

Research Article

Magnitude of Substance Use and Associated Factors among Pregnant Women Attending Jimma Town Public Health Facilities, Jimma Zone, Oromia Regional State Southwest Ethiopia

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Abstract

Background: Alcohol, khat leaves and tobacco have long been recognized as one of the leading causes of human suffering and are major public health and socio-economic problems worldwide. There were no studies conducted to investigate the prevalence and associated factors of substance use among pregnant women in the study area.

Objective: To assess the magnitude of substance use and associated factors among pregnant women attending antenatal care in Jimma Town public health facilities, Southwest Ethiopia.

Methods: Facility based cross sectional study was conducted among pregnant women in Jimma town public health facilities from March 10 to April 10/2017. A systematic sampling technique was used to select a total of 296 study participants. Data was collected by interviewer administered pretested structured questionnaire. The collected data was cleaned, edited, coded and entered in to Epi data version 3.1 and exported to and analyzed using SPSS version 21 statistical package. Multivariate logistic regression model was fitted to assess the association between the independent and dependent variables. Adjusted Odds ratios calculated with 95% confidence intervals and at α =5% with significant level of P<0.05.

Results: Being able to read and write (AOR=0.091 95% CI: (0.014, 0.574)), gestational age of second trimester (AOR=3.325 95% CI: (1.298, 8.251)), being house wife (AOR=2.027, (0.249, 95% CI: 16.528)) and family history of substance use (AOR=0.122 95% CI: (0.066, 0.228)) were factors associated with substance use.

Conclusion and recommendation: The overall prevalence rate of substance use among the pregnant women in this study was high. Educational status, family history of substance use, occupational status and gestational age were found to be associated with substance use. Health care providers, district, zonal and regional health offices should design strategy targeting at reduction of substance use among pregnant women.

Keywords: Substance use; Pregnant women; Alcohol; Khat; Tobacco

Abbreviations: ANC: Ante Natal Care; AOR: Adjusted Odd Ratio; ASPE: Assistant Secretary for Planning and Evaluation; CI: Confidence Interval; COR: Crude Odd Ratio; EDHS Ethiopia Demographic Health Survey; ETB: Ethiopian Birr; FAS: Fetal Alcohol Syndrome; HC: Health Centre; HH: House Hold; IUGR: Intrauterine Growth Retardation ; IRB: Institutional Review Board; JUMC: Jimma University Medical Centre; LBW: Low Birth Weight; NSDUH: National Survey on Drug Use and Health; ORHB Oromia Regional Health Bureau; SD: Standard Deviation; SPSS: Statistical Package for the Social Sciences; WHO: World Health Organization

Introduction

Use of substance such as alcohol, khat leaves and tobacco have long been recognized as one of the leading causes of human suffering and become one of the rising major public health and socioeconomic problems worldwide [1,2].

Substance use during pregnancy can affect the foetus both directly passing through placental barrier and indirectly through poor maternal health habits and environmental conditions [3,4].

Prenatal alcohol exposure can result in major organ birth defects, growth disorders and damage to multiple structures in the brain resulting in permanent and lifelong disabilities and multiple health and social problems for both mother and child, including miscarriage, stillbirth, low birth weight, and prematurity [5]. There is no known safe level of alcohol consumption during pregnancy. Despite some recent research suggesting otherwise; the standard of care remains avoidance of all alcohol use during pregnancy [6].

The study carried out in Jimma, Ethiopia showed that neonates of mothers who chewed Khat during pregnancy had a significant decrease in all neonatal parameters such as birth weight, length, head circumference and Apgar score at 1 and 5 min in comparison with those of who did not chew Khat during pregnancy, with this effect increasing in severity with the increased frequency and duration of Khat chewing [7]. According to the national survey conducted in the United States (2012), 8.5% of pregnant women drunk alcohol and 15.9% smoked cigarettes, resulting in over 550,000 exposed to alcohol and over one million exposed to tobacco in uterus [8].

Other studies in Geneva, Swedish, and Korea showed that about 36.3%, 30% and 16.4% of pregnant women were found to use alcohol during pregnancy respectively with 6% of Swedish pregnant women reported to consume two to four times per month during pregnancy [9,10,11].

The Ethiopia Demographic and Health Survey (2011) found that 45% of women reported drinking alcohol at some point in their lives with great variations in different parts of the country ranging from 2% in Somali to 86% in Tigray, the incidence increasing with age, and higher among urban than rural residents and khat chewing is 11% [12].

The study conducted in United States showed that the prevalence of any substance use during pregnancy was 25.8%; while cigarette and alcohol use were 18.9% and 10%, respectively. In its use women who were employed and married were significantly less likely to have used any substance during pregnancy, adjusting for age, ethnicity and income [13].

According to a data from Study in Jos Plateau State Nigeria, the prevalence of substance used among pregnant women was 10.8%, with alcohol the most used substance (5.4%) and marital status, educational level and employment status were significantly associated with substance use all with P<0.001 among these pregnant women [14].

As to the prevalence of khat chewing, a study in Yemen showed that 40.7% of the women reported chewing khat during pregnancy and the proportion was greater among older women aged 25–49 yrs compared to those of less than 25 yrs of age. In this study women who reside in the mountainous area were 3 times more likely to chew khat during their pregnancies when compared to inhabitants of lowland. Similarly, clients with no education were 1.6 times more likely to chew khat than those with education; clients with lower wealth index were 1.5 times more likely to chew khat than those with education were 1.3 times more likely to chew khat than urban dwellers [7].

Another study conducted in Bahir-Dar, Northwest Ethiopia (2014), showed that the prevalence of alcohol use during pregnancy was 34%. According to this study, married study participants were three times more likely to drink alcohol during pregnancy than single mothers. Mothers who had alcohol consuming partner and those who were offered an alcohol to drink by someone were two and four times more likely to consume alcohol than their counter parts respectively.

Other studies show that mothers who had accomplished high school were three times more likely to drink during pregnancy than illiterate mothers and unemployed and student mothers were three and four times more likely to drink alcohol than mothers who were employed respectively. Additionally, mothers with unplanned pregnancy were found to be three times more likely to drink alcohol during pregnancy when compared to mothers with planned pregnancies. As to parity, it was found that pregnant mothers who did not have any child were 6.7 times more likely to consume alcohol during pregnancy when compared to those who had a child [15].

Furthermore, literatures indicate that history of family substance use can increase the risk of alcohol consumption in those whose mothers reported alcohol consumption before, during and after pregnancy. There was an increased risk of early alcohol initiation among the ones exposed to greater alcohol use during pregnancy [16].

Though alcohol consumption, khat chewing and cigarette smoking have become common practices in Ethiopia, to the knowledge of the authors there is little data on the prevalence of substance use and its associated factors among pregnant women in Jimma town public health facilities.

Therefore, the purpose of this study was to investigate the prevalence of substance use and associated factors among pregnant women attending antenatal care in Jimma town public health facilities.

Methods and Materials

A facility based cross sectional study was carried out from March 10 to April 10, 2017 with the aim of determining the magnitude of substance use and its associated factors among pregnant women in six health facilities of Jimma town on systematically sampled 296 pregnant women. Jimma town is located in Jimma zone, Oromia regional state, to the southwest, 355 Km away from Addis Ababa, the capital city of the country. According to the 2017 town health office's plan, estimated total population of Jimma Town was 194, 139 among which 6,736 were pregnant women. The sample size was calculated using a single population proportion formula considering, P=0.34 for alcohol prevalence rate from study conducted in Bahir-Dar town, North West Ethiopia [15]. The calculation of sample size was based on the previous twelve months of overall antenatal care uptake of the six health facilities, from which the approximate overall previous monthly ANC uptake of the six health facilities was determined (N=1227) which was considered as the source population for the current study sample. Then, the overall sample size was calculated and proportionately allocated to each health facility based on their monthly share of antenatal care average uptakes.

The study units were selected using systematic sampling technique, in which at every Kth intervals at respective health facility a pregnant woman came for ANC service is interviewed on daily basis during the study period.

Before the actual data collection, ethical clearance was obtained from Jimma University ethical review board (IRB), letter of support was taken to the six public health institution authorities, verbal consent was obtained from study participants , privacy, confidentiality and the right to withdraw from the study at any time inconvenience is felt by the study participants was ensured.

Data was collected using interviewer administered pre-tested questionnaire by six diploma midwives under the supervision of two BSc midwives. The data collecting instrument consisted of sociodemographic characteristics (age, ethnicity, marital status, religion, educational status, economic status, occupation, ethnicity, place of residence), patterns of substance use (Current alcohol use, current khat chewing, and current use of cigarette), and obstetric history (Gravidity, gestational age and parity) and family history of substance use.

To ensure data quality, the instrument was pre-tested on 10% of the sample at Serbo health centre 22 km away from Jimma town and based on the finding some modifications were made, data collectors were trained, day to day follow up and data was checked for completeness. The questionnaire was prepared originally in English and then translated to Afan Oromo and Amharic language to facilitate understanding and ensure consistency when administered to the Citation: Tesso FY, Woldesemayat LA, Kebede DB (2017) Magnitude of Substance Use and Associated Factors among Pregnant Women Attending Jimma Town Public Health Facilities, Jimma Zone, Oromia Regional State Southwest Ethiopia. Clinics Mother Child Health 14: 275. doi:10.4172/2090-7214.1000275

respective respondents, then, translated back again to English language.

The collected data was cleaned, edited, coded and entered into Epi Data Version 3.1 and exported to and analyzed using SPSS version 21.0. Bivariate logistic regression analysis was done to determine the association between the independent variable with the outcome of interest which is the substance use with a p-value <0.05 considered to be significant with 95% confidence interval at α =0.5.

Results

Out of 296 study participants 293 were interviewed making a response rate of 98.9%. Of the total 293 respondents, 147 (50.2%) were between 25 to 34 years with a mean age of 26 (\pm 5 SD), 129 (44%) were Oromo followed by Dawro 78 (26.6%). One hundred fifty three (52.2%) were Muslims followed by Orthodox 86 (29.4%) by religion and 125 (76.8%) were from urban area by residence. Two hundred eighty two (96.2%) were married, 102 (34.8%) attended primary education and 148 (50.5%) were house wife by occupation (Table 1).

Variables		Frequency (N)	Percentage (%)
Age	15-24	114	38.9
	25-34	147	50.2
	≥ 35	32	10.9
Ethnicity	Oromo	129	44
	Dawro	78	26.6
	Kafa	51	17.4
	Gurage	21	7.2
	Others*	14	4.8
Marital status	Married	282	96.2
	Single	5	1.7
	Widowed	2	0.7
	Divorced	4	1.4
Religion	Muslim	153	52.2
	Orthodox	86	29.4
	Protestant	48	16.4
	Others**	6	2
Education	Illiterate	60	20.5
	Reads &write	30	10.2
	Primary	102	34.8
	Secondary	58	19.8
	College+	43	14.7
Occupation	Housewife	148	50.5
	Merchant	73	24.9
	Govt.employee	51	17.4

	Farmer	12	4.1
	Others***	9	3.1
Income	<1000	157	53.6
	1001-2000	42	14.3
	2001-3000	46	15.7
	3001-4000	20	6.8
	4000+	28	9.6
*(Amara, Wolaita, laborer)	Yem, Hadiya); **(wa	qefata, catholic);	***(student, daily

Table 1: Socio demographic characteristics of pregnant women in Jimma town public health facilities, Jimma zone, Oromia regional state, south west Ethiopia, 2017 (N=293).

The finding of the study showed that, 111 (37.9%) were current substance users among which majority, 73 (65.8%) chewed khat (Table 2). The study also indicated that educational status was significantly associated with substance use with (AOR=0.091, 95% CI: (0.014, 0.574) indicating that women who can read and write were less likely to use substances during pregnancy than those who can't read and write. House wives were 2 times more likely to use substances during pregnancy (AOR=2.027, 95% CI: (0.249, 16.528) when compared to merchants. Pregnant women in their second trimester were 3.3 times more likely to use substance during pregnancy when compared to those in their first trimester. Furthermore, study finding showed that pregnant women with no family history of substance use were less likely to use substances than those who had family history of substance use (AOR=0.122 95% CI:(0.066, 0.228)). On the other hand gravidity and parity were not found to be associated with substance use during pregnancy (Tables 3 and 4).

Variables	Frequency (N)	Percentage (%)	Total
Current Substance use			
Yes	111	37.9	111 (37.9%)
No	182	62.1	261 (100%)
Current Khat use			
Yes	73	65.8	73 (65.8%)
No	38	34.2	111 (100%)
Current use of alcohol			
Yes	33	29.7	33 (29.7%)
No	78	70.3	111 (100%)
Current use of Cigarette			
Yes	3	2.7	3 (2.7%)
No	108	97.3	111 (100%)

Table 2: Patterns of substance use among pregnant women in Jimma town public health facilities, Jimma zone, Oromia regional state, south west Ethiopia, 2017 (N=293).

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Veriables	Substanc	e use	AOR (95% CI)
valiables	Yes	No	
Age			
15-24	40	74	1
25-34	58	89	1.062 (0.375, 3.008)
≥35	13	19	1.359 (0.287, 6.430)
Ethnicity			
Oromo	51	78	1
Dawro	31	47	1.700 (0.400, 7.234)
Kafa	17	34	1.434 (0.139, 14.782)
Gurage	9	12	0.368 (0.094, 1.443)
Others*	3	11	1.865 (0.237, 14.710)
Education	:		
Illiterate	35	25	1
Reads & write	11	19	0.091 (0.014, .574)
Primary	36	66	0.223 (0.035, 1.438)
Secondary	18	40	0.486 (0.095, 2.478)
College+	11	32	0.519 (0.119, 2.254)*
Occupation			
Housewife	59	89	2.027 (0.249, 16.528)*
Merchant	29	44	1
G.employee	13	38	0.565 (0.075, 4.288)
Farmer	8	4	0
Others***	7	2	1.732 (0.101, 29.596)
Income			·
<1000	63	94	1
1001-2000	16	26	1.399 (0.244, 8.036)
2001-3000	12	34	3.021 (0.400, 22.829)
3001-4000	6	14	1.099 (0.097, 12.434)
4000+	14	14	1.251 (0.113, 13.861)
Family history of sub	use		
Yes	73	37	1
No	38	145	0.122 (0.066, 2.28)*
AOR=Adjusted Odd wolaita, Amara); ***=(s	Ratio; *=Sig student, daily	nificant al	t P<0.05; 1=Reference; **=(Tigre,

Table3: Socio-demographic and family history factors associated with substance use among pregnant women attending antenatal care in Jimma Town public health facilities, Jimma zone, and Oromia regional state, south west Ethiopia, 2017, (N=293).

Verieblee	Substance us	Ð	AOR (95% CI)
variables	Yes	No	
Gravidity			
Primigravida	30	67	1
Multigravida	81	115	0.554 (0.190, 1.621)
Parity			
Nulipara	30	67	1
Primi para	40	60	1.697 (0.831, 7.622)
Multipara	41	55	1.218 (0.135, 10.983)
Gestational age		1	1
1st trimester	18	38	1
2nd trimester	51	84	3.325 (1.298, 4.251)*
3rd trimester	42	60	1.816 (0.909, 3.630)

Table 4: Obstetric variables associated with substance use among pregnant women attending antenatal care in Jimma Town public health facilities, Jimma zone, and Oromia regional state, south west Ethiopia, 2017, (N=293).

Discussion

The overall prevalence of substance use among pregnant women in the study area was high (37.9%), with khat chewing predomination (65.8%) followed by alcohol consumption (29.7%) and cigarette smoking (2.7%). This finding is inconsistent with the findings of the United States (25.8%;) where the prevalence of cigarette and alcohol use were 18.9% and 10%, respectively [13].On the other hand study conducted in Yemen also showed that the prevalence of khat chewing during pregnancy was also less this study findings (40.7%) [7], similarly, the findings were higher than study conducted in Geneva and Bahir-dar, 36% and 34% respectively [10,15]. These differences might be attributed to variations in socio-demographic variables of the study participants, geographical locations, cultural differences, and information given by health care providers.

Furthermore, the study showed that education was significantly associated with substance use (AOR=0.091 95% CI: (0.014, 0.574)), indicating that women who can write and read were less likely to use substances during pregnancy than illiterates. This finding is consistent with study conducted in Bahir dar town in which, mothers who had accomplished high school were three times more likely to drink alcohol during pregnancy than illiterate mothers, but the odds of drinking is higher in this study [15].

As to the relationships between the gestational age and substance use, the study showed that pregnant women in their second trimester were 3.3 times more likely to use substances than those who are in their first trimester (AOR=3.325 95% CI: (1.298, 8.251) and this finding is almost similar with the finding from study conducted in united states where women in their second or third trimester compared to the first were significantly less likely to have used any substance during pregnancy, adjusting for age, ethnicity and income [13], but, that of study in Bahir-Dar town is inconsistent with this

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finding in which gestational age has no association with substance use during pregnancy [15].

As to the other factor, it was found that pregnant women with no family history of substance use were less likely to use substances than those who had family history of substance use (AOR=0.122 95% CI: (0.066, 0.228)). This finding was consistent with findings from the Mater University Study of Pregnancy and its outcomes [16].

The possible explanation for the variation may be linked to the difference in awareness, sample size variation and cultural differences.

Conclusion

In general, the study found that the prevalence of substance use was high when compared to various studies and educational status, family history of substance use, occupational status and gestational age were found to be associated with substance use.

Policy Implications

Education and counselling of pregnant women at antenatal care clinic on substance use and its effects on the health of the child calls attention when designing primitive and preventive strategies. Furthermore, designing strategies which increase the communities' awareness and participation in the risk reduction or prevention of use of substances during pregnancy is required.

Limitations

The study did not address the cause and effect relationship and the findings of the study were limited to the health facilities and can't be inferred to the general population.

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