



OPEN Factors influencing to early initiation of sex work among female street sex workers in Jimma and Agaro Towns, Southwest Ethiopia

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Early initiation of street sex work refers to the exchange of sexual services for money or drugs, which occurs when sex workers solicit customers in public street areas before turning 18 years old. The study explores the early initiation of risky street sex behaviors among female street sex workers in two towns in southwest Ethiopia. A cross-sectional study was conducted among 219 female street sex workers in Jimma and Agaro towns. Data was collected through face-to-face interviews in five key population clinics (KPCs) from April 15 to September 15, 2024, and analyzed using SPSS version 25. The Variables with a p-value of less than 0.05 were considered significant. This study revealed that more than half of teenage girls were 54.2% (110), were engaged in early street sex work. Being illiterate, having illiterate parents, migration, a history of rural residence, and substance use were factors significantly associated with early street sex work initiation. Encourage and assist the less educated participants to finish their education, stop migrating by strongly penalizing misbrokers, and educate the young girls about the negative effects of various forms of substance usage.

Keywords Early initiation, Street sex work, Teenagers, Jimma, Ethiopia

Abbreviations

AIDs	Acquired Immune Deficiency Syndrome
CSAL	Childhood Sexual Abuse
CSW	Commercial Sex Workers
EDHS	Ethiopian Demographic and Health Survey
FSWs	Females-sexually workers
SFSWs	Street Female Sex Workers
SSA	Sub-Saharan Africa
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
UNAIDS	United Nations Program on HIV/AIDS
USA	United States of America
WHO	World Health Organization

Early initiation of street sex work refers to the exchange of sexual services for money or drugs. This occurs when sex workers solicit customers in public street areas before turning 18 years old¹. Female sex workers (FSWs) often start their involvement at an early age, with 20–40% engaging before 18, with an average age of 16 or younger^{1,2}. Estimates of the prevalence of female sex among street youth range from 10% to 50% in the United States and from 12% to 32% in Canada³. Different researchers define street sex work in various ways, including

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both monetary compensation and the exchange of essential items like food, housing, and survival necessities. However, the fundamental concept remains the exchange of sexual behaviors^{4,5}.

A study indicates that childhood trauma, such as substance abuse, homelessness, and physical and sexual abuse, plays a significant role in young females entering street sex work at an early age^{6,7}. However, in Sub-Saharan Africa, teenagers are more likely to engage in sex work in exchange for material necessities, with a strong correlation between poverty and sex work among the most disadvantaged individuals⁸. Street-sex workers, particularly minors, engage in harmful behaviors like smoking, alcohol consumption, and pornography, influenced by factors like religion, financial resources, geographic region, and education^{9–11}.

Studies conducted in India, Nepal, Thailand, and Canada highlight significant risks associated with early sexual activity. Individuals engaged in street sex are two to four times more likely to contract sexually transmitted infections, HIV/AIDS, and STIs^{12,13}. Young women, particularly those in informal sex work, are at a higher risk of HIV and STIs due to their lack of condom use and high-risk relationships^{14–16}.

The purpose of this study is to close this gap by determining the factors that lead female street sex workers in Jimma and Agaro towns to initiate sex work early. Information about early street sex work initiation and targeted public health programs to reduce the rate of HIV/AIDS and sexually transmitted diseases among these study groups is provided. Neighborhood-based initiatives that improve the resilience and well-being of individuals who are at risk can also benefit from the findings. The study's findings can help address the root causes of the early initiation of street sex work and guide evidence-based policy, all while filling in the gaps in empirical research.

Early commencement of street sex work is a global problem for reproductive health around the world, and this issue concerns more prevalent in low- and middle-income countries^{17–19}. Adolescent girls and young women account for 34% of new HIV infections globally, with 80% in sub-Saharan Africa. However, in Eastern and Southern Africa^{20,21}, new HIV infections among girls aged 10–19 decreased by 25% between 2010 and 2017, while there was no fall in West and Central Africa, according to UNAIDS^{22,23}.

Female Street sex workers and teenage girls in Baltimore and Mexico-US border cities are significantly affected by STIs, with 28% having an STI, 15% having chlamydia, and 18% having gonorrhea^{18,24}. Adolescent girls contribute to 14% of unsafe abortion-related deaths globally, with 252,000 unintended births annually²⁵. Unplanned first sexual experiences increase risk for HIV, sexually transmitted diseases, and unplanned pregnancy²⁶.

Early initiation of sex work may be linked to violence due to diminished bargaining power and self-efficacy with paying partners, with global lifetime prevalence estimates ranging from 45 to 75% in 2012 and 32–55% in 2013^{27,28}. A Moscow study revealed that 37% of street-based FSWs experience violence, while a Canadian cohort study revealed 57% of 237 female sex workers experienced gender-based violence over 18 months^{29,30}.

Research on street-based sex work in India and Britain, sex workers are more likely to encounter client violence than those working in public spaces, brothels, or lodges; the odds are higher for outdoor work because of the varied risk behaviors and work environments^{30–32}. Burkina Faso's survey shows 18% of 12–19-year-old girls experienced their first sexual encounter through forced sex, while 21.4–32% of Kenyan women are believed to have been sexually assaulted before turning 18^{33,34}.

A survey in Northern Ethiopia revealed that 75.6% of commercial sex workers (CSWs) have experienced sexual violence and long-lasting mental and physical health effects^{35–37}.

Numerous studies in Ethiopia have investigated early initiation of sex among adolescent females, the previous studies limited their attention to university and college students and institutional settings, while others focused on indoor female sex workers. As a result, those female sex workers who worked on the streets or outdoors have not gained the attention of researchers^{9,11,17,38}. Therefore, the purpose of this study is to assess the factors influencing the early onset of sexual activity among female street sex workers in Jimma and Agaro Towns, southwest Ethiopia.

Methods

Study setting, design, and period

Jimma Town is located in the Jimma Zone of the Oromia Regional State. Located 352 km from Addis Ababa city. The Central Statistical Agency's 2024 population projections place Jimma Town's population account 500,000. A municipality includes three sub-cities, thirteen town kebeles, and four rural kebeles. 128 health facilities in the municipality offer medical services. Jimma City contains one referral and one general governmental hospital, five private hospitals, four public health centers, 55 private clinics, 25 pharmacies, 36 drug stores, and 5 drug distributors³⁹. Agaro, known in Oromo as Aggaaroo, is a prominent town that also functions as an independent woreda. It is 1,560 m above sea level and is situated in the Oromia Region's Jimma Zone. 25,458 people were living in this woreda as of the 2007 national census, with 12,946 men and 12,512 women. The study was conducted in Jimma and Agaro Towns from April 15 to September 15, 2024. An institution-based cross-sectional study design was employed.

Study population, inclusion, and exclusion criteria

The source of the study population includes all female sex workers in Jimma and Agaro towns; however, the study population is active female street sex workers during the data collection period. To be included in the study, participants must be female street sex workers aged over 18 years and a conspirator on the road, working tirelessly during the data collection time. Excluded from the study are those who are ill and unable to respond to the questions, as well as individuals who have transitioned from street work to off-street venues. This approach ensures a clear focus on the target demographic while accounting for factors that could affect participation, including those who previously worked on the street but have since changed their working area to off-street locations.

Sampling technique, sampling procedures, and data collection procedure

A study screened 3,950 participants, including 400 street-based participants from Jimma and 100 from Agaro towns. Female street sex workers aged over 18 were selected for the study. After exclusion criteria, 219 participants were eligible, and a final sample of 203 was recruited from both towns as depicted in (Fig. 1).

The study used structured questionnaires in the English language and translated them to Amharic and Afan-Oromo, then back to English. Pretest done on 20 street sex workers, 5% of the 400 in Jimma and Agaro towns, to ensure clarity and cultural suitability. The study used a convenience sampling technique to select participants and interviewed face-to-face in two towns and five KPCs. Five female BSc nurses and two MSc nurses were data collectors and supervisors, with two days of training provided. Regular oversight, questionnaire completion, and confidentiality were maintained.

Study variables

The study variables include one dependent variable, which is the early initiation of street sex work. Several independent variables are categorized into three main areas. First, socio-demographic factors encompass age, marital status, educational status, parents' education levels, history of having children, migration patterns

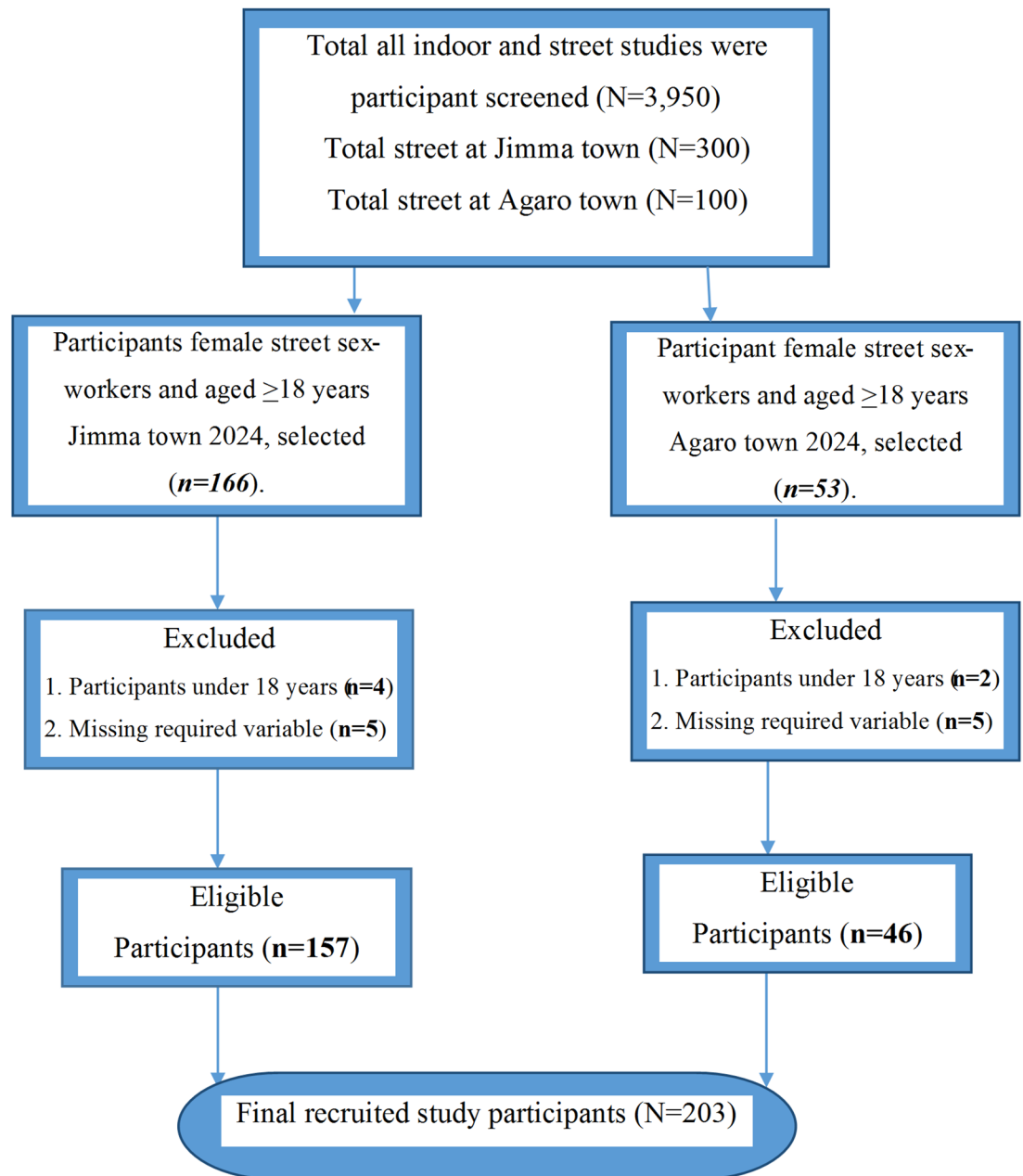


Fig. 1. Participant screening, eligibility, and recruitment flow chart for female street sex workers in Jimma and Agaro towns.

(from rural to urban or city-to-city), and income. Second, behavioral risk factors involve substance use, such as chewing khat, tobacco smoking, and hashish, as well as exposure to pornographic materials and the use of heavy drugs, including inhalants, tranquilizers, marijuana, cannabis, and cocaine. Lastly, family and social factors include parental loss, parental divorce, history of rape, emotional abuse, childhood abuse, and peer influence. This comprehensive framework allows for an in-depth analysis of the various influences on the initiation of early sex work.

Operational definitions and terms

Sex work: The exchange of sex for money/materials.

Early initiation of sex work has been defined as those who participated in sex work before the age of 18⁴⁰.

Parent education status: The level of formal education and the highest degree attained by either mother or father.

Heavy drug use—use of any of these for non-medical purposes (cannabis, heroin, cocaine, and marijuana) alters mood or behavior.

Substance use: When study subjects use alcohol, khat, or different types of tobacco.

Age at sexual initiation: Age at first vaginal intercourse.

Early initiation of street sex work, also known as prostitution, involves a sex worker soliciting customers in public areas such as streets, parks, and benches who participated in this work before the age of 18⁴¹.

Data quality assurance, data management, and analysis

Based on the pre-test results, the questionnaire was adjusted contextually and terminologically, and data were coded before the data collectors filled it out. The principal investigator and supervisors did spot checks and reviewed the completed questionnaires daily to ensure the completeness and consistency of the information collected. Moreover, all complete responses were coded before entry. Finally, data entry was made into EPI Data version 4.6. Statistical software was used by the principal investigator to ensure the accuracy of the data. Cronbach's alpha coefficient was calculated, and the result was 0.73.

The data were entered into EpiData version 4.6 after being double-checked for accuracy and were exported to SPSS version 25 for analysis. At each stage, the variables were appropriately coded and recoded as needed. A binary logistic regression analysis was done to sort variables that are candidates for multiple logistic regressions. Finally, those variables with a P-value ≤ 0.25 were fitted to the multivariate logistic regression model.

A multivariate logistic regression analysis was conducted to identify factors strongly associated with the early initiation of sex work among street-based female sex workers. Finally, the association is declared with the p-value is less than 0.05 will be considered statically significant, and an adjusted odds ratio (AOR) at a 95% confidence interval measure the strength of the association. Hosmer and Lemeshow's test was used to determine the model's fitness.

Outcome measures and validation

The primary outcome of this study was “early initiation of street sex work,” which aimed to examine socio-demographic, behavioral, and social-related factors. The evaluation of “early initiation of street sex work” was conducted using a structured and validated tool designed to assess various factors. The evaluation included factors such as provider communication, perceived effectiveness of services, accessibility, and the responsiveness of those services. The tool underwent a cultural adaptation process and was pretested to ensure its content validity and relevance to the specific context.

Missing data handling

The study employed a rigorous data handling technique, including structured questionnaires and a thorough quality control procedure. This involved interviewer training, methodological completeness checks, and instrument pre-testing. Statistical analysis was performed using tools like SPSS, and data entry and cleaning were handled using specialized software. Missing data were filled using maximum likelihood estimation or multiple imputation.

Results

Socio-demographic related factors

This study achieved a 92.1% response rate, with 219 respondents in total. The respondents' average age was 19.8 (\pm SD 0.95). 135 (66.5%) were not married, and 49.2% had completed primary school. 41% (41%) migrated before entering this work (Table 1).

Behavioral-related factors

Of the total participants, 98 (51.7%) had an experience of khat, alcohol, and different types of cigarette smoking behaviors, 15.3% of participants reported a history of viewing pornographic images or films, while 10.8% of participants used heavy drugs such as cocaine and tranquilizers (Table 2).

Category of variable	Frequency (n = 203)	Percent (%)
The educational level of theParticipants		
Illiterate	74	36.5
Primary	100	49.2
Secondary above	29	14.3
Parents Educational status		
Illiterate	92	42.3
Primary	79	39.
Secondary and above	32	15.7
Ethnicity		
Oromo	86	42.3
Amhara	39	15.3
Dawro	34	16.7
Yemi	26	12.8
Kaffaa	15	7.4
*Others	3	1.5
Religion		
Muslims	60	29.5
Orthodox	53	26.1
Protestant	28	13.8
Wakefana	20	9.85
Catholic	36	17.7
**Others	6	2.9
Marital history		
Single	135	66.5
Separated	34	16.7
Divorced	23	11.3
Widowed	06	2.95
Married	5	2.46
Having children		
No	163	79.3
Yes	40	19.7
Migration		
Yes	83	41.
No	120	59.1

Table 1. Socio-demographic status of the study participants of Jimma and Agaro Towns, oromia Region, Ethiopia. 2024(n = 203). *Others specify —*Tigre, Gurage, and Kambata. **Jehovah and no have religion.

Categories of Variable	Frequency (n = 203)	Percent (%)
Substance use (khat, alcohol, cigarette smoke)		
Yes	105	51.7
No	98	48.3
Watching a Pornographic film		
Yes	31	15.3
No	172	84.7
Heavy-druguse (cocaine andtranquilizers)		
Yes	22	10.8
No	181	89.2

Table 2. Behavioral risk-related factors of early initiation to female street sex work in Agaro and Jimma Towns, Oromia, Ethiopia, 2024.

Family and social-related factors

Of the 203 women who worked as street prostitutes, 77 (39.9%) had girlfriends who had previously engaged in street sex work. Of those who had been engaged in this work, 50 (24.6%) were vocationally trained, and 19.7% and 21.7%, respectively, had experienced parental divorce and parental loss (either mother/father or both). Intimate partner sex was imposed upon 23.6% of respondents against their will. Due to poor relationships, some of the sex workers did not openly discuss sexual behavioral risks with their parents (Table 3).

Prevalence and factors associated with early initiations of female street sex work

The prevalence of early initiation into street sex work among two towns (Jimma and Agaro) was 54.2% (95% CI: 47.1–61.2). The mean age of entry into sex work was 19.8 (\pm SD 0.95); for < 18 years it was 15.6 (\pm SD 0.49), and for > 18 years it was 25.4 (\pm SD 0.9).

In this study, around 72% of sex workers identified were aged between 15 and 24 years old. Using Bivariate analysis, variables such as respondents' educational background before engaging in sex work and the educational attainment of their parents before the females entering this work were found to be associated with early initiation, parent loss, parent divorce, watching pornographic films or videos, having poor relationships with parents, discussing the risk of early sex initiation with them, friends, using various substances, and migration, with a P-value \leq 0.25. However, intimidation was more significant. This variable was found in initial exposure to street sex work; the following independent variable was statistically significant among all components entered into multivariable logistic regression (Table 4).

Those who were illiterate were 2.66 times more likely to initiate street sex work than literate younger women were (AOR: 2.6, 95% CI: 1.09–6.45). No formally educated and less educated parents of those who had early initiation street sex work were 3.29 and 2.94 times more likely to enter street sex work than those who had more educated parents (AOR: 3.29; 95% CI: 1.15–7.72) and (AOR: 2.94; 95% CI: 1.01–5.51), respectively. Those who didn't have a history of parental loss and parental divorce entering street sex work were 67% and 62% less likely to enter street sex work early compared to their counterparts (AOR: 0.33, 95% CI: 0.12–0.61) and (AOR: 0.38; 95% CI: 0.16–0.87), respectively. Whereas those migrant women, before entering sex work, were 2.88 times more likely to have early initiation to street sex work than those who didn't migrate (AOR: 2.88; 95% CI: 1.36–5.09) (Table 4).

Discussion

According to this study, 54.2% (110), or more than half of SBFSW, began street sex work before the age of 18 (95% CI: 47.1–61.2). However, this figure was higher than that of a study on early commencement of sex work, which discovered that 20 to 40% of young women began commercial sex work at a young age⁴². The variation between these studies may be because our study's primary focus is on those girls who begin street sex work before turning eighteen, but other studies excluded street-based sex workers and considered indoor types of female sex work. The difference may also be explained by the variations in the sociodemographic, behavioral risk-related, family, and societal-related factors.

This study discovered an independent relationship between early initiation of street sex work entry and an economic issue. Respondents stated that their primary motivation for turning to street sex work as a source of income was hardship. Regardless of the age of initiation into sex work, over 80.2% of 163 participants. But as

Categories of Variable	Frequency (n=203)	Percent (%)
Before entering SBSW, individuals may have had sex workers as girlfriends		
Yes	77	39.9
No	126	62.1
Vocationally trained (income-generating) before entry into SBSW		
Yes	50	24.6
No	153	75.3
Rape by an intimate partner before entry into SBSW		
Yes	48	23.6
No	155	76.4
Parental divorce before entry into SBSW		
No	159	79.3
Yes	46	21.7
Parental loss before entry into SBSW.		
No	163	80.3
Yes	40	19.7
Had good bonding with their parents.		
No	164	80.8
Yes	39	19.2

Table 3. Family and social-related factors of early initiation to street-based sex work in Agaro and Jimma Towns, Oromia, Ethiopia. 2024.

Variable	Early Initiation		COR (95%CI)	AOR (95%CI)	P-value
	Yes (%)	No (%)			
Demographic Variables					
Educational Status of Participants					
Illiterates	45 (62.2)	28 (37.8)	2.80(1.15–5.59)	2.66(1.09–6.45)	0.023
primary	54 (54)	46 (46)	2.02(0.87–4.67)	2.09(1.44–6.69)	0.075
Secondary and above	11 (36.7)	19 (63.3)	1	1	
Educational Status of Parents					
Illiterates	52 (56.5)	40 (43.5)	1.67(0.74–3.76)	3.29(1.15–7.13)	0.026
Primary	44 (55.7)	35 (44.3)	1.61 (0.70–3.01)	2.94(1.01–5.52)	0.047
Secondary and above	14 (43.8)	18 (56.2)	1	1	
Had children before entry into SBSW					
No	93 (57.0)	70 (43.0)	1.79(0.89–3.61)	3.73(1.50–6.27)	0.004
Yes	17 (42.5)	23 (57.5)	1	1	
Migration					
Yes	58 (69.9)	25 (30.1)	3.03(1.67–5.40)	2.88(1.36–5.09)	0.006
No	52 (43.4)	68 (56.6)	1	1	
Birth/Place of residence, Prior entry into SBSW					
Rural	78 (62.4)	47 (36.6)	2.38 (1.33–4.25)	3.64 (1.69–5.84)	0.001
Urban	32 (41.1)	46 (58.9)	1	1	
Behavioral Risk, Variable					
Substance used before entry into SBSW					
Yes	71 (59.0)	34 (41.0)	3.0 (1.77–5.61)	3.56 (1.7–6.22)	0.000
No	39 (32.4)	56 (60.6)	1	1	
Family & Social-rted Variables					
Parent loss Prior entry SBSW					
No	79 (48.5)	84 (51.5)	1	1	
Yes	31 (6.4)	9 (13.3)	0.27 (0.24–1.04)	0.33 (0.12–0.61)	0.039
Parent Divorced Prior entry SBSW					
No	78 (49.7)	79 (50.3)	1	1	
Yes	32 (69.6)	14 (30.4)	0.43 (0.22–0.89)	0.38 (0.16–0.87)	0.022
Good relationship with parent/s					
No	96 (58.5)	68 (41.5)	2.52 (1.22–3.67)	2.32 (0.94–4.61)	0.066
Yes	14 (35.9)	25 (64.1)	1	1	
Before entering SBSW, individuals may have had sex workers as girlfriends					
Yes	48 (69.3)	29 (37.7)	1.70 (0.95–3.04)	2.05 (0.97–4.20)	0.049
No	62 (49.2)	64 (50.8)	1	1	

Table 4. Bivariate and multivariate regression analysis predicting early street-sex work initiation (< 18 years) among female street sex workers in Jimma and Agaro Towns, Oromia, Ethiopia. 2024.

regards age < 18 years, from the total, 67.5% reported needing money for basic needs; these reasons for early entering into street sex work were similar to those found in previous studies^{43,44}.

This study discovered a link between educational attainment and early involvement in the street sex trade. The study found that compared to those with secondary and higher education, those with no formal education were more likely to begin street sex work early. Furthermore, individuals with secondary and higher-educated parents were less likely to engage in early street-based sex work than those with no or less-educated parents. Research from Canada, Thailand, Nepal, and India supported this finding⁴².

Other contributing factors to early involvement in street sex work include parental divorce and the loss of one or both parents. Previous evidence also confirmed that parent bereavement and parental divorce are important contributing variables. When parents divorce and drift away, children may lose control and live their lives on their own, meeting their requirements as well as the demands of the rest of the family. This is particularly true when both parents pass away, leading girls to drop out of school and look for high-risk and low-paying employment^{8,45,46}.

The current study also illustrated that different types of substance users, including chewing khat, drinking alcohol, and smoking different cigarettes before starting sex, are more likely to early enter the sex-work trade, which is also under other previous studies^{47,48}. Also, this finding is supported by a study in the USA, stating drugs, including cocaine and other inhalants, were the primary reason for sex work⁴². One possible explanation for this association may be that when respondents previously developed addictions to khat, cigars, alcohol,

and different types of heavy drugs, they may have only chosen to take jobs in which they could easily generate income, which is supported by two other studies^{9,17}.

Those participants who did not have children were more likely to be engaged in street sex work than those who had children in this study. This result is also in line with other previous studies, stating women with dependent children were more likely to engage in sex work at a later age⁴⁵. This result can also be a paradox from other study results showing that those women who have children are more likely to enter sex work to cover the basic needs of their children after they are separated or divorced from their husbands⁴⁹.

According to this study, those who migrated had a 2.88-fold higher chance of entering into street sex work early than those who did not migrate. This finding was corroborated by research conducted in two countries^{49,50}. In this study, more than half of the participants departed their homes for a city in pursuit of employment. Most young women move from one location to another in search of employment, which might be because of peer pressure, broker misguidance, and other factors. Those young women who did not have gainful employment when they came to the city will be forced to simply engage in street-based sex work as the last option.

Moreover, this study highlighted that those participants who originated from rural areas were more likely to engage in early street sex work compared to urban residents. This may explain why those urban-dwelling women are more aware of the risks associated with sex work and the humiliation they could bring to their families and friends³⁸.

Conclusion and recommendation

According to this study, we found a higher magnitude of early involvement in female street sex work than that of a study conducted in Addis Ababa on women's early engagement in sex work. Early initiation in street sex work was linked to Poverty, educational attainment, parental divorce, residence, parental loss, and migration. They also reported that using various forms of substances, having a poor bond with their parent, and having girlfriends before entry to this work were significantly associated with early street sex work initiation.

The study reveals various pathways for younger girls entering street sex work, which points to the importance of targeted interventions. Government officials should provide secure income opportunities and reduce divorce rates. Family members should educate their female children. Parents need to engage with their female children and provide guidance to help reduce peer pressure. Participants ought to finish their education and step away from this health-risk work. Researchers can further explore this issue by employing various study designs, including survival analyses and long-term investigations.

Strengths and limitations of the study

This study employed a cross-sectional design, which was used to determine the prevalence and provide initial data for further investigation. The associations between multiple exposures and outcomes. When compared to other study designs, cross-sectional studies are easier and less expensive to conduct. However, it has some limitations. Because it is unable to record longitudinal changes, it is not appropriate for researching behavior over lengthy periods. Additionally, it is unable to conclusively prove cause-and-effect linkages. Lastly, a study taken at a specific moment may not be an accurate representation of the whole population or typical behavior. Future studies should consider a longitudinal study design with a larger sample size to provide a representative sample.

Data availability

All relevant data are within the paper and its supporting information file.

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Author contributions

DHZ: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Supervision, Writing – original draft. TBT: Project administration, Supervision, Validation, Resources, Visualization, Writing – review & editing. BTG: Methodology, Formal analysis, Software, review, and Writing – original draft. GYT: Data curation, Investigation, Project administration, Resources, Visualization, Writing – review & editing.

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Declarations

Ethics approval and consent to participate

The Jimma University Institute of Health's review board granted ethical approval under the reference JUIH/IRB/070/24. In addition, official permission from the Jimma and Agaro Town health offices is required. Written informed consent was obtained in writing, and participants were informed of the study's objective and requirements. Data was collected, kept private, and personal information was saved in a coded file. All rules and regulations were followed according to the Helsinki Declaration.

Competing interests

The authors declare no competing interests.

Additional information

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