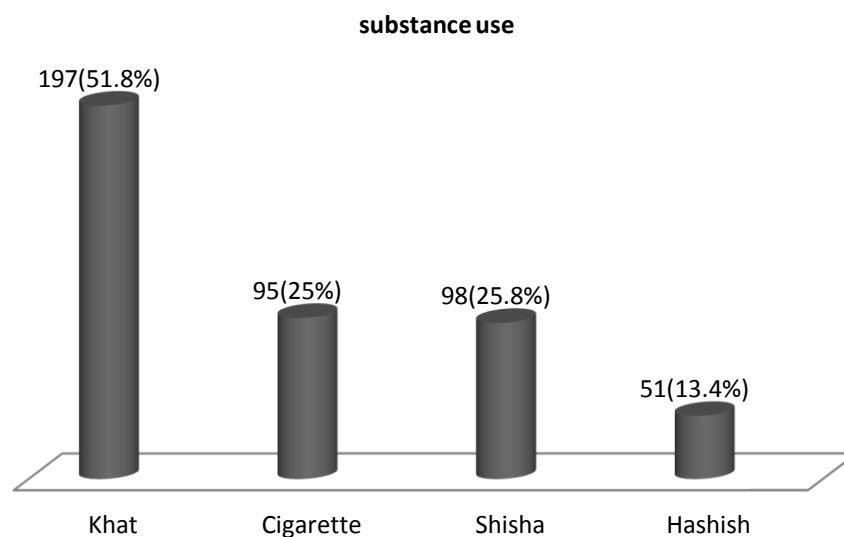
**Substance use****Alcohol use**

Half (193, 50.8%) of the respondents were drinking alcohol. Majority 137 (70.9%) of the respondents was drinking alcohol every day. Out of these, 73 (37.8%) was intoxicated in the last day of sexual intercourse. Majority (53, 72.6%) of these intoxicated by alcohol encountered sex without condom. Also, in the last three months, more than half 99 (51.3%) of the respondents did not use

condom because of alcohol intoxication (Table 4).

**Other substance use**

On the other hand 221(58.2%) of the respondents consumed substance. The most widely used substance was khat (197, 51.8%) followed by Shisha (98, 25.8%) (Figure 3). Majority (158, 1.5%) of the respondents consumed substance every day. Out of these, almost all (197, 89.1%) consumed substance in the last day of



**Figure 3.** Percentage distribution of substance use among commercial sex workers Addis-Ketema, Addis Ababa, Ethiopia, March 2015

**Table 4.** Substance use of the study population of female sex workers Addis-Ketema, Addis-Ababa, Ethiopia, March, 2015.

<b>Substance use</b>	<b>Frequency N = 380</b>	<b>Percent</b>
<b>Have you consumed substance?</b>		
Yes	221	41.8
No	159	58.2
<b>How often have you used?</b>		
Every day	158	71.5
At least once week	5	2.3
Two to three times a week	30	13.6
Four or five times a week	9	4.1
Any time if available	19	8.5
<b>Did you consume substance in the last day of sexual intercourse?</b>		
Yes	197	89.1
No	24	10.9
<b>Did you encounter sex without condom because of substance use?</b>		
Yes	149	75.6
No	48	24.4
<b>In the last three months did you encounter sex without condom because of substance use?</b>		
Yes	154	69.7
No	67	30.3



Table 4. Cont'd.

If yes how many times?		
Once	38	24.7
Twice	53	34.4
Three times	58	37.7
Four and above	5	3.2

intercourse and 149 (75.6%) of the respondents encountered sex without condom because of substance use. Moreover, in the last three months, majority 154 (69.7%) did not use condom because of substance use (Table 5).

#### Association between predictor variable and consistent condom use

Using the binary logistic regression, an association between use of substance and socio-demographic character (age, marital status, educational status, and average monthly income) and other variables was made. This result shows there was significant difference in the marital status among those who were never married, married, divorced, widowed and separated and those who were married were 0.5 times more likely to use substance than those who were never married, divorced, widowed and separated.

With regards to educational status of the respondents, there was significant difference in the educational status among those who were illiterate, primary, secondary, preparatory and college and above and those who were illiterate were 0.1 times more likely to use substance than those who were primary, secondary, preparatory and college and above. Furthermore there was significant difference in income, those who were gaining 2001 to 3000 were 2.5 times more likely to use substance than those who were gaining <1000, and 1001 to 2000. Concerning the risky behaviour, there is a statistically significant difference. Those who have risky behaviour were 2.7 times more likely to use substance than those who have not used substance

## DISCUSSION

In this study a significant proportion (58.2%) of sex workers abused substances. This prevalence was higher than the report from female sex workers of seven urban cities of Ethiopia (12%) (Sam 2013). This difference may be due to the difference in study area and period. The findings of this study revealed that the commonly abused

drugs were Khat (51.8%), alcohol (50.7%), Shisha (25.8%), cigarette (25%) and hashish (25%). Apart from the prevalence, this is in agreement with findings in female sex workers of Adama city Ethiopia, alcohol abuse was 51% (Alem et al., 2006). A study conducted in seven urban cities concluded that unprotected sex and symptom of STI were associated with substance use (Sam 2013). Similarly this result also showed that substance use was associated with risky sexual behaviours. Those who have risky behaviour were 2.7 times more likely to use substance than those who have not used substance. Also, the association between alcohol use and inconsistent condom use among FSWs has also been documented by other studies (Chiao et al., 2006).

The overall prevalence of consistent condom use among sex workers was 28.1%. This magnitude was lower than the study conducted in seven urban centers in Ethiopia which was 88% (Sam, 2013). The major explanation for such discrepancy may be due to the difference in variation of sampling techniques of the two studies and due to time difference of research as well as the study area. The current study was not in accordance with a finding in Ethiopia 2012, where the prevalence of consistent condom use with non-regular partners was 98.4% (Witte et al., 2010). The discrepancy might be due to different reasons including variation in sampling technique. Moreover, the prevalence of consistent condom use in this study was lower than a study done in Metro Manila, Quezon City, Philippines, where a prevalence of 58% was reported (Chiao et al., 2006). This difference might be due to extreme poverty (42.9%), and family disruption (20.5%) was the common motivation to becoming a female sex worker. Also this idea was supported by a qualitative study done in china which identified that unreasonable trust toward clients, stereotypes and assumptions about customers, and financial incentives were reasons for agreeing to have sex without condoms (DKT, 2012).

#### Limitation of the study

The major limitation of this study was the nature of cross

**Table 5.** Association substance use with the selected socio- demographic characteristics and other variables within the past twelve months Addiss-Ketema sub city Addis-Ababa Ethiopia, March, 2015

Variables	Substance use		Crude OR (95% CI)	Adjusted OR (95%CI)
	Yes	No		
<b>Age of the respondent</b>				
<18	17	57	2.7 (0.65 - 11.12)	1.6 (0.05 - 2.08)
18 - 24	64	148	1.9 (0.48 - 7.12)	0.4 (0.07 - 2.53)
25 - 40	21	61	2.3 (0.57 - 9.47)	0.3 (0.05 - 1.74)
>40	4	5	1	1
<b>Marital status of the respondent</b>				
Never married	68	137	0.8 (0.42 - 1.61)	1.3 (0.56 - 3.01)
Married	7	43	5 (1.86 - 13.84) *	0.5 (0.21 - 0.99) **
Divorced	13	48	1.7 (0.74 - 3.69)	0.4 (0.16 - 1.25)
Widowed	6	13	0.9 (0.31 - 2.72)	1.2 (0.25 - 4.43)
Separated	12	30	1	1
<b>Religion of the respondent</b>				
Orthodox	82	185	0.9 (0.54 - 1.68)	1.5 (0.73 - 3.14)
Muslim	10	42	1.6 (0.72 - 3.38)	1 (0.36 - 2.79)
Protestant	14	44	1	1
<b>Educational status of the respondents</b>				
Illiterate	10	21	2.8 (0.67 - 11.52) *	0.1 (0.02 - 0.66)**
Primary	27	82	3 (0.84 - 11.11)*	0.1 (0.19 - 0.61)
Secondary	62	150	2.2 (0.62 - 7.71)	0.1 (0.03 - 0.77)
Preparatory	6	8	3.2 (0.61 - 16.31) *	0.1 (0.01 - 0.75)
College and above	1	10	1	1
<b>Monthly income of the respondent in birr</b>				
<1000	5	5	6.5 (1.18 - 35.19)*	2.1 (0.45 - 10.32)
1000-2000	41	107	3.9 (1.62 - 6.60)*	0.8 (0.35 - 1.83)
2001-3000	44	130	3.6 (1.53 - 8.77) *	0.6 (0.27 - 1.32)**
>3000	16	29	1	1
<b>Work experience as a sex worker in year</b>				
1 - 2	18	36	1.3 (0.55 - 3.09)	0.8 (0.26 - 2.42)
2 - 3	51	145	1.9 (0.89 - 3.83) *	0.6 (0.23 - 1.49)
3 - 5	22	67	1.9 (0.88 - 4.46) *	0.6 (0.20 - 1.52)
>5	15	23	1	1
<b>Risky behaviour</b>				
Yes	75	116	0.4 (1.99 - 0.67) *	2.7 (1.44 - 5.18)**
No	31	155	1	1

sectional study which may not explain the temporal relationship between the outcome variable and some

explanatory variables. The study topic by itself assesses personal and sensitive issues related to sexuality which

might have caused social desirability. Bias measurements probably could influence the output of this study. Thus, the finding of this study should be interpreted with these limitations.

## CONCLUSION

The prevalence proportion of substance use among Addis-Ketema female sex workers was 58.2%. This study revealed that the commonly abused drugs were Khat (51.8%), alcohol (50.7%), shisha (25.8%) cigarette (25%) and hashish (25%). The study also showed that 71.9% of the female sex workers were engaged in unsafe and risky sexual practices. Risky sexual behaviour, monthly income, marital status and educational status were significantly and independently associated with substance use among Addis-ketema female sex workers.

## RECOMMENDATIONS

Based on the findings of the study and understanding the nature of the sex worker:

- 1) The prevalence of consistent condom use in the study area was low; therefore the policy makers and concerned bodies should design appropriate program and strategies on consistent condom use.
- 2) Addis-Ababa health bureau should introduce condoms in the compound and strengthening information, education and communication activities through Medias, newspapers and peer group discussions collaborating with DKT-Ethiopia.
- 3) Concerned bodies better focus on interventions that deal with educational status, marital status, age, and consistent condom use need to be focused on.

## Conflict of interests

The authors declare that they have no competing interests.

## ACKNOWLEDGMENT

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