

The Preventive Practice of and Associated Factors of HIV/AIDS among Female Sex Workers in Dessie Town, Northeast Ethiopia, 2017

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Abstract

Background: Commercial sex workers have been recognized as the high risk segment of the population since the last three decades. Though few studies have been conducted to dates in Ethiopia, all of them are focusing on the knowledge of female sex workers towards HIV/AIDS. However, no study has been done to assess the preventive practices of HIV/AIDS among female sex workers in Ethiopia as well in the study area. Therefore, this study aims to assess comprehensive knowledge and preventive practice of HIV/AIDS among female sex workers in Dessie town, North West Ethiopia, 2017.

Methods: A quantitative community based cross-sectional study triangulated with qualitative methods was employed among 592 female sex workers from 15th April 2017 to 25th May 2017 in Dessie town. A standardized, pretested and structured interviewer administered questionnaire, in-depth interview and observation were used to collect the data. The study participants were selected by employing multistage cluster sampling technique. Bivariate and multivariable logistic regression was employed to determine the association between dependent and explanatory variables. Statistically significant level was declared at P-value less than 0.05. Transcription and narration was done for the qualitative section.

Result: About 54.8% of female sex workers had good preventive practice of HIV/AIDS. After adjustment; alcohol consumption (AOR=0.25; 95% CI=0.11, 0.39) and khat chewing (AOR=0.28; 95% CI=0.15,0.62] were found the hindering factors of preventive practice but being membership with organizations those working on HIV/AIDS (AOR=2.55,95% CI=1.52-4.27) was found significantly associated with preventive practice of HIV/AIDS among FSWs.

Conclusion: The preventive practice of HIV/AIDS among female sex workers was found suboptimal. Therefore, the government, stakeholders and the community should give high attention to the high risk segment of population. Further analytic studies should be done on this area to explore more information on the determinant factors of knowledge and preventive practice of HIV/AIDS among female sex workers and other high risk groups.

Keywords: Preventive practice; Female sex workers; Community; Chronic illness

Introduction

Acquired Immunodeficiency Syndrome (AIDS) is a chronic illness caused by Human Immunodeficiency Virus (HIV) that damages a person's ability to fight the disease and leaving the body vulnerable to ordinarily innocuous infections [1]. Sex workers have been among the populations most affected by HIV since the beginning of the epidemic for more than three decades. In both concentration and generalization of the epidemics, HIV prevalence is considerably 12 times higher among commercial sex workers than in the general population. Sex workers often have little control over these factors because of social marginalization and the criminalization of sex work [2].

The global HIV prevalence among female sex workers (FSWs) has been estimated at 11.8%. Of these, the highest prevalence (36%) found concentrated in sub-Saharan Africa thus leading to the classification of

the group as a higher-risk [3]. In Ethiopia, discrepancies in socio-economic status have forced an increasing number of people to seek any source of income, including female sex selling. The survey conducted by PSI in collaboration with Dessie Town Bureau of Labor and Social Affairs (BoLSA) in 2016 has estimated that there are nearly a half thousand (4655) female sex workers found in Dessie Town, Amhara Regional state [4]. The hotspot survey result showed that the town has the third highest number of female sex workers (FSWs) next to Bahir Dar and Gondar town.

According to 2012 progress report of Ethiopia, only 42.3% of Female sex workers reached by HIV prevention program. In the same year, from 44.8% FSWs tested for HIV 25% were found Positive [5]. The study conducted in Gondar town on street FSWs on condom utilization practice revealed that 57.4% of female sex workers were consistently condom use during any sexual practices [6]. Studies conducted across Africa found that sex workers in many places are highly vulnerable to HIV and other sexually transmitted infections due to multiple factors. The identified factors were; having many sex

partners, hazardous working environment, alcohol consumption, smoking, drug use, physical violence and barriers in the negotiation of consistent condom use [7,8].

Different strategies, policies, programs have been tried in the past to reduced transmission and the incidence of new cases of HIV at global, regional and national levels. In particular, HIV prevention and care strategies were focusing on the already affected part of population [9-11]. As a result, much has changed in the response to HIV over the last three decades, especially in the areas of prevention, testing and treatment. What remains in missing is a respectful and inclusive response to marginalized and vulnerable populations including sex workers were given little attention across the globe especially in Sub-Saharan countries including Ethiopia [2]. Moreover, to the best of the researchers' knowledge no study has been conducted in the district to assess the preventive practice and associated factors of HIV/AIDS among FSWs. Therefore, this study will generate more evidence to close this information gap in the study area.

Methods and Materials

Study setting and participants

Community-based cross-sectional study design triangulated with qualitative method was employed from 15th April 2017 to 25th May 2017 among female sex workers resided in Dessie Town, North-Eastern Ethiopia. Dessie Town is located 401 Kms away from the capital city, Addis Ababa. The city has a total population of 301, 241. Of these, 4655 are female sex workers those are making their business by selling sex in Bars, Red-lights, hotels and home based establishments [4]. It has also different levels of hotels, night clubs, 06 public health facilities (01 referral hospital and 05 health centers). It has also different lower level of private health facilities and 04 private general hospitals.

To determine the required sample size, both single population proportion and double population proportion formals were used for the two specific objectives but the larger sample size was obtained by using single population proportion formula. Therefore, the sample size 592 was calculated by using a single population proportion formula with assumptions: 5% type I error, 95% CI, 57.4% of level of preventive practice of HIV/AIDS among Female Sex Workers (FSWs) resided in Northwest Ethiopia was taken as population proportion [6], Design effect of 1.5 and an estimated non-response rate of 5%.

$$n = (Za/z)^2 (P) (1-P)/d^2$$

Where; n=required sample size, $Za/2$ =critical value for normal distribution at 95% confidence level (1.96), p=The level of preventive practice of HIV/AIDS among FSWs, DEFF=Design effect of intra cluster homogeneity and d=Type I error). Based on the above assumptions, the final required sample size required for the study was 592. The study participants included in the study were FSWs resided in Dessie town for at least six months, were at least 15 years of age, able to hear, mentally oriented, and not seriously sick were included in this study.

From the total 10 lower administrative units (Kebeles) found in Dessie town, 5 were identified as Hotspot Kebeles then 3 kebeles were selected randomly and all of the female sex workers resided in the selected three kebeles (lower administrative unit) were studied by using cluster sampling technique (Figure 1).

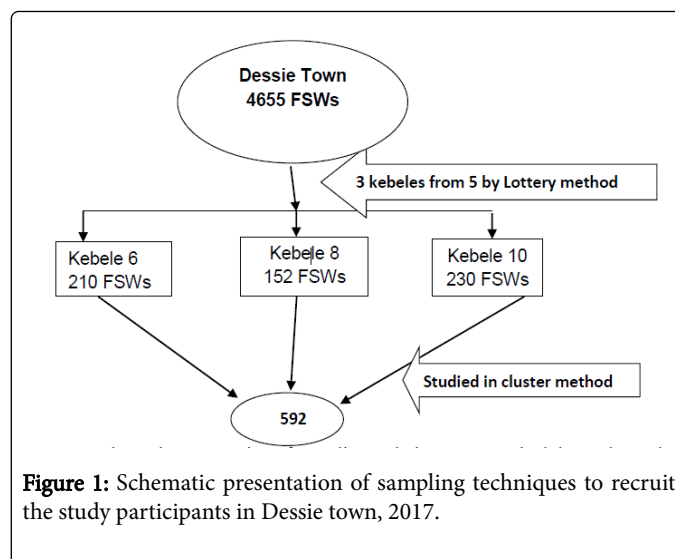


Figure 1: Schematic presentation of sampling techniques to recruit the study participants in Dessie town, 2017.

The qualitative data collection was conducted by observation of condom demonstration using penile model among five (05) participants and nine (09) in-depth interview among the three types of FSW (Hotel based, Home based and street based) until the required data was saturated by using observation and in-depth interview guiding tools.

Data processing and analysis

The standardized, pretested and semi structured interviewer administered questionnaire was used to assess the preventive practice of HIV/AIDS and associated factors among FSWs by including important variables for the study and was organized by sections for socio-demographic, behavioral factors, knowledge of condom use, practice of consistent condom use, and other life style related factors.

The tool was also checked for clarity and consistency; it was pretested in two Lower administrative units (Kebeles) of Dessie town on 5% of FSWs to address any unclear or misunderstood questions and corrections were made based on the pretest findings. The data was collected by six trained B.Sc. nurses. The questionnaire was translated from English version to the local language (Amharic) and again back to English version.

The qualitative part was collected by using observation of condom demonstration and in-depth interview by using tape recorder with participation of all type of female sex workers. The data were collected at convenient time to study participants which was at night and day time.

The preventive practice was measured by asking:

- Do you consistently use condom for any sexual intercourse even with your constant partner?
- Do you share any sharpen materials with any on else around you?

FSWs who answered both questions were defined as having adequate level of preventive practice of HIV/AIDS.

The data was cleaned, coded and entered in to Epi data version 3.1 software and exported into SPSS version 20.0 for analysis. The descriptive analysis was done and the results were displayed in the form of texts, tables, and figures. Then binary logistic analysis was conducted to measure the association between the dependent variable

with each independent variable: Socio-demographic, socio-economic, and behavioral factors, condom utilization related factors were among included factors using odds ratio with 95% confidence interval.

Finally, multivariable logistic regression analysis was done in order to control possible potential confounders and to identify predictors of comprehensive knowledge and practice of condom utilization among FSWs. Statistical significance was declared at P-value<0.05.

The qualitative data was transcribed, translated, transferred in to open code software version 3.6, read repeatedly, coded and categorized thematically. Finally, it was interpreted with thematic analysis.

Results

Participants' socio-demographic characters

A total of 584 female sex workers were interviewed with the response rate of 98.6%. Six condom demonstration observations by using penile model and seven in-depth interviews were conducted.

Of the total respondents; 46.7% were in the age group above 25 years, the mean age was 24.6 ± 5.3 SD (16-47 years), 31.5% of FSWs were unable to read and write, 53.4% were single, 33.7% were divorced and 62.5% of respondents had history migration from rural areas (Table 1).

Variables	Category	Number of FSWs	Percentage (%)
Age (in years)	15-19	101	17.3
	20-24	211	36
	≥ 25	272	46.7
Completed educational level	Can't read and write	184	31.5
	Only read and write	128	21.9
	Attend elementary school	170	29.1
	Attend Secondary school and above	111	19
Religion	Orthodox	523	89.6
	Muslim	32	5.5
	Protestant	16	2.7
	Catholic	13	2.2
Current marital status	Single	312	53.4
	Married	29	5
	Divorced	190	32.5
	Widowed	53	9.1
Residence before joining FSW	Urban	219	37.5
	Rural	365	62.5

Table 1: Socio-demographic characteristics of FSWs resided in Dessie Town, North-Eastern Ethiopia, 2017.

Classification and participation of female sex workers

Based the establishment, near to half (48%) of the participants were categorized as Hotel based FSWs, 40% were Home based FSWs and 12% were Street based female sex workers (Table 2).

HIV/AIDS knowledge of FSWs

Almost all of the participants (98.2%) have ever heard about HIV/AIDS from different information sources but only 377 (64.7%) of FSWs had adequate knowledge towards HIV/AIDS.

Regarding the HIV related knowledge; 89% of the participants know that consistent condom use can reduce HIV transmission, 82% know healthy looking persons can be HIV carriers, 19.7% of the FSWs belief

that HIV can be transmitted through insect bites and 18.5% of the participants perceived that HIV can be transmitted via eating together with infected persons.

Of the total respondents; 60.5% of participants knew that Female sex workers are most at risk for HIV infection (Table 3). The qualitative findings also support that FSWs correctly identified that HIV/AIDS is not curable disease, unsafe sex is the major way of HIV mode of transmission and condom can prevent the transmission.

A 20 years old street based FSW said that "I know all HIV/AIDS transmission and prevention methods that is why I did not had sex without condom and did not share sharp material with anyone else around me even with my children".

Variables	Category of variables	Frequency	Percentage (%)
Type of female sex workers	Hotel based	280	48
	Home based	234	40
	Street based	70	12
Membership with HIV/AIDS related associations	Yes	337	57.7
	No	247	42.3
Took any HIV related trainings	Yes	365	62.5
	No	219	37.5
Ever worked as peer educator	Yes	206	35.3
	No	378	64.7

Table 2: Classification of FSWs based on their establishment in Dessie Town, North-Eastern Ethiopia, 2017.

Knowledge related questions	Number of FSWs	
	Yes	No
Is using condom consistently can reduce the chance of HIV infection?	521 (89.2%)	63 (10.8%)
Does healthy looking person may have HIV/AIDS in blood?	480 (82.2%)	104 (17.8%)
Does HIV/AIDS can be transmitted by mosquito bite?	115(19.7%)	469 (80.3%)
Does HIV/AIDS can be transmitted by eating together?	108 (18.5%)	476 (81.5%)
Does having uninfected faithful partner can reduce the chance of getting HIV infection?	220 (37.7%)	364 (62.3%)
Are Female Sex Workers at risk of HIV/AIDS?	353 (60.5%)	231 (39.5%)
Had adequate knowledge about HIV/AIDS*	377 (64.6%)	207 (35.4%)

Table 3: Knowledge of FSWs towards HIV/AIDS of FSWs in Dessie Town, North-Eastern Ethiopia, 2017 [*Yes=If answered correctly all of the five questions].

Behavioral factors and HIV/AIDS among FSWs

Of the total respondents, 320 (54.8%) had HIV/AIDS preventive practice and 65.6% of them use condom always and consistently. The study also revealed that 66.3% of the study participants use any substance. Of those substance users; 43.1% use alcohol, 38.6% use khat and the rest 18.3% use both alcohol and khat together (Table 4).

In the qualitative methods, most FSW demonstrated condom properly starting from checking the expiry date by presence of air or

reading the expiry date to proper removal of condom after utilization. This showed proper condom utilization of FSWs.

The in-depth interview and condom demonstration also supported that most of FSWs used condom always and properly. 28 years old home based FSW said that "I did not drink more and I did not agree even when customer need sex without condom to pay more money above the agreement."

Variables	Category	Number of FSWs	Percentage (%)
Type of sexual clients	Unknown person	290	49.3
	Any person who can pay	117	20
	Tourist	108	18.5
	Student	115	19.7
	Merchant	118	20.2
	Others	66	11.3

Condom use during last sex?	Yes	521	89.2
	No	63	10.8
Frequency of condom use	Never use	32	5.5
	Sometimes	60	10.3
	Most of the time	109	18.7
	Always	383	65.6
	Refusal by partner	80	39.8
Reason for not consistently use condom? (n=201)	got drunk	52	25.8
	trust my partner	47	23.4
	Others	20	10
Type of substance used	Alcohol	165	43.1
	Khat	148	38.6
	Other	70	18.3
Preventive practice of FSWs towards HIV/AIDS	Consistently use condom	384	65.7
	Not sharing sharpen materials	471	80.7
Had adequate level of HIV/AIDS preventive practice		320	54.8

Table 4: Behavioral factors and HIV/AIDS preventive practice of FSWs in Dessie Town, North-Eastern Ethiopia, 2017.

Factors associated with preventive practice

Regarding HIV/AIDS preventive practice; alcohol consumption (AOR=0.25; 95%CI=0.11,0.39) and khat chewing (AOR=0.28; 95% CI=0.15,0.62) were found hindering factors of preventive practice but

being membership with organizations those working on HIV/AIDS (AOR=2.55,95% CI=1.52-4.27) was found significantly associated with preventive practice of HIV/AIDS among FSWs (Table 5).

Independent variables		Preventive Practice of HIV/AIDS		COR (95%CI)	AOR (95% CI)
		Yes	No		
Age	15-19	50	51	1	1
	20-24	129	82	1.61(1.00,2.61)	0.98(0.51,1.89)
	≥ 25	160	112	1.46(0.92,2.32)	0.93(0.47,1.83)
Residence of FSWs	Urban	117	102	0.73(0.52,1.02)	0.96(0.59,1.55)
	Rural	223	142	1	1
Adequate Knowledge on HIV/AIDS	No	85	122	1	1
	Yes	112	265	0.61 (0.53,1.07)	1.02(0.64,1.65)
Kind of substance use	Alcohol	67	98	0.38 (0.36, 0.68)	0.25 (0.17,0.49)*
	Khat	50	98	0.29 (0.16,0.53)	0.21 (0.13,0.52)**
	Other	45	25	1	1
Membership of an association	No	111	136	1	1
	Yes	229	108	2.59(1.85,3.64)	2.55(1.52,4.27)**

Gotten any training related to HIV/AIDS	No	112	107	1	1
	Yes	228	137	1.59(1.13,2.23)	1.36(0.81,2.31)
Work as peer promoter	No	202	176	1	1
	Yes	138	68	1.76(1.24,2.51)	1.66(0.96,2.86)

Table 5: Factors associated with preventive practice of FSWs for HIV/AIDS in Dessie Town, North-Eastern Ethiopia, 2017 [*=P-value less than 0.05 and **=p-value less than or equal to 0.001].

Discussion

Studies conducted in Africa revealed that female sex workers had adequate knowledge and awareness regarding to HIV/AIDS compared to the other segment of population. However, FSWs had suboptimal level of preventive practice of HIV/AIDS. Therefore, this study aims to assess the level of preventive practice of HIV/AIDS and associated factors among female sex workers in Dessie Town, North-Eastern Ethiopia, 2017.

The study revealed that 64.7% of Female sex workers (FSWs) had adequate knowledge of HIV/AIDS in Dessie town. This result is higher than the study done in Gondar town street sex workers (31.4%) [12], study done in Northern Uganda youth (29%) [13], the 2014 Ethiopian progress report on the HIV/AIDS response for female general population (18%) [14], the study done in Wayu Tuka district, western Ethiopia (25%) [15] and the EDHS 2011 female 15-49 years (19%) [16]. This might be due to the current better involvement of governmental interventions after the priority setting of HIV/AIDS high risk segment of population. On top of this, the study population variability (in terms of socio-economic and demographic characters), the study participants resided in urban can have more access of information about HIV/AIDS via social medias like radio and television, and study period variability.

The qualitative findings also support that, a 23 years old hotel based FSW said "HIV transmit by unsafe sex, mother to child, using sharp material together and by blood. Using condom always and not sharing sharp materials together are the preventive methods. And also HIV cannot transmit by eating together, by mosquito bite and using toilet together".

The study revealed that 54.8% of the study participants had adequate level of preventive practice of HIV/AIDS and 65.7% of them were consistently used condom in every sexual intercourse even with their constant partners. The level of HIV/AIDS preventive practice among FSWs in this study was found lower than the study done in Ecuador (56.9%) [17], study done in Eastern Ethiopia (54.7%) [18], study conducted in Nepalian FSWs (82.2%) [19], Study done in china (59.6%) [20] and study done among Chili FSWs (93.4%) [21]. The discrepancy might be due to higher cut off point in this study, geographical, time, socio-economic and community awareness variations across the study areas.

The study found that alcohol consumption (AOR=0.25; 95% CI=0.11,0.39) and khat chewing (AOR=0.28; 95% CI=0.15,0.62) were found hindering factors of preventive practice compared with the non-users. This finding is line with study done in India among FSWs [22]. This shows using either combined or separated substance may lead to forgetting of consistent condom use and increased the risk of acquisition of HIV and other sexually transmitted infection among risky groups and the larger population.

The study found that FSWs who were member of organizations working on HIV/AIDS program had 2.55 times (AOR=2.55; 95% CI=1.52,4.27) more likely to have HIV/AIDS preventive practice compared with FSWs who were not working as members. This indicates that as there is exposure on HIV/AIDS related program the preventive practice will increase simultaneously.

The in-depth interview also showed that the exposure of MARPs program increased their knowledge and preventive practice gradually. The program capacitates the skill to negotiate condom use with clients. The study could have the following limitations. Firstly, it was difficult to establish a cause-effect relationship and the study also shares the limitation of cross-sectional study design. However, the study was supplemented with qualitative study method and due attention was given to the study procedures, including the process of training, and close supervision throughout the field activities.

Conclusion

Female sex workers in in Dessie Town have below median comprehensive knowledge on HIV/AIDS. Comprehensive knowledge of FSWs on HIV/AIDS was found associated with young age group, higher educational level and working as peer promoters. The in-depth interview and condom demonstration observation also supported that FSWs' comprehensive knowledge and preventive practice improved with exposure to MARPs program. The predictors of preventive practice of fsws were substance use and being membership with organizations working on HIV/AIDS program. Therefore, the government should give high attention for the female sex workers regarding awareness creation to build good comprehensive knowledge to reduce the transmission of new HIV infection among high risk groups including FSWs and in the larger population too. Further, qualitative researches are highly demanding to explore the knowledge, attitude and practice of FSWs towards HIV/AIDS.

Ethical Issues

Ethical clearance was obtained from the Alkan College of Health Science, Department of Public Health. The participants recruited into this study were resident of Dessie town; were involved in the study after confidentiality, benefits, risks to participating, justice, rights to deny well explained. Finally, those who were willing to participate in the study and gave verbal informed consent were included. Moreover, the results were disseminated to the responsible bodies who were involved in the health care activities of FSWs.

Competing Interests

The authors declare that they have no competing interests.

Authors' Contributions

All authors conceived and designed the study. FY, AW and NM supervised the data collection. YM, NM and AW performed the data analysis, interpretation of data and drafted the manuscript. AW, NM, YM and FY had interpreted and critically reviewed the manuscript. All authors read and approved the final manuscript.

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