

Prevalence And Factors Associated With Substance Use Among Street Children In Jimma Town, Oromiya National Regional State, Ethiopia: A Community Based Cross-Sectional Study

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Keywords: Substance use, street children, cigarette smoking, Khat chewing, drinking alcohol

Posted Date: February 5th, 2020

DOI: <https://doi.org/10.21203/rs.2.22733/v1>

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Version of Record: A version of this preprint was published on August 20th, 2020. See the published version at <https://doi.org/10.1186/s13011-020-00304-3>.

Abstract

Background Street children constitute a marginalized population in most urban centers of the world. According to UN sources there are up to 150 million street children in the world today. World Health Organization estimates that globally, 25- 90% of street children indulge in substance use. Research on street children and their substance use habits in Ethiopia, specifically in Jimma is limited. Objectives To assess the prevalence and factors associated with substance use among street children in Jimma town, Ethiopia

Methods Cross sectional study was undertaken from March 1-31, 2019. Complete enumeration of study subjects was done and a total of 312 children of the street were included in the study. Bivariate logistic regression was carried out to select candidate for multivariable logistic regression analysis with p-value <0.25 at 95% confidence. Multi variable logistic regression was carried out with those candidate variables using backward method and association was declared with p value of <0.05 at 95% confidence level.

Result Three hundred twelve street children with response rate of 96.2% were included in the study. The prevalence of substance use was 96(30.8%) with 95% CI [25-36.2]. Age>14 [AOR: 1.97 95%CI:1.00-3.889], attending grade 1-4th [AOR: 0.33 95%CI:0.151-0.737], attending grade 5th and above [AOR: 0.27 CI:0.093-0.756], child whose mother used substances [AOR: 7.78 95%CI:3.00-20.11], child didn't know his maternal substance use status [AOR:5.1 95%CI: 2.19-11.81], child whose sibling use substance [AOR: 2.23 95%CI:1.254-5.63], best friend substance use[AOR: 11.01 95%CI:5.47-25.04] and staying 12-60 months on the street [AOR:3.00 95%CI:1.511-5.96] and staying >5 years on the street [AOR:4.6 95%CI:1.06-19.7] were significantly associated with substance use.

Conclusion and recommendation The prevalence of substance use among street children in Jimma town was high. Mother and siblings have crucial role in determining substance use behavior of the children. Both governmental and non-governmental organizations working on children of the street should do intervention on Parents and friends since they are role models for the street children. Researchers should do more researches on these neglected groups of children.

Background

The history of substance utilization is as old as mankind. People have always had a desire to eat or drink substances because of their cultural practices, for relaxing, stimulation or euphoric (1).

The phrase street children has been used to refer to a population of youngsters either alone or in groups, perform informal activities such as doing odd jobs, begging, wandering, and other activities necessary for themselves or their family's survival (2). Street child is defined as any girl or boy, for whom the street has become his or her habitual abode and/or source of livelihood; and who is inadequately protected, supervised, or directed by responsible adults (3).

The nature of continuous exposure to the street and its associated lifestyles make street children vulnerable to the use of psychoactive substances. Street children's drug use often commences with alcohol, tobacco and inhalants which are legal and easily accessible in most countries. World Health Organization (WHO) estimates that globally, 25–90% of street children indulge in substance use (4).

Street children have a greater burden than other poor children who are supervised by adults. The inherent dangers of being in the street situation, economic deprivation, lack of adult protection and inadequate socialization etc., make them extremely vulnerable. Many street children are involved in harmful use of psychoactive substances which can lead to increase the chance of accidents, violence, unprotected sex which leads to unwanted pregnancy (5).

According to UN sources, there are up to 150 million street children in the world today. Chased from home by violence, drug and alcohol abuse, the death of a parent, family breakdown, war, natural disaster or simply socio-economic collapse, many destitute children are forced to eke out a living on the streets, scavenging, begging, hawking in the slums and polluted cities of the developing world (6).

According to the Ethiopian labor and social affairs ministry, 150,000 children live on the streets in Ethiopia, about 60,000 of them in the capital. However, aid agencies estimate that the problem may be far more serious, with nearly 600,000 street children country-wide and over 100,000 in Addis Ababa (7).

Research on street children and their substance use habits in Ethiopia, specifically in Jimma has been limited to describe the prevalence, types and extent of substances used and factors associated with using substances in the town. So, the aim of this study is to assess the prevalence and factors associated with substance use among street children in Jimma town.

Methods

Study setting and design

A community based cross-sectional study was conducted in Jimma town, Oromiya National Regional State, South West Ethiopia from March 1-31, 2019. According to Jimma town administrative office, the town is found at 352 km from Addis Ababa, the capital city of Ethiopia. According to the 2015 National Urban System Study, the population of the city was 199,575 but the information regarding the number of street children in the town is unknown.

Sample size and sampling procedure

Complete enumeration of street children with age of 12-18 years old in Jimma town was performed and a total of 365 street children were found in the town. Among these 37 children stayed on the street for less than 1 month, 4 children had communication problem and 12 children lost. After exclusion of all these children, finally 312 street children were included in to the study.

A preliminary survey was conducted all over the urban kebeles of Jimma town with the help of community social workers and volunteers who were employees of Feyaa Integrated Development Organization. Registration of all available street children in all corners of the town was made with a format which contains information to be filled like Name, Nick name, age, sex, friends' name, usual area of residence, duration of stay on the street, any anatomical deformity and any communication difficulties. And the children were traced back and transported to Higher 2 health center for data collection.

Data collection procedure and instrument

Data were collected using interviewer administered structured questionnaires that was prepared after reviewing different published literatures and other guidelines. The data were collected by five health officers, and the principal investigator supervised the data collection process. All data collectors took a one day intensive training before the data collection started about objectives of the study and how to administer the questionnaires, the issues of verbal assent, the right not to participate in the study.

Data quality assurance

Data collectors were trained on how to collect and handle data. The questionnaire prepared in English was translated into Amharic and was back translated to English to assess consistency. The Amharic version was used while carrying out the interview. Questionnaires were pretested on 5% of the street children in Agaro town prior to actual data collection. Some modifications like correction of typing error, data collection period and number of data collectors needed were done based on the result of the pretest. The researcher reviewed filled questionnaires at the end of data collection every day for completeness, consistency and took corrective measures.

Study variables

The dependent variable was substance use whereas the independent variables were socio demographic factors (age, sex, religion, ethnicity, educational status, place of birth, daily income and type of work), personal factors (duration on the street, and sleeping place), environmental factors (availability of substances, accessibility of substances and affordability of substances) and family factors (parental status, maternal substance use, maternal job, maternal education, paternal substance use, paternal education, paternal job and sibling substance use).

Data analysis procedures

Data were entered in to Epidata version 3.1 and exported to SPSS version 23 for analysis. Data exploration was conducted to examine different characteristics of the data. After cleaning data, descriptive statistics such as frequencies, proportions and percentages were done for the categorical variables while, measures of central tendency and dispersion were summarized for continuous data. Bivariable logistic regression was carried out to select candidate for multivariable logistic regression analysis with p-value <0.25 at 95% confidence. Then, candidate variables were entered multiple logistic regressions model using backward method. The degree of association was assessed using odds ratio

and statistical significance were declared at 95% of confidence level and p-value of less than 0.05. Hosmer & Lemeshow's test was conducted to assess the fitness of the model.

Results

Socio demographic characteristics of street children in Jimma town

Three hundred twelve street children were included in the study. The majority (90.1%) of respondents were male. Respondents with age of 12-14 years constitute 61.2% and the median age of respondents was 14 years with interquartile range (IQR) of 2 years. Seventy two (72.1%) of the children were born in rural area and majority of the respondents were Muslim (68.3%) and Oromo (67%). One hundred forty-six (46.8%) of the respondents completed grade 1-4. The median stay of street children on the street was 12 months with interquartile range (IQR) of 17 months. The median daily income of respondents was 35 ETB with interquartile range (IQR) of 20 ETB respectively (Table 1).

Family history of respondents

Above forty one percent (41.7%) of respondents have lost their natural parents and 52.9% and 40% of respondents' mothers and father can't read and write and 44.5% of respondents' fathers works as a farmer. In this study 48.7% and 12.2% of respondent's fathers and mothers were substance users respectively. Khat was predominantly used substance by respondents' family. In addition to this 17.4% and 46.5% of respondents' siblings and best friends use substances. Among users 83.3% and 71.5% of siblings and friends use khat respectively.

According to this study 30.8% of the respondents use substances currently (Figure 1 and Supplementary 1).

The study showed that 122 (39.1%) of the respondents used at least one substance in their lifetime. Among those 77(62.6%) used khat, 14(11.5%) used alcohol, 57(46.7%) used cigarette and 56(45.9%) used mastics. Among current users, 63.5% of the respondents currently use khat, followed by cigarette, mastics, alcohol and benzene respectively (Table 2).

Peer pressure (86.5%) and curiosity (38.5%) were reported as the leading reasons for substance use (Figure 2 and Supplementary 2).

Bivariate logistic regression of factors associated with substance use.

Among all variables, age, sex, duration on the street, income, educational status, sleeping place (hotel veranda and old and abandoned buildings), child job (delivering message, carrying small items and begging) paternal substance use, maternal substance use, sibling substance use, best friend substance use had p value <0.25 (Table 3).

Factors associated with substance use

Age, educational status, maternal substance use, sibling substance use, best friend substance use and duration on the street were found to be significantly associated with substance use (P-value <0.05) (Table 4).

Discussion

The study assessed the prevalence and factors associated with substance use among street children aged 12–18 years old in Jimma town, Oromiya, southwest Ethiopia. The overall prevalence of substance use was 96(30.8%) with 95% CI [25-36.2]. This result was found to be higher than the prevalence among street children in Nepal (8) and Teheran, Iran (9). The higher prevalence in the current study might be due to easy availability of substances. The result however was lower than that reported in Mekele (10), Assam district, India (11) and western Nigeria (12). The difference might be explained by a smaller sample size (Mekele) and cultural and socio-economic conditions.

This study revealed that, ever use of substance was 122(39.1%) 95% CI [33.0-45.2]. specifically, 46.7% and 11.5% of the respondents had ever smoke cigarette and drank alcohol respectively. The result is different compared to a study which was conducted in Tehran, Iran (9).

This study showed that the current prevalence of khat chewing, cigarette smoking and drinking alcohol is 63.5%, 43.8% and 12.5% respectively. Alcohol utilization was comparable with reports in Nepal (8). The result is higher than reports from western Nigeria that revealed the prevalence of drinking alcohol and cigarette smoking 43.6% and 41.4% respectively (12). This result is also lower than the study done in Brazil (13) and Nepal (8). The possible explanation for this inconsistency might attributed to different socio-economic status.

This study showed that the odds of substance use was two times higher among respondents age > 14 years compared to respondents age 12–14 years. The result was consistent with studies done in Mekele (10) and Brazil (14). Possible explanation might be older adolescents exercise more experimentation with substances (15).

Respondents who attended grade 1–4 were 67% less likely to use substances compared with respondents who never attended school. Similarly respondents who were grade 5–8 were 73% less likely to use substances compared to respondents who never attended school. The result was comparable with

finding in Brazil (14). The consistency might be due to the fact that schools are one of the media for getting information about ill effects of substance use.

This study revealed that those respondents whose sibling used substance were 2 times more likely to use substances compared to respondents whose sibling don't use substances. The result is consistent with a result in Mekele city (10) and western Kenya (16). The possible explanation might be siblings are thought to provide substantial reinforcement for anti-social activities like substance use.

Similarly, respondents whose best friend use substance were 11 times more likely to use substances compared to respondents whose best friend don't use substance. This result was consistent with study done in Brazil (14) and western Kenya (16). Possible explanation might be adolescent children use substances to avoid being stigmatized by their friends or to impress them.

Respondents who stayed 1–5 year on the street were 3 times more likely to use substance compared to respondents who stayed less than 1 year on the street. The result is consistent with results reported in Brazil (14), Guwahati City, Assam (11) and western Kenya (16). In addition, respondents who stayed greater than 5 year on the street were 5 times more likely to use substance compared to respondents who stayed less than 1 year on the street. Street children might use substances as a coping mechanism to survive on the street.

Respondents whose mothers use substance were 8 times more likely to use substances compared to those respondents whose mothers didn't use substance. Whereas those respondents who didn't know about their mothers substance use status were 5 times more likely to use substances compared to those respondents whose mother didn't use substance. This result is comparable with a study done in Mekele city (10), Kenya (16) and Guwahati City, Assam (11). The possible reason might be street children are deeply influenced by people who raise them.

Limitation Of The Study

This study was conducted only using quantitative method and limitation of age categories to 12–18 as a result of ethical challenge. Ethiopian National Research Ethics Review Guideline stated that assent should be obtained from children above 12 years. Furthermore, social desirability bias may underestimate the current prevalence of substance use. In order to decrease social desirability bias, reassurance of respondents about the confidentiality of the research was done.

Conclusions

The current prevalence of substance use among adolescent street children of Jimma town is high. Age, educational status, maternal substance use, sibling substance use, best friend substance use and duration on the street were found to be significantly associated with current substance use status of street children. Family have crucial role in determining substance use behavior of the children.

Abbreviations

AIDS-Acquired immune deficiency syndrome

AOR-Adjusted Odds Ratio

CI- Confidence Interval

COR-Crude Odds Ratio

EDHS- Ethiopian Demographic and Health Survey

FSC-Forum on Street Children

IQR- Inter Quartile Range

JU-Jimma University

NGO- Non-governmental Organizations

SPSS- Statistical Package for Social Sciences

STDs -Sexually Transmitted Diseases

UN- United Nation

UNICEF-United Nations Children's Fund

WHO-World Health Organization

Declarations

Ethical approval

The study protocol was approved by the Research Ethics and Approval Committee of the Jimma University Institute of Health. Permission to conduct the study was obtained from Jimma town youth and women affairs, Jimma zone police department and and Jimma town administration. Since street children have no guardian living with them, it's difficult to obtain parental consent. Rather we obtain permission from office of women, child and youth. In addition we conducted the study with close supervision of Jimma town administration and Jimma zone police department. In addition, written informed assent was obtained from the study participants as Ethiopian national ethical guideline permits written informed assent from high risk minors like street children.

The right of the respondents to withdraw or not to participate was respected. Additionally, names of participants were not used in the study and information obtained from subjects were held confidentially.

The purpose of the study was explained to the street children and they were invited to participate voluntarily. The interviews were conducted anonymously and held in a comfortable place where confidentiality could be maintained. For those children with history of substance use, on site counseling on the harmful health and economic effect of substance use was given. Data were analyzed anonymously.

Acknowledgments

We would like to thank Jimma University for granting ethical approval and granting fund. We extend our gratitude to study participants, data collectors, Jimma town youth and women affairs, Jimma zone police department and and Jimma town administration.

Funding

The study was funded by Jimma University. The university had no role in the design of the study, in the collection, analysis, and interpretation of the data; or in writing the manuscript.

Availability of data and materials

The datasets generated and analyzed during the study and we will make the data sets available to organizations and individuals based on reasonable request.

Authors' Contribution

MA wrote the protocol, participated in data collection, analyzed the data and wrote the manuscript. TK and KW revise and approve the protocol, participated in data analysis, reviewing and editing the manuscript. All authors read and approved the final manuscript.

Consent for publication

Not applicable

Competing interests

The authors declare that they have no competing interests.

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References

1. Matowo A. Cause, Effect And Remedial Measures Of Drug Abuse Among The Children In Tanzania: A Case Study Of Hananasifu Ward In Kinondoni District In Dar Es Salaam. 2015.
2. Moura YG SZ NA. Diversity of contexts in drug use among street adolescents. *Qual Health Res*. 2010;20(12):41-53.
3. Children I-NPoS, Youth S. Inter-NGO Programme on Street Children and Street Youth, Sub-regional Seminar for the Mediterranean, Marseilles, 24th-27th October 1983: Summary of Proceedings: The Programme; 1984.
4. WHO. Child abuse and neglect. 2012.
5. Ayub, Kumar D, Rasoo M. Substance abuse among street children of Jammu region. *Taha International Journal of Medical Science and Clinical Inventions*. 2017;4(8):3168-71.
6. UNESCO. Social and Human Sciences [Available from: <http://www.unesco.org/new/en/social-and-human-sciences/themes/fight-against-discrimination/education-of-children-in-need/street-children/>].
7. IRIN News Focus on street children rehabilitation project [Available from: <http://www.irinnews.org/report/48799/ethiopia-focus-street-children-rehabilitation-project>].
8. Tuladhar S. Alcohol and Drug Use among Street Children in Nepal 2012 [Available from: <http://www.add-resources.org/alcohol-and-drug-use-among-street-children-in-nepal.444184-315779.html>].
9. Dejman M, Vameqhi M, Dejman F, Roshanfekar P, Rafiey H, Setareh Forouzan A, et al. Substance use Among Street Children in Tehran, Iran. *International Journal of Travel Medicine and Global Health*. 2015;3(1):23-6.
10. Buruh G, Berhe S, Kassa M. Prevalence and determinants of substance abuse among street children in Mekelle city, Tigray, Ethiopia: cross-sectional study. *Pharmabitika*. 2014;1(1):082-93
11. Islam F KS, Debroy A, Sarma R. Substance abuse amongst the street-children in Guwahati City, Assam. . *Ann Med Health Sci Res* 2014;4:233-8.
12. Adebisi AO, Owoaje O, Asuzu MC. Relationships as determinants of substance use amongst street children in a local government area in south-western Nigeria. *SA Fam Pract*. 2008;50(5).z

13. Letícia M et al. Drug use among street children in southern Brazil [Available from: [https://doi.org/10.1016/S0376-8716\(96\)01288-4](https://doi.org/10.1016/S0376-8716(96)01288-4)].
14. Moura YGd, Sanchez ZM, Opaleye ES, Neiva-Silva L, Koller SH, Noto AR. Drug use among street children and adolescents: what helps? ARTIGO. 2012;28(7):1371-80
15. UNICEF. THE STATE OF THE WORLD'S CHILDREN. 2012.
16. DA LE, Atowli L, Vreeman R, Gsoire P, Braitstein P. Risk factors and prevalence of substance use among street children in western Kenya. NIDA International home. 2012;1(1).

Tables

Table 1 Socio demographic characteristics of street children in Jimma town, Oromiya, South West Ethiopia, March 2019

Variables	Categories	Frequency (n=312)	Percentage (%)
Sex	Male	281	90.1
	Female	31	9.9
Age	12-14 years	191	61.2
	15-18 years	121	38.8
Birthplace	Rural	225	72.1
	Urban	87	27.9
Religion	Muslim	213	68.3
	Orthodox	60	19.2
	Protestant	39	12.5
Ethnicity	Oromo	209	67
	Dawuro	31	9.9
	Amhara	39	12.5
	Keffa	33	10.6
Educational status	Never attend school	88	28.2
	Read and wright	23	7.4
	Grade 1-4	146	46.8
	Grade 5-8	55	17.6
Duration on the street (month)	1-12	182	58.3
	13-60	116	37.2
	>60	14	4.5
Daily income(birr)	≤ 35	171	54.8
	>35	141	45.2

Table 2 Distributions of substances used by street children in Jimma town, Oromiya, South West Ethiopia March 2019

Substances	Ever used		Current use	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Khat	77	62.6	61	63.5
Cigarette	57	46.7	42	43.8
Mastics	56	45.9	40	41.7
Alcohol	14	11.5	12	12.5
Benzene	8	6.6	4	4.2

Table 3 Bivariate logistic regression of factors associated with substance use among street children, Jimma town, Oromiya, South West Ethiopia March 2019

Variables	Categories	Substance use		COR(95% CI)	P value
		yes	no		
Sex	Male	92	189	3.286 [1.117-9.668]	0.031*
	Female	4	27	1	
Age	12-14	49	142	1	
	≥14	47	74	1.84[1.129-3.001]	0.014*
Educational status	Never attend school	34	54	1	
	Read and write	8	15	0.84[0.325-2.211]	0.735
	Grade 1-4	38	108	0.56[0.317-0.985]	0.044*
	Grade 5-8	16	39	0.652[0.316-1.343]	0.246*
Daily income(birr)	≤ 35	47	124	1	
	>35	49	92	1.40[0.867-2.277]	0.167*
Sleeping place (Hotel veranda)	Yes	54	103	1.411[0.870-2.288]	0.163*
	No	42	113	1	
Sleeping place (Old and abandoned buildings)	yes	22	82	0.486[0.28-0.842]	0.01*
	no	74	134	1	
Child's job (Carrying small items)	yes	75	150	1.571[0.894-2.762]	0.116*
	no	21	66	1	
Child's job (Delivering messages)	yes	8	46	0.336[0.152-0.743]	0.047*
	no	88	170	1	
Child's job (Begging)	yes	7	30	0.488[0.206-1.153]	0.102*
	no	89	186	1	
Duration on the street	<12	40	142	1	
	12-60	49	67	2.59[1.561-4.318]	0.000*
	>60	7	7	3.55[1.176-10.716]	0.025*
Paternal substance use	Yes	52	100	3.64[1.614-8.207]	0.002*
	No	8	56	1	
	Don't know	36	60	4.2[1.798-9.809]	0.001*
Maternal substance use	Yes	24	14	7.2[3.383-15.322]	0.000*
	No	35	147	1	
	Don't know	37	55	2.83[1.620-4.929]	0.000*
Sibling substance use	Yes	28	26	3.06[1.627-5.767]	0.001*
	No	45	128	1	
	Don't know	23	61	1.07 [0.596-1.930]	0.815
Best friend substance use	Yes	76	69	8.096[4.58-14.309]	0.000*
	No	20	147	1	

COR- Crude odds ratio

CI-Confidence Interval

*p <0.25

Table 4 Logistic regression of factors associated with substance use among street children, Jimma town, Oromiya, South West Ethiopia, March 2019

Variables	Category	Substance use		COR	AOR	95% CI AOR
		yes	no			
age	>14	49	142	1.84	1.97	1.001-3.889*
	12-14	47	74	1	1	
Educational status	Never attend school	34	54	1	1	
	Read and write	8	15	0.84	0.86	0.242-3.08
	Grade 1-4	38	108	0.56	0.33	0.151-0.737*
	Grade 5-8 and above	16	39	0.65	0.27	0.093-0.756*
Maternal substance use	Yes	24	14	7.2	7.78	3.00-20.11*
	No	35	147	1	1	
	Don't know	37	55	2.83	5.1	2.19-11.81*
Sibling substance use	yes	28	26	3.06	2.23	1.254-5.63*
	no	45	128	1	1	
	Don't know	23	61	1.07	0.42	0.19-1.302
Best friend substance use	Yes	76	69	8.1	11.07	5.47-25.04*
	no	20	147	1	1	
Duration on the street (in month)	<12	40	142	1	1	
	12-60	49	67	2.59	3.00	1.511-5.96*
	>60	7	7	3.55	4.592	1.06-19.7*

COR- Crude odds ratio AOR- Adjusted odds ratio CI-Confidence Interval *significant factors with p value <0.05

Figures

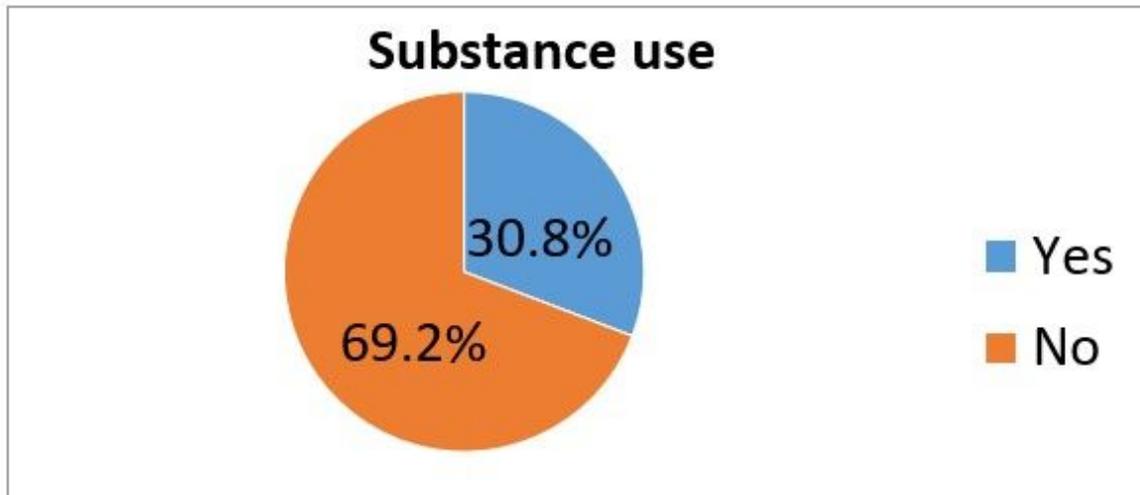


Figure 1

Distribution of substance use among street children, Jimma town, Oromiya National Regional State, Ethiopia March 2019

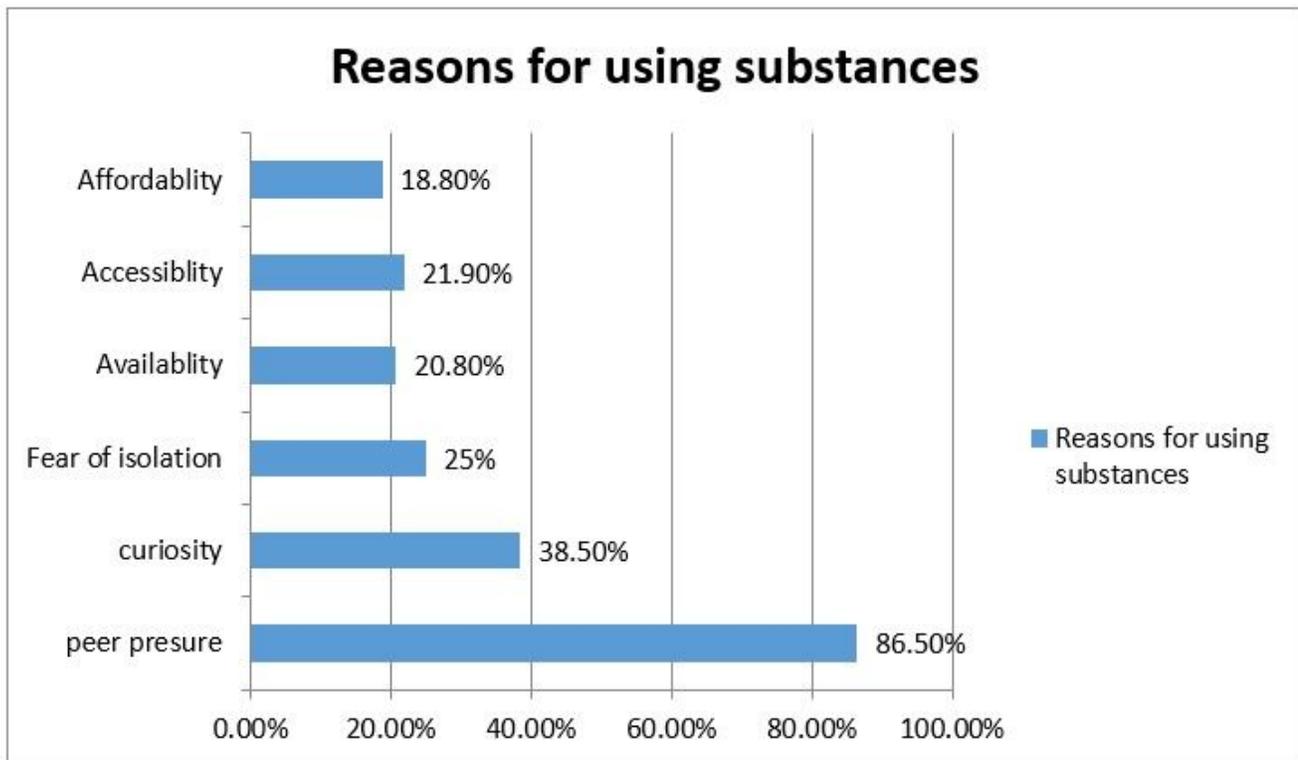


Figure 2

Supplementary Files

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