

SAINT PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE



Knowledge, Attitude, Practice towards Alcohol Consumption
during Pregnancy and Factors Affecting the Behavior in Pregnant
Mothers Visiting SPHMMC ANC Clinic in the Months of March
to May, 2018

By Biniyam Tehelku

Advisers: Mr. SAMSON Zegeye (MPH)

A Research Thesis to be submitted to the Department of Public Health,
SPHMMC, in Partial Fulfillment of the Requirements for the Degree of Doctor
in Medicine

FEBRUARY, 2018

ADDIS ABABA, ETHIOPIA

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Table of Contents

Acknowledgement	i
Abbreviations	ii
List of Figures	iii
List of Tables	iii
Abstract	iv
1. Introduction	1
1.1 Background.....	1
1.2 Statement of the problem	2
1.3 Significance of the study.....	2
2. Literature Review	4
2.1 Picture of alcohol consumption during pregnancy	4
2.2 Fetal Alcohol Syndrome (FAS) and Alcohol Effects	4
2.3 Knowledge of pregnant mother on effect of alcohol in pregnancy.....	5
2.4 Attitude of pregnant mother on effect of alcohol in pregnancy	5
2.5 Practice of pregnant mother on effect of alcohol in pregnancy	5
2.5 Factors Affecting Alcohol Consumption in Pregnant Mothers.....	6
3. Research Objectives	7
3.1 General Objectives.....	7
3.2 Specific objectives	7
4. Methods and Materials	8
4.1 Study Areas.....	8
4.2 Study design.....	8
4.3 Source Population	8
4.4 Study Population.....	8
4.5 Sample Size Determination.....	8
4.6 Sampling Technique	9
4.7 Data Collection	9
4.8 Data Quality Assurance	9
4.9 Study variables.....	9
4.10 Operational Definitions.....	9
4.10 Data Processing and Management	10
4.11 Data Analysis	10
4.12 Ethical Considerations	10
4.13 Dissemination of Findings	11

5. RESULT	12
5.1 Sociodemographic status of the respondents	12
5.2 Parity, Gravidity and length of pregnancy of the respondents	14
5.3 Attitude concerning alcohol consumption during pregnancy	15
5.4 Knowledge concerning alcohol consumption.....	15
5.5 Practice of alcohol consumption.....	15
5.6 Factors associated with practice of alcohol consumption.....	16
6. Discussion and Recommendation.....	19
6.1 Knowledge of the pregnant mothers about alcohol consumption	19
6.2 Attitude of the pregnant mothers about alcohol consumption.....	19
6.3 Practice of the pregnant mothers and factors associated with towards alcohol consumption behavior during pregnancy	19
6.4 Conclusion	20
6.5 Recommendations	20
6.6 Limitations of the study	20
6.7 Strength of the Study	20
References.....	21
Annex 1	21

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Abbreviations

ANC: Ante Natal Care

AOR: Adjusted Odds Ratio

CI: Confidence Interval

EDHS: Ethiopian Demographic and Health Survey

FAS: Fetal Alcohol Syndrome

FASD: Fetal Alcohol Spectrum Disorders

KAP: Knowledge, Attitude and Practice

NGO: Non-Governmental Organizations

SPHMMC: Saint Paul's Hospital Millennium Medical College

UK: United Kingdom

US: United States

WHO: World Health Organization

List of Figures

Figure 1. Length of the pregnancy of the mothers visiting SPHMMC ANC follow-up clinic from April to June 2018, (n=309).....	22
Figure 2. Number of Children of the mothers visiting SPHMMC ANC follow-up clinic from April to June 2018, (n=309).....	22
Figure 3. Practice of alcohol consumption before pregnancy of mothers visiting SPHMMC ANC follow-up clinic from April to June 2018.....	23

List of Tables

Table1. Socio demographic characteristics of respondents on KAP towards Alcohol Consumption during Pregnancy and Factors Affecting the Behavior in Mothers Visiting SPHMMC ANC Clinic, 2018	13
Table 2 Sociodemographic factors affecting alcohol consumption during pregnancy in pregnant mothers visiting SPHMMC ANC follow-up clinic from April to June 2018.....	17
Table 3 Factors affecting alcohol consumption during pregnancy in pregnant mothers visiting SPHMMC ANC follow-up clinic from April to June 2018.....	18

Abstract

Background: Alcohol is the most commonly used teratogen substance which is used during pregnancy with detrimental effects on the fetus and the mother.

Objectives: This research aims at addressing the knowledge, attitude towards and practice of alcohol consumption in pregnant mothers visiting SPHMMC ANC clinic along with associated factors that affect the behavior.

Methods: The research was conducted in a hospital based cross-sectional study design. The source population were all patients visiting SPHMMC making the study population all pregnant mothers visiting ANC clinic, from April to June 2018. A simple random sampling technique was used and all data collection, entry, analysis and presentation was handled by the researcher.

Results: A total of 309 pregnant mothers were the respondents of the study with mean age of 27.3 with standard deviation of ± 4.2 . Ninety seven percent of the respondents were married and 22 of the mothers never attended school. From the respondents 87.7% and 69.6% found to have good attitude and knowledgeable about the effects and practice of alcohol consumption during pregnancy respectively. Around 12.3% of pregnant mothers claimed to drink alcohol during their current pregnancy. Gravidity, gestational age, attitude and previous alcohol consumption habit had a significant association with behavior of pregnant mothers toward alcohol consumption.

Conclusion and recommendation: Level of alcohol consumption habit during pregnancy is significant in pregnant mothers visiting SPHMMC ANC follow-up clinic. Measures should be taken to increase knowledge, favorable attitude and good practice towards alcohol consumption habit during pregnancy.

Key Words: Alcohol consumption, Pregnancy, Ethiopia

1. Introduction

1.1 Background

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]. The World Health Organization (WHO) recently stated that harmful consumption of alcohol is among the top five risk factors for disease, disability and death throughout the world. It is a causal factor in several diseases and injury conditions, and intake is on the increase, especially in low income countries. [3, 4]

Substance use during pregnancy can affect the fetus both directly passing through placental barrier and indirectly through poor maternal health habits and environmental conditions [5, 6]. Alcohol is the most commonly used teratogen substance which is used during pregnancy with detrimental effects on the fetus and the mother. [7] Consumption of alcoholic beverages during pregnancy might increase the incidence of preterm delivery and spontaneous abortion, substantial risk of mental, physical and psychological harm to her offspring which is the so called fetal alcohol spectrum disorders (FASD) and fetal alcohol syndrome (FAS). [8]

Fetal Alcohol Spectrum Disorders (FASD) is an umbrella term describing the range of effects that can occur in an individual whose mother drank alcohol during pregnancy. These effects may include physical, mental, behavioral, and/or learning disabilities with possible lifelong implications. Although FASD cannot be cured, it is entirely preventable.

Prenatal alcohol exposure is also associated with fetal death, reduced brain mass and prenatal and postnatal growth retardation [9, 10]. World Health Organization (WHO) had recognized the risk of prenatal alcohol exposure on developmental and intellectual disabilities [11]. Moreover, cognitive deficits have also been demonstrated in language, fine and gross motor ability, attention, memory and judgment. Besides, cardiac, skeletal, renal, ocular and auditory deficits have been proved effect of alcohol consumption during pregnancy [12].

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. The percentage of women who had previous history of alcohol consumption

decreased from 45% in 2011 to 35% in 2016. Around 61.1 % of women who lives in Addis Ababa drank alcohol in their life time. The decline among men was similar (53% in 2011 to 46% in 2016). The proportion of women who consumed alcohol on 6 or more days in the last 30 days has increased since 2011, from 48% to 50%. [13, 14]

1.2 Statement of the problem

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 [7]. There is no defined safe level of alcohol consumption during pregnancy.

The current belief in the scientific community and the U.S. Surgeon General is that no level of alcohol consumption during pregnancy is safe for the health of the fetus and that there is a clear causal relationship between prenatal alcohol consumption and FASD. [15] However, there is conflicting data and explanations regarding who engages in prenatal alcohol consumption and why they do so. Level of knowledge and attitude toward alcohol consumption in pregnant mothers should be identified to search ways to combat the situation. Associated factors which directly and indirectly affects the behavior have to be identified through studies with different level of the community.

Based on these assumptions obtaining tangible data about the level of practice of alcohol consumption alongside the knowledge and attitude of the pregnant mothers about the issue regarding our setup is very important.

1.3 Significance of the study

The study assess the knowledge of the pregnant mothers about the effects of alcohol on the fetus which gives an information to estimate the knowledge of mothers about effects of alcohol on the fetus. The research measures the attitude of the mothers towards consumption of alcohol in pregnancy. This study also identifies factors associated with the behavior of alcohol consumption during pregnancy. The findings of the study assists identification of ways to halt the adverse effect of alcohol consumption in pregnancy both in the mother and in the fetus.

Studies like this improves quality of health care by increasing evidences regarding the issue. This research helps to display the picture of alcohol consumption in pregnancy and motivate health

policy makers to bring effort to start an organized strategy to equip women and health workers towards the problem.

The research aims to asses certain risk factors that can contribute to increased behavior of alcohol consumption which can be used as a source data to motivate establishing certain methods to combat alcohol related pregnancy problems.

2. Literature Review

2.1 Picture of alcohol consumption during pregnancy

Across the globe, it is evident that the consequences of using of alcohol during pregnancy are similar, but its prevalence varies. It has been reported that up to 1 in 100 children in the United States are born with FASD. Furthermore, around 2 children in 1,000 are diagnosed with FAS in the US. European study discovered only 53% of women in France reported complete abstinence during pregnancy and an Australian study reported 81% of pregnant women consume alcohol [25]. Study conducted in Geneva showed that about 36.3% of the women drank at least one glass of alcohol during pregnancy [22]. Another international multicenter cohort study show a high prevalence of alcohol use during pregnancy (ranging from 20% to 80% in Ireland), from 40% upwards in the UK, Australia and New Zealand, and high levels of binge drinking during pregnancy. [26]

A 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 ordered an alcohol to drink by someone were two and four times more likely to consume alcohol than their counter parts respectively. [27]

2.2 Fetal Alcohol Syndrome (FAS) and Alcohol Effects

The amount of alcohol ingested the length of period using alcohol and the developmental stage of the embryo and fetus at exposure mediate the effects of ethanol intake on the developing fetus. Alcohol drinking, even in moderate amounts, is also associated with an increased risk of spontaneous abortions, especially in the first trimester of pregnancy and with infertility in males and females [28]. It is, however, important to note that a meta-analysis of reports on the incidence of fetal malformations in moderately alcohol abusing women during pregnancy did not show an increase in the rate of congenital anomalies [29].

Children whose mothers reported alcohol consumption during pregnancy performed significantly poorly for memory and spatial abilities tests from small effect size difference for ‘Atlantis’ (0.27) and ‘Triangle’ (0.29) to moderate effect size difference for ‘Number recall’ (0.72) compared to children whose mothers did not consume alcohol during pregnancy; the exposed children scored significantly higher errors with a small effect size (0.37) at problem solving test compared to unexposed children.[28]

2.3 Knowledge of pregnant mother on effect of alcohol in pregnancy

A number of studies have been performed to explore women's perceptions of alcohol consumption during pregnancy. In one survey which is done in Irish society it is reported that 75% of alcohol consumers disagree that it is safe to drink alcohol in moderation during pregnancy. [26]

2.4 Attitude of pregnant mother on effect of alcohol in pregnancy

Seventy six percent of pregnant Danish women interviewed at an antenatal clinic considered alcohol intake during pregnancy acceptable. [27] A similar study in France found that while only 6% of pregnant women would not consider drinking even one drink per day, 60% considered two drinks per day is reasonable [28].

2.5 Practice of pregnant mother on effect of alcohol in pregnancy

The prevalence of alcohol consumption during pregnancy over 2007 and 2010 in two cross-sectional nationwide samples of Dutch women is 22 % in 2007 and 19 % in 2010. One in five women do drink alcohol while pregnant. European study discovered only 53% of women in France reported complete abstinence during pregnancy and an Australian study reported 81% of pregnant women consume alcohol [28]. Study conducted in Geneva showed that about 36.3% of the women drank at least one glass of alcohol during pregnancy [29]. Screening of alcohol use in Swedish antenatal clinics for the year preceding pregnancy, explored as one-third of the subjects (30%) were continued to regular alcohol use during pregnancy, and 6% reported consumption two to four times per month [30]. A study done on one thousand pregnant Korean women who visited the Department of Obstetrics and Gynecology in 2010 showed 16.4% of them were using alcohol during their pregnancy [31]. The epidemiological study that had been done in Canadian women found that 10.8% of women drank alcohol at some point during their pregnancies [32] A survey conducted in California reported that among women who recently gave birth found that approximately 15.8% of women in 2006 reported drinking during the first or third trimester of their pregnancy [33].

The 2011 Ethiopia Demographic and Health Survey (EDHS) found that 45% of women and 53% of men reported drinking alcohol at some point in their lives. For both women and men this proportion increases with age, and it is higher among urban residents than rural residents. Among regions the percentage of respondents who ever drank alcohol ranges from 2 percent of women and 5 percent of men in Somali to 86 percent of women and 91 percent of men in Tigray. In addition to the above, in majority of the community, it is common and normal habit to prepare

beverage at home in every ceremony and holydays and drinking it without hard restriction of gender, and age for lack of knowledge on its unfavorable consequence [13]. A study conducted in Bahir-Dar, Northwest Ethiopia (2014), showed that the prevalence of alcohol use during pregnancy was 34%. [20]

2.5 Factors Affecting Alcohol Consumption in Pregnant Mothers

A study conducted in Bahir-Dar, Northwest Ethiopia (2014), showed that 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 ordered an alcohol to drink by someone were two and four times more likely to consume alcohol than their counter parts respectively. [20]

Other studies show that mothers who had accomplished high school were three times more likely to drink during pregnancy than illiterate others 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 [20]. 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].

3. Research Objectives

3.1 General Objectives

The main aim of this research is to assess the knowledge attitude and practice of alcohol consumption and its effects during pregnancy in pregnant ladies visiting ANC clinic at SPHMMC

3.2 Specific objectives

- ✓ To identify the level of knowledge of pregnant mothers about the effect of alcohol consumption during pregnancy in SPHMMC
- ✓ To estimate the attitude of pregnant mothers towards consuming alcohol during pregnancy
- ✓ To evaluate the degree of practice of alcohol consumption during pregnancy
- ✓ To identify the associated factors that affects the behavior of pregnant mothers towards alcohol consumption

4. Methods and Materials

4.1 Study Areas

St. Paul's hospital millennium medical college (SPHMMC) is located in Gulele sub city Addis Ababa. St. Paul's Hospital was built in 1969 (was named St Paul General Specialized Hospital until 2008) by Emperor Haile Selassie in collaboration with the German Evangelical Church which contributed around seventy percent of the initial expense, as a source of medical care for underserved populations. It currently has 392 beds, with an annual average of 200,000 patients and a catchment population of more than 5 million. Approximately 75% of the patients receive medical care free of charge. There are over 1300 clinical and non-clinical staffs in over 13 departments. It becomes teaching hospital in 2000 E.C (millennium). In 2000 E.C it begins only with few students less 50 and fewer medical staffs. Currently there are more than 700 students and much more medical staffs including specialists and sub specialists.

4.2 Study design

The research was a facility based comparative cross sectional study using quantitative data.

4.3 Source Population

The source population was all pregnant ladies coming to ANC Clinic at St Paul's hospital millennium medical college from April to June 2018 G.C

4.4 Study Population

The study population was all pregnant mothers who were selected for the study by the sampling parameter at SPHMMC ANC clinic during the study period.

4.5 Sample Size Determination

The proportion was taken from a similar study done in Jimma Zone, Oromia Regional State Southwest Ethiopia which shows that 29.7% of pregnant mothers were drinking alcohol while they were pregnant. The proportion give as maximum number of sample compared to the proportion of knowledge and attitude of pregnant mothers in similar studies abroad. [19, 20, 34]The margin of error being 0.05.

The following formula was used to determine the sample size:

$$n = Z^2 p (1-p) / d^2$$

Where;

n: sample size

p: proportion of alcohol consumption

z: confidence interval

d: marginal error

$$n = 316$$

4.6 Sampling Technique

The sampling technique used for this research is convenience sampling method based on the daily activities of the clinic considering the number women coming to the clinic daily with relation to the data collection time and sample size.

4.7 Data Collection

The data collection instrument was interviewer filled questionnaire. The instrument was adopted from standard questionnaires used in similar studies. The data collection involved the researcher and few medical students.

4.8 Data Quality Assurance

Each questionnaire was manually checked for completeness and incomplete questionnaires were dismissed.

4.9 Study variables

4.8.1 DEPENDENT VARIABLES

- Knowledge regarding effects of Alcohol consumption in pregnancy
- Attitude towards drinking alcohol during pregnancy
- Practice of consuming alcohol during pregnancy

4.8.2 INDEPENDENT VARIABLES

- Socio-demographic characteristics
- Relevant obstetric histories

Parity gestational age, number of children, pregnancy plan status, previous history of abortion, ANC follow up

- Behavior of alcohol consumption before pregnancy

4.10 Operational Definitions

Knowledge of the adverse effects of alcohol has been shown to be a strong predictor of behavior of alcohol consumption during pregnancy. [35] The respondents were taken as knowledgeable if they answer more than half of knowledge related questions. These included whether participants thought alcohol use could cause problems in a developing baby, what they thought these problems or features may be serious, as well as how much they knew about certain aspects of FAS and the amount of alcohol that cause this condition.

In this study good attitude of a mothers defined if a pregnant lady agrees that alcohol should be stopped completely during pregnancy. Attitude of the pregnant mothers is measured by degree of acceptability of drinking alcohol during pregnancy by the pregnant woman. If a pregnant mother agrees that alcohol consumption has detrimental effect on the fetus in subsequent questions. [20]

In the study, if pregnant lady completely abstain from alcohol to be stated as she has a good practice In the United States, one standard drink is defined as 340 gram of beer, 142 gram of wine, or 42 grams of liquor or 14 gram of alcohol [34]. In the study which is done in Bahir-dar Ethiopia, the data was gathered as what type of alcohol was consumed, to what amount of alcohol was taken in terms of milliliters and it was changed into standard drink, accordingly. Studies have shown that there is no known safe amount of alcohol consumption during pregnancy, even thou the general tenor supports the concept that small amounts are safe. [20].

4.10 Data Processing and Management

The collected data was cross checked manually for completeness, accuracy and clarity. Those which do not meet the standards of this research was left out of the analysis. Then the data was entered into the computer statistical package program SPSS version 20 for analysis. All of these activities were done by the researcher with neat and orderly manner.

4.11 Data Analysis

The processed data was analyzed using software analysis (SPSS version 20) after which it was interpreted and presented by charts, figures, tables and text form. Descriptive statistics was conducted using frequency distributions and proportions to examine and uncover any significant statistical correlation between the independent and dependent variables.

4.12 Ethical Considerations

The research does not include any interventional methods that may raise issues of ethicality and the data collection is unlikely to interfere with the daily activities of the study population thus the researcher obtained clearance certificate from the SPHMMC officials easily. Informed verbal consent was also obtained from the clients before commencing the study and confidentiality was also maintained. Respondents were also informed that they can refuse or discontinue participation at any time they want. Information was recorded anonymously.

4.13 Dissemination of Findings

The results of the study was presented to the department of public health in St. Paul Millennium Medical College. Dissemination of the result will also be made to SPHMMC and the department of gynecology and obstetrics. The copy of the results will be available at the libraries and progressively will put on the Public health department

5. RESULT

5.1 Sociodemographic status of the respondents

A total of 316 pregnant mothers were interviewed. Around 309 mothers completed the interview which makes the response rate 97.8%. Among the study participants 46.6 % of them ranges from 25 to 29 years of age. The mean age is around 27.3 with standard deviation of ± 4.2 . Among the respondents, 97.7% were married. Regarding religion of the respondents 52.6 % were orthodox and, the ethnicity Oromo makes 45.8 of the study participants. Around 15.9% of the respondents have an educational background of diploma and above. Among the 309 respondents 22 of them never attended school while 91% of the respondents attended school at least up to elementary level and more. The great majority, around 61.8%, of the respondents were housewives. Among 118 employed subjects 22.7 % of them were government or NGO employees. (See table 1)

Table1. Socio demographic characteristics of respondents on KAP towards Alcohol Consumption during Pregnancy and Factors Affecting the Behavior in Mothers Visiting SPHMMC ANC Clinic, 2018

		Frequency (n=309)	Percent (%)
AGE	From 19 to 24	82	26.5
	From 25 to 29	144	46.6
	From 30 to 34	62	20.1
	35 and above	21	6.8
RESIDENCY	Rural	44	14.2
	Urban	265	85.8
RELIGION	Orthodox Christian	164	53.1
	Protestant Christian	41	13.3
	Muslim	104	33.7
ETHNICITY	Oromo	141	45.6
	Tigre	8	2.6
	Amhara	103	33.3
	Gurage	46	14.9
	Others	11	3.6
MARITAL STATUS	Married	302	97.7
	Never married	3	1.0
	Divorced	1	.3
	Widowed	1	.3
	Separated	2	.6
EDUCATIONAL STATUS	Never attended school	22	7.1
	Can read and write	6	1.9
	Elementary school	102	33.0
	Secondary school	130	42.1
	Diploma, degree or above	49	15.9
OCCUPATION	Housewife	191	61.8
	Government/NGO worker	70	22.7
	Trader	28	9.1
	Daily laborer	6	1.9
	Farmer	5	1.6
	Others	9	2.9

5.2 Parity, Gravidity and length of pregnancy of the respondents

Around 29.1 % of the respondents were having their first pregnancy during the interview. The maximum number of pregnancy that the respondent having were seven with mean value of 2.31 and standard deviation of ± 1.32 . From the study 66.3% of the subjects have at least one child. The mean number of children the respondents was having 1.24 with standard deviation of ± 1.22 . Among the respondents 75% of the subjects were on the third trimester of their current pregnancy making the mean length of pregnancy 7.5 months.

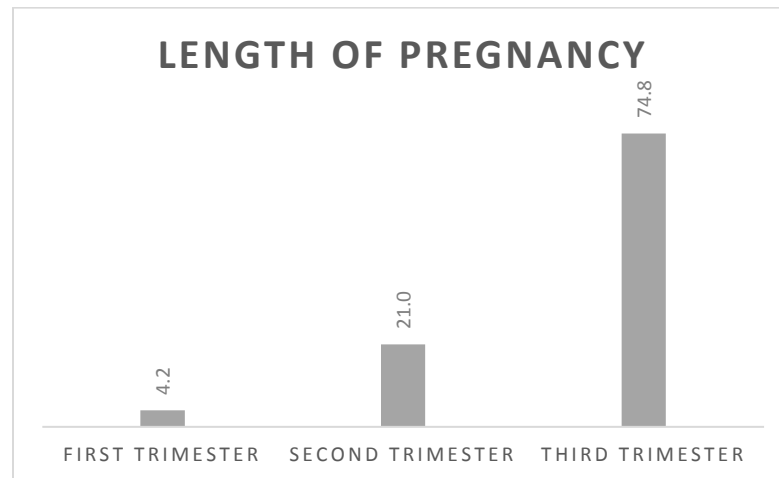


Figure 1. Length of the pregnancy of the mothers visiting SPHMMC ANC follow-up clinic from April to June 2018, (n=309)

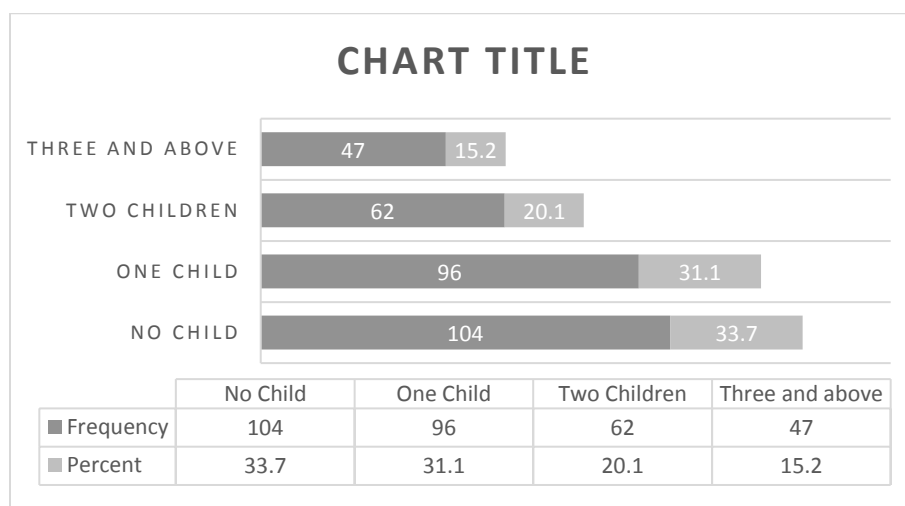


Figure 2. Number of Children of the mothers visiting SPHMMC ANC follow-up clinic from April to June 2018, (n=309)

5.3 Attitude concerning alcohol consumption during pregnancy

Around 87.7% of the study subjects has good attitude in which they agreed that alcohol should be stopped completely during pregnancy. Among the respondents, 89% disagreed to the idea that alcohol has no effect on the fetus when it is taken during pregnancy. Only 13 out 309(4.2%) agreed that alcohol may be good for pregnancy while around 15.9 % of the respondent agrees if alcohol could be used occasionally.

5.4 Knowledge concerning alcohol consumption

Regarding knowledge, around 69.6% of the pregnant mothers participated in the study found to be knowledgeable. Among the respondents, 96.1% of them claimed to know alcohol has effect on the fetus but only 68.6 % of the subjects know that the effect is serious. Around 16.8 % of the study subjects claims to know about fetal alcohol syndrome from which 98% and 84% know that it happens when alcohol being taken during pregnancy and has no cure respectively.

5.5 Practice of alcohol consumption

Among the respondents 12.3 % had poor practice in which they consumed alcohol during their current pregnancy. From mothers who consumed alcohol during their current pregnancy, around 86.8% were drinking alcohol after being aware of their pregnancy. Among the 38 pregnant mothers who were drinking alcohol during the current pregnancy 3 of them claimed to drink alcohol as frequent as more than once a week. Around 73% of the pregnant mothers interviewed in the study claimed that they never drink an alcohol in their lifetime. Only 4 out of 309 respondents (4%) drink alcohol more than once a week before the current pregnancy.

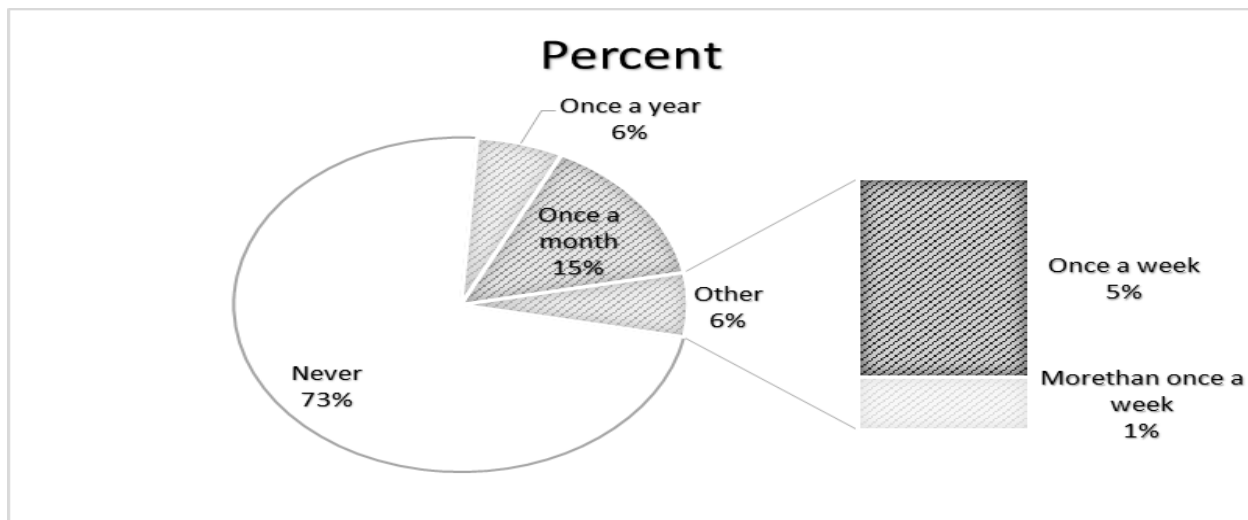


Figure 3. Practice of alcohol consumption before pregnancy of mothers visiting SPHMMC ANC follow-up clinic from April to June 2018, (n=309)

5.6 Factors associated with practice of alcohol consumption

Gravidity, trimester of the pregnancy, attitude, knowledge and previous alcohol drinking habit of pregnant mothers were significantly associated with practice of alcohol consumption during pregnancy. Among the respondents primigravid mothers were three times more likely to drink alcohol during pregnancy than multigravid mothers. (AOR=3.016, 95% CI: (1.138, 7.996)) Pregnant mothers in their second trimester were around 38.3% less likely to drink alcohol than mothers in their third pregnancy. (AOR=0.383, 95% CI: (0.184, 0.801)) Respondents which have good attitude regarding complete cessation of alcohol during pregnancy were 9.6 times less likely to drink alcohol in their current pregnancy than respondents with poor attitude towards the behavior. (AOR=9.637, 95% CI: (4.421, 21.007)) The study also shows that previous history of alcohol drinking habit have significant association with practice of alcohol consumption during pregnancy. Pregnant mothers who drinks alcohol before the current pregnancy were above 86 times more likely to drink alcohol than pregnant mothers with no history of alcohol drinking previously.(AOR=85.787, 95% CI: (19.959,368.728))

Table 2 Sociodemographic factors affecting alcohol consumption during pregnancy in pregnant mothers visiting SPHMMC ANC follow-up clinic from April to June 2018, (n=309)

	Practice of Alcohol Consumption During Pregnancy		Crude OR, 95% C.I.(Lower, Upper)
	Yes	No	
AGE			
From 19 to 24	8	74	1
From 25 to 29	14	130	1.004(0.402,2.505)
From 30 to 34	12	49	0.441(0.168,1.158)
35 and above	4	18	0.486(0.132-1.796)
Residence			
Urban	31	234	1
Rural	7	37	0.700(0.287,1.706)
ETHNICITY			
Oromo	16	125	1
Tigre	2	6	0.384(0.071,2.066)
Amhara	16	87	0.696(0.330,1.46 6)
Gurage	4	42	1.344(0.426,4.245)
EDUCATIONAL STATUS			
Never attended School	2	20	1.667(0.317,8.759)
Can Read and write	1	5	0.833(0.084,8.240)
Elementary school	12	90	1.250(0.459,3.403)
Secondary School	16	114	1.187(0.456,3.089)
Diploma, degree or above	7	42	1
OCCUPATION			
Housewife	20	171	1
Government /NGO worker	11	59	0.627(0.284,1.386)
Trader	4	24	0.702(0.221,2.228)
Daily Laborer	1	5	0.585(0.065-5.259)
Farmer	1	4	0.468(0.050-4.393)
Others	1	8	0.936(0.111-7.872)

Table 3 Factors affecting alcohol consumption during pregnancy in pregnant mothers visiting SPHMMC ANC follow-up clinic from April to June 2018, (n=309)

	Practice of Alcohol Consumption During Pregnancy		Crude OR, 95% C.I.(Lower, Upper)
	Yes	No	
GRAVIDITY			
Multigravid	33	186	1
Primigravid	5	85	3.016(1.138,7.996)
NUMBER OF CHILDREN			
No Child	11	93	1
One Child	8	88	1.301(0.500,3.385)
Two children	12	50	0.493(0.203,1.197)
Three and more Children	7	40	0.676(0.244,1.870)
TRIMESTER			
Third Trimester	22	209	1
First Trimester	2	11	0.579(0.121,2.781)
Second Trimester	14	51	0.383(0.184,0.801)
ATTITUDE			
Good Attitude	21	250	9.637(4.421,21.007)
Poor Attitude	17	21	1
KNOWLEDGEABLE			
Knowledgeable	24	191	1.393(0.685,2.830)
Not Knowledgeable	14	80	1
PREVIOUS ALCOHOL CONSUMPTION HABIT			
Has Previous Habit	36	47	1
Has No Previous Habit	2	224	85.787(19.959,368.728)

6. Discussion and Recommendation

6.1 Knowledge of the pregnant mothers about alcohol consumption

Among the respondents, this study shows, 69.6 % of the pregnant mothers has knowledge that alcohol has serious effect of alcohol on the fetus including some features of FAS. The finding was consistent with a study done in Irish society which showed that seventy five percent of alcohol consumers disagree that it is safe to drink alcohol even in moderation during pregnancy. [19] A similar study which is done in South Africa showed that 54 % of pregnant mothers were found to be aware that could be harmful during pregnancy which is slightly lower than the findings of this study. [24]

6.2 Attitude of the pregnant mothers about alcohol consumption

In similar study done in South Africa 92% of the respondents agreed that alcohol should be stopped completely during pregnancy.[24] It is consistent with this study finding in which 87.7% of the respondents had the same attitude about the above statement.

6.3 Practice of the pregnant mothers and factors associated with towards alcohol consumption behavior during pregnancy

In this study 12.3% of respondents were drinking alcohol on their current pregnancy which is relatively lower compared to an international study done on Dutch women in 2010. [21] The result was consistent with the data obtained from a research done on one thousand Korean women in which 16.4% of them were drinking alcohol in their pregnancy. But the results were slightly lower compared to Ethiopian studies done in Bahir dar and Jimma in which 34% and 29.5% of pregnant mothers were drinking alcohol on their pregnancy respectively. [20, 23] These variations can be attributed to differences in sociodemographic background of the respondents.

Regarding associated factors, the study showed significant association between previous alcohol consuming behavior and alcohol consumption during pregnancy. Pregnant mothers who were not drinking alcohol before the current pregnancy were around 85% less likely to drink alcohol in their current pregnancy than the non-drinkers. Gravidity, gestational age and attitude found to be significantly associated with alcohol consumption behavior in pregnancy.

Similar study done in Jimma shows a significant relationship between gestational age and practice of alcohol consumption which is consistent with this study thou the odds ratio is higher in the above study. [23] Another study done in Bahir dar, North West Ethiopia showed significant relationship between marital status, educational status, occupation and parity which is

different from the findings of this study. The research also shows pregnant mothers who were nulliparous were more likely to drink alcohol than pregnant mothers with a child which is consistent with the findings of this research in which primigravid mothers were more likely to drink alcohol during their current pregnancy than multi gravid mothers . [20]

6.4 Conclusion

As the literatures showed, Effects of alcohol drinking during pregnancy are serious. So that significant that proportion of mothers consumed alcohol during pregnancy in this study. Among the pregnant mothers who participated in the study 69.6 % found to be knowledgeable and 87.7% of them found to have good attitude. The study showed significant association between previous alcohol consuming behavior and alcohol consumption during pregnancy.

6.5 Recommendations

Effects of alcohol drinking during pregnancy are serious as reviewed in the literatures above. As the findings of the study, alcohol consumption behavior among pregnant mothers is significant in this community. Based on these results the researcher recommends that ANC follow up visits should consist of discussions about effects and practice of alcohol consumption during pregnancy. Major health facilities like SPHMMC should be leading in improving child and maternal health through health education in wide and organized methods.

6.6 Limitations of the study

The study was limited to health facility which gives tertiary health care. The questionnaire which was the study material in the study was not pretested.

6.7 Strength of the Study

The study of one of its kind in this area. The response rate was relatively high.

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Annex 1 Individual Questionnaire for a study concerning Knowledge, practice and attitude about alcohol consumption in pregnancy on mother's on follow up at SPHMMC ANC Clinic

Informed Consent

This study is being done by Dr. Biniyam Tehelku who is a final year medical student in SPHMMC. The study provides a baseline knowledge, attitudes and practices concerning effects of alcohol use during pregnancy. We are interviewing pregnant mothers visiting the ANC follow up clinic in SPHMMC. We would very much appreciate your participation in this research. The study participants will be randomly selected from pregnant mothers visiting the ANC clinic.

The information you provide will help different organizations to plan health services. The interview usually takes between 15 and 20 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons. Participation in this study is voluntary and you can choose not to answer any individual question or all of the questions. However, we hope that you will participate in this study since your views are important.

At this time, do you want to ask me anything about this study?

Therefore, would you agree to participate in this study? 1. Yes 2. No

Signature of the interviewer: _____ Date: _____

Thanks for your participation!

**Individual Questionnaire for a study concerning
Knowledge, practice and attitude about effects of alcohol consumption in pregnancy on mothers on
follow up at SPHMMC ANC Clinic**

Section 1. Socio-demographic characteristics of the respondents

No.	Questions	Codes of possible responses	Skip to
1	What is your age in years?	Year [_____]	
2	Where is your residence?	Rural 1 Urban 2	
3	What is your religion?	Orthodox Christian 1 Protestant Christian 2 Catholic Christian 3 Islam 4 Other (specify)_____ 5	
4	What is your ethnic group?	Oromo 1 Tigre 2 Amhara 3 Gurage 4 Other (specify)_____ 5	
5	What is your current marital status?	Married 1 Never married (single) 2 Divorced 3 Widowed 4 Separated 5	
6	What is the highest level of your educational status?	Never attended any school 1 Can read and write 2 Elementary school (1-8) 3 Senior secondary school (9-12) 4 Diploma, degree or above 5 Other (specify)_____ 5	

7	What is your current main work/occupation? <i>Circle only one answer</i>	Housewife 1 Government/NGO employee 2 Trader 3 Daily labourer 4 Farmer 5 Other (specify)_____ 6	
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Section 2. Obstetric history

No.	Questions	Codes of possible responses	Skip to
8	How many pregnancies have you had, including your current pregnancy?	[_____]	
9	How many live children do you have?	[_____]	
10	How many weeks or months, are you currently pregnant?	[_____] wks. OR [_____] months	

Section 3. Attitude, Knowledge and practices about alcohol consumption during pregnancy

No.	Questions	Codes of possible responses	Skip to
ATTITUDE			
11	Alcohol during pregnancy has no effect on the baby.	Agree 1 Disagree 2 Neutral 3	
12	Alcohol during pregnancy should be stopped completely during pregnancy.	Agree 1 Disagree 2 Neutral 3	
13	If you AGREE , why should alcohol use be stopped completely?	[_____]	
14	Alcohol can be good for the pregnancy.	Agree 1 Disagree 2 Neutral 3	
15	Alcohol can be used occasionally.	Agree 1 Disagree 2 Neutral 3	

16	Alcohol can be used after you are a certain number of months pregnant.	Agree 1 Disagree 2 Neutral 3	
KNOWLEDGE			
17	Do you think problems can arise in the baby if you drink alcohol during pregnancy?	Yes 1 No 2 I don't know 3	If No, #24
18	The effects of alcohol on a baby can be serious.	Yes 1 No 2 I don't know 3	
19	Have you ever heard of Fetal Alcohol Syndrome?	Yes 1 No 2	If No, #24
19.1	Fetal alcohol syndrome happens when a women drinks alcohol during her pregnancy.	Yes 1 No 2 I don't know 3	
19.2	The problems associated with Fetal alcohol syndrome can be cured.	Yes 1 No 2 I don't know 3	
19.3	Fetal alcohol syndrome only happens in certain population groups.	Yes 1 No 2 I don't know 3	
19.4	How much alcohol during pregnancy do you think would cause Fetal alcohol syndrome, where one drink = one glass of wine/ one can of beer/ one spirit	One drink during the whole 9 months 1 One drink a month 2 One drink a week 3 One drink a day 4 Many drinks on one occasion 5 Many drinks every day 6	
Practice			
20	Before the current pregnancy, Do you drink alcohol?	Never 1 Once a year 2 Once a month 3 Once a week 4 More than once a week 5	
21	Do you drink alcohol in the current pregnancy in any amount?	Yes 1 No 2	
22	How often did you drink alcohol?	More than once a week 1 Once a week 2 At least once a month 3 Less than once a month 4	
23	When did you drink?	Before knowing the pregnancy 1 After knowing the pregnancy 2	