Alcohol consumption among pregnant women attending the ante-natal clinic of a tertiary hospital in South-South Nigeria

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Abstract

Background: As efforts to reduce maternal and childhood mortality rates continue to yield results in Nigeria, it is time to put more emphases on the health of children. Alcohol consumption is one of the few modifiable risk factors for poor pregnancy outcome. This study assessed the consumption of alcohol among pregnant women attending the antenatal clinic of the University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria.

Materials and Methods: This study was carried out using a descriptive cross-sectional study design, with data collected using an interviewer-administered questionnaire. The questionnaire was used to collect information on the knowledge of the harmful effects of alcohol on the fetus, attitudes toward alcohol use by pregnant women, and alcohol use by the respondents.

Results: A total of 221 subjects were studied. The respondents had an average age of 29.5 ± 4.6 years, were mostly married (96.83%), Christians (94.57%), and had tertiary education (73.76%). Only, 51.58% of the respondents knew of the harmful effects of alcohol on the fetus; of whom, 62.29% were told by a health professional. More than half (59.28%) of the respondents had taken alcohol during the index pregnancy, about a third (39.40%) of whom drank alcohol on a regular basis, whereas 25.79% were binge drinkers. There were no statistically significant differences in the marital ($P = 0.16$) and educational status ($P = 0.15$) of the respondents who abstained from alcohol in the index pregnancy, compared with those who drank alcohol; although, statistically significant differences were observed in the age ($P < 0.001$), parity ($P = 0.02$) and religion ($P < 0.001$) of the respondents.

Conclusion: The level of alcohol consumption among the pregnant women is high. Health education is, therefore, required to change the attitude of the public and the knowledge and behavior of the pregnant women.

Key words: Alcohol consumption during pregnancy, fetal alcohol spectrum disorder, Nigeria, Port Harcourt

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Introduction

Efforts at reducing the high childhood and maternal morbidity and mortality rates in Nigeria have concentrated on safe motherhood measures and child survival strategies.[1] These efforts have resulted in modest decrease in the mortality rates, as under-five mortality decreased from 199/1000 live births in the late 1990s to 157/1000 live births in 2008.[1] These reductions are modest only because of the very small progress made in northern Nigeria as the figures for southern Nigeria are comparable to those of the best developing countries. For example, the population-based cesarean section rate used to measure access to essential obstetric care[2] was as high as 8.6% in the South East, comparable with the international benchmark of 5-15%, while it was a mere 0.5% in the

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North West, resulting in a significant decrease of the national average to 1.7%.[3]

With the progress made in southern Nigeria, it is time to also consider the less common and covert causes of maternal morbidity and mortality, and put more emphases on the quality of health of the children, as Nigeria strives to join the club of the 20 most developed economy of the world. Alcohol consumption is one of the few modifiable risk factors for poor pregnancy outcome.[4] It is known to affect not only the health of the baby, but can also cause miscarriage, preterm birth and low birth weight.[5] Fetal alcohol syndrome is caused by alcohol consumption during pregnancy, but only forms a small proportion of fetal alcohol spectrum disorder (FASD), an umbrella term for the range of diagnoses, which may occur in a fetus who has been exposed to alcohol during pregnancy. The other diagnoses include the alcohol-related neuro-development disorder and alcohol-related birth defects, such as cleft palate.[6]

Persons with FASD often require medical treatment for their physical defects and mental disorders, special education for their cognitive and behavioral disorders, correctional (justice) services for the criminal behaviors that they may have, and social and family supports for their ill-health.[7] The care of persons with FASD therefore, requires the use of resources that spread beyond the health care system, and constitute a drain on the economy. It is estimated that FASD cost the Canadian economy up to $6.2 billion every year.[8]

Alcohol consumption is widespread in Southern Nigeria where it is used in social and religious occasions. A study in a community in Bayelsa State, South-South Nigeria found that alcohol is regularly consumed by more than 90% of the adult population,[9] and used as an aphrodisiac, to treat cold, and for oral hygiene.[9,10] In spite of this, there is no concerted effort in the Nigerian health system to discourage pregnant women from drinking alcohol, and protect the unborn child. This study assessed alcohol consumption and knowledge of the harmful effect of alcohol use among pregnant women attending the ante-natal clinic of the University of Port Harcourt Teaching Hospital, Port Harcourt. It is hoped that the findings of this study would give an insight into the situation in a representative population, and help identify the need for corrective actions.

Materials and Methods

This study was carried out in the University of Port Harcourt Teaching Hospital, one of the two Tertiary Health Care Institutions in Port Harcourt, the capital of Rivers State. Although located in Port Harcourt, the hospital draws patients from the neighboring States of the Niger delta region; a catchment population that can be conservatively put at 10 million people. The hospital is a 657 bed multi-specialist teaching hospital that offers not only tertiary health care services, but also secondary and primary health care, due to the near collapse of the other facilities in the State and region. It's Obstetrics and Gynecology Department runs an ante-natal clinic that sees more than 100 patients each week day, mainly patients with cyesis as the main indication for booking.

A cross-sectional study design was used, and the minimum sample size for the study was calculated using the formula for studying proportions in populations of more than 10,000 persons.[10] The degree of accuracy was set at 0.05, while the estimated prevalence of alcohol consumption in the study population was put at 90.99%.[9] The minimum required sample size for the study was thus determined to be 126, but made up to 245 to take care of nonresponses and design effect. The subjects were then systematically selected from every other patient that presented at the ante-natal clinic, throughout the study week, starting with a randomly selected patient.

Data were collected by four final year medical students in October 2011, using a semi-structured, interviewer-administered questionnaire. The questionnaire had four sections; the first section obtained information on the sociodemographic characteristics of the respondents; the second section assessed the knowledge of the harmful effects of alcohol consumption during pregnancy; the third section assessed attitudes toward alcohol consumption by pregnant women; while the fourth section documented the use of alcohol by the respondents.

Before the administration of the questionnaire, the respondents were reassured of the confidentiality of their responses, and clarification was made of beverages that contain alcohol, and what constitutes a standard drink. A standard drink was defined as half bottle of beer (330 ml of 5% ethanol), two and half glasses of fresh palm wine (500 ml of 3% ethanol), and one shot of the local gin (ogogoro) (40 ml of 40% ethanol); all containing approximately 13 g of ethanol. Alcohol use was defined as intake of any alcoholic beverage in the course of the index pregnancy, while binge drinking was defined as drinking of four or more standard units of alcohol, in a single occasion, in the course of the index pregnancy. The alcohol taken as part of native herbal preparation was considered as alcohol use.

Data were cleaned and entered into an EPI-INFO database, while analysis and presentation of results was performed with EPI-INFO statistical software version 2002, Microsoft Word, and manually. Summary measures were calculated for each outcome of interest; and the differences in the proportions of respondents that abstained from alcohol and those that took alcohol were tested using the Chi-Square test, with the appropriate continuity corrections. For all statistical tests, $P \leq 0.05$ was considered to be statistically significant.

The approval to undertake the study was sought and obtained from the relevant departments of the University of Port Harcourt Teaching Hospital, Port Harcourt; while informed consent was sought and obtained from all the study participants.

Results

A total of 245 questionnaires were administered, but only 221 were sufficiently completed for analysis. The sociodemographic characteristics of the respondents are presented in Table 1. The respondents had an average age of 29.5 ± 4.6 years; were mostly married (96.83%), Christians (94.57%), and had tertiary education (73.76%).

Only, 114 (51.58%) of the respondents knew of the harmful effects of alcohol on the fetus; of whom 71 (62.29%) were told by a health professional, nine (7.89%) heard about it through the mass media, 21 (18.42%) read it in the internet, while 13 (11.40%) were told by their spouse or friends.

Up to 178 (80.54%) of the respondents agreed that pregnant women should not drink alcohol, in order not to harm their babies; while only 112 (50.68%) agreed that members of their communities were concerned about women drinking alcohol during pregnancy.

Table 2 presents data on alcohol consumption during the index pregnancy. More than half (131/221 = 59.28%) of the respondents had taken alcohol during the index pregnancy, of whom 49 (49/131 = 37.40%) drank alcohol on a regular basis, while 82 (82/131 = 62.60%) took alcohol occasionally. More than two-third (57/82 = 69.51%) of the women who took alcohol occasionally were binge drinkers. The regular drinkers of alcohol took an average of 6.5 ± 4.69 units of alcohol every week, with five (5/49 = 10.20%) of them taking more than 14 units of alcohol in a week.

Table 3 relates the alcohol consumption status of the respondents to their socio-demographic characteristics.

Table 1: The socio-demographic characteristics of respondents

Variable	Number (*N*=221)	Percentage
Age (years)		
15-19	2	0.90
20-24	25	11.31
25-29	83	37.56
30-34	89	40.27
35-39	15	6.79
40 and above	7	3.17
Marital status		
Single	7	3.17
Married	214	96.83
Educational status of respondents		
No formal education	3	1.36
Primary	11	4.98
Secondary	44	19.91
Tertiary	163	73.76
Parity		
0-1	53	23.98
2-4	141	63.80
≥5	27	12.22
Religion		
Christians	209	94.57
Catholics*	51	23.08
Protestants*	33	14.93
Pentecostals*	117	52.94
Seventh day adventists etc.,*	8	8.62
Muslims	5	2.26
Others (including traditionalists and Eckist)	7	3.17

*Sub class of Christians

Table 2: Alcohol consumption in index pregnancy

Variable	Number (*N*=221)	Percentage
Abstainers	90	40.72
Alcohol drinkers	131	59.28
Occasional drinkers*	82	62.60
Regular drinker*	49	37.40

*Sub class of alcohol drinkers

Table 3: The socio-demographic characteristics of respondents according to their alcohol consumption status

Variable	Alcohol abstainers (%) (*N*=90)	Alcohol drinkers (%) (*N*=131)	*P* value
Age (years)			
24 and below	1 (1.11)	26 (19.85)	<0.001
25-29	31 (34.44)	52 (39.69)	
30-34	44 (48.89)	45 (34.35)	
35-39	9 (10.00)	6 (4.58)	
40 and above	5 (5.56)	2 (1.53)	
Marital status			
Single	1 (1.11)	6 (4.58)	0.16
Married	89 (98.89)	125 (95.42)	
Educational status of respondents			
Primary and below	2 (2.22)	12 (9.16)	0.15
Secondary	19 (21.11)	25 (19.08)	
Tertiary	69 (76.67)	94 (71.76)	
Parity			
0-1	17 (18.89)	36 (27.48)	0.02
2-4	67 (74.44)	74 (56.49)	
≥5	6 (6.67)	21 (16.03)	
Religion			
Catholics	25 (27.78)	26 (19.45)	<0.001
Protestants	18 (20.00)	15 (11.45)	
Pentecostals	33 (36.67)	84 (64.12)	
Seventh day adventists etc.,	8 (8.89)	0 (0.00)	
Muslims	5 (5.56)	0 (0.00)	
Others (including traditionalists and Eckist)	1 (1.11)	6 (4.58)	

There were no statistically significant differences in the marital ($P = 0.16$) and educational status ($P = 0.15$) of the respondents that abstained from alcohol in the index pregnancy, compared with those who drank alcohol; although, statistically significant differences were observed in the age ($P < 0.001$), parity ($P = 0.02$), and religion ($P < 0.001$) of the respondents. More (59.54%) of respondents who drank alcohol in the index pregnancy were below the age of 30 years, compared to 35.56% that abstained; 18.89% of the respondents that abstained were nulliparous, compared to the 27.48% that drank alcohol; while all the Muslim respondents and Christians of the 7th Day Adventist abstained from alcohol in the index pregnancy.

Discussion

This study found that 59.29% of the respondents had taken alcohol during the index pregnancy. This is much higher than the proportion recorded in several developed countries,[8,11] but consistent with the findings in some other sub-Saharan African countries, where alcohol consumption in the general population is also high.[12,13] National surveys in the USA and Canada recorded the prevalence rate of 12.2% and 5.8%, respectively,[8,11] while prevalence of 42.8% was recorded in a wine producing region in South Africa.[13] A study in the Bosomtwe district of Ghana, with a similar study design, recorded a prevalence rate of 20.4%.[14]

This study found that 22.17% of the respondents took alcohol regularly, at a weekly average of 6.5 ± 4.69 units, with 10.20% exceeding the 14 units limit for nonpregnant women. There is no consensus on the safe limit of alcohol for pregnant women, but the quantity of alcohol taken by the respondents in this study has consistently been found to result in some of the FASDs.[5,15] Although no study has been done on the prevalence of FASDs in Nigeria, studies carried out in other countries suggest that it is likely to be high. The prevalence of alcohol use among pregnant women in Canada was 5.8%, yet it is estimated that nine in every 1000 births in Canada would have FASDs;[8] while the prevalence rate for FASDs in a wine producing region of South Africa, with lots of similarities with South-South Nigeria, was put at between 40.5 and 46.4/1000 births,[12] with the prevalence of alcohol intake among pregnant women of 42.8%.[13]

The high proportion of alcohol consumption among the pregnant women recorded in this study could be attributed to their poor knowledge of the harmful effects of alcohol on the fetus, societal tolerance of alcohol consumption by pregnant women, and social and religious functions where alcoholic beverages are freely served in unlimited quantities. Only about half of the respondents in this study knew of the harmful effects of alcohol on the fetus; similar to the 59.7% recorded in the South African study.[13] This ignorance was probably responsible for the persistent use of the alcoholic drinks during pregnancy. The poor knowledge in the general population is likely to be higher, considering that the respondents of the study were better educated than the general population of pregnant women in South-South Nigeria.[1] Although alcohol use during pregnancy has been found to be higher among more educated women in the United States, this was, however, stated to be because they have more discretionary income for the purchase of the heavily taxed alcoholic beverages.[11] This is not the situation in South-South Nigeria where the popular alcoholic beverages are sold at affordable prices, and are often served free of charge in social and religious functions.[9,10]

Contact with health professionals seems to encourage abstinence as shown by the finding that there are statistically significant differences in the age, parity and religion of the respondents who drank alcohol in the index pregnancy, compared to those that abstained. Health professionals were also the source of information for the 62.29% of the respondents that knew of the harmful effects of alcohol on the fetus, which is much higher than the 33.5% that was recorded in the Ghanaian study,[14] but falls short of the target of ensuring that every pregnant woman seen, at every point of care is provided with the right information and care needed to prevent FASD, as prescribed by the alcohol use in pregnancy consensus clinical guidelines of the Society of Obstetricians and Gynecologists of Canada.[16] This would require specifically asking pregnant women about alcohol use, guided by the use of validated questionnaires such as AUDIT-C that could be administered in <5 min.[17] The few questions that make up these questionnaires can easily be made part of the routine information collected during registration for ante-natal care. Pregnant women identified to be taking harmful levels of alcohol can be offered a brief intervention regime that has been found to be effective in preventing adverse outcome in the fetus.[18] Brief intervention uses 10-15 min sessions of counseling that can be delivered by a nonspecialist, in the treatment of alcohol abuse.[19]

Societal tolerance and unlimited access to the free alcoholic beverages offered during social and religious functions are the other important reasons for the high proportion of alcohol consumption recorded among the respondents of this study. Only about half of the members of the communities from where the respondents came from would be concerned about pregnant women drinking alcohol. This tacit approval is consistent with the findings in other Nigerian studies. Among the Ogu people of Badagry, Lagos State, it was reported that men and women of various ages, including pregnant women in their various trimesters, openly drank the locally made gin.[20] This tolerance could explain why binge drinking was even recorded amongst respondents that took alcohol occasionally, perhaps

facilitated by the free and liberal alcoholic beverages that are often served in social and religious occasions, such as burial ceremonies and wedding receptions.[9,10] Countries that have successfully reduced the use of alcohol by pregnant women achieved this by stigmatizing alcohol use by pregnant women;[21] efforts should therefore be made to replicate this in Nigeria, through a deliberate public education campaign. The public education campaign should also encourage women to abstain from alcohol when they wish to become pregnant, to ensure that the fetus is not harmed before the pregnancy is confirmed. This health education campaign is likely to be effective in Nigeria because Nigerian women are likely to stop drinking alcohol if they are encouraged by their spouse and other significant others.[20]

Conclusion

The level of alcohol consumption is high in the study population, perhaps fuelled by ignorance, societal tolerance and unlimited access to free alcoholic beverages. Behavioral change communication is required to change the attitude of the public. There is also need to offer pregnant women and those planning a pregnancy information and care at every point of contact with the health system, to reduce the possibility of FASD.

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