

Alcohol intake in lactating women assisted in a University Hospital

Ingestão de bebidas alcoólicas em lactantes atendidas em Hospital Universitário

Ingestión de bebidas alcohólicas en lactantes atendidas en un Hospital Universitario

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ABSTRACT

Objective: To determine the prevalence of alcohol intake and the degree of alcohol-related risk among nursing mothers attended at the Child Care Service of Hospital das Clínicas of Universidade Federal de Pernambuco, Brazil.

Methods: A cross-sectional study was carried out with 157 nursing mothers enrolled in the Child Care Program of the university hospital. A questionnaire was administered addressing demographic and socioeconomic variables, type and duration of breastfeeding, smoking habits and consumption of foods considered as appetizers. The Alcohol Use Disorders Identification Test (AUDIT C) was applied for assessing alcohol consumption in the previous 12 months. Pearson's chi-square test and Fisher's exact test were used for statistical analysis.

Results: Twelve percent of the nursing mothers reported consuming alcoholic beverages, 100% of whom were classified as being at low risk for alcohol use disorders. The frequency of nursing mothers who consumed appetizers during alcohol consumption was 100%, the most common of which was cheese – 18 (95%).

Conclusions: The prevalence of alcohol intake was low in the nursing mothers analyzed. The users exhibited a low risk for alcohol disorders and a high frequency of the consumption of appetizers during alcohol consumption.

Key-words: alcoholic beverages; breast feeding; maternal nutrition; infant nutrition.

RESUMO

Objetivos: Verificar a frequência do consumo de bebidas alcoólicas e o grau de risco do hábito de etilismo em lactantes atendidas no Serviço de Puericultura do Hospital das Clínicas da Universidade Federal de Pernambuco.

Métodos: Estudo transversal com 157 mães lactantes matriculadas no Programa de Puericultura do hospital. Utilizou-se questionário com informações sobre variáveis demográficas, socioeconômicas, tipo e tempo de aleitamento materno, hábito de tabagismo e consumo de alimentos considerados petiscos. A avaliação do consumo de álcool nos últimos 12 meses foi realizada pelo questionário “teste de identificação de distúrbios causados pelo uso de álcool” (AUDIT C – *Alcohol Use Disorders Identification Test*). Para análise estatística, aplicaram-se os testes do qui-quadrado de Pearson e exato de Fisher.

Resultados: Verificou-se consumo de bebidas alcoólicas em 12% das lactantes; dentre estas, 100% apresentaram baixo risco para transtornos causados pelo uso do álcool. A frequência de lactantes que consumiam petiscos durante a ingestão alcoólica foi 100%, sendo os queijos os mais consumidos – 18 (95%).

Conclusões: A prevalência de consumo de álcool foi baixa nas lactantes estudadas. As usuárias exibiram um consumo considerado de baixo risco e uma frequência elevada de consumo de petiscos durante a ingestão alcoólica.

Palavras-chave: bebidas alcoólicas; aleitamento materno; nutrição materna; nutrição do lactente.

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RESUMEN

Objetivos: Verificar la frecuencia del consumo de bebidas alcohólicas y el grado de riesgo del hábito de alcoholismo en lactantes atendidas en el Servicio de Cuidado del Niño del Hospital de Clínicas de la Universidad Federal de Pernambuco (HC/UFPE).

Método: Estudio transversal con 157 madres lactantes matriculadas en el Programa de Cuidado del Niño del HC. Se utilizó cuestionario con informaciones sobre variables demográficas, socioeconómicas, tipo y tiempo de lactancia materna, hábito de tabaquismo y consumo de alimentos considerados bocados. La evaluación del consumo de alcohol en los últimos 12 meses fue realizada por el cuestionario AUDIT C (*alcohol use disorders identification test*). Para el análisis estadístico se utilizaron las pruebas de Chi-cuadrado de Pearson y Exacto de Fisher.

Resultados: El consumo de bebidas alcohólicas fue verificado en 12% de las lactantes, siendo en 100% de ellas clasificado de bajo riesgo para trastornos causados por el uso del alcohol. La frecuencia de lactantes que consumían bocados durante la ingestión alcohólica fue del 100%, siendo los quesos los más consumidos 18 (94,7%).

Conclusiones: La prevalencia de consumo de alcohol fue baja en las lactantes estudiadas. Las usuarias mostraron un consumo considerado de bajo riesgo y una frecuencia elevada de consumo de bocados durante la ingestión alcohólica.

Palabras clave: bebidas alcohólicas; lactancia materna; nutrición materna; nutrición infantil.

Introduction

Breastfeeding is one of the oldest physiological functions among mammals and, increasingly, breast milk is considered of vital importance for the newborn⁽¹⁾. In Brazil, the latest statistics regarding breastfeeding are from the National Health and Nutrition Program (Programa Nacional de Saúde e Nutrição – PNSN)⁽²⁾ and indicate that 99.5% of newborns (NB) suckle soon after birth and that the duration of exclusive breastfeeding has risen from 1 month to 2.2 months. Breastfeeding is the best practice to be adopted for the benefit of the infant in the first 6 months of life, whether from the point of view of nutrition, or of emotional aspects and aspects relating to the protection against diseases, besides social or economic conditions.

By offering her milk, the woman transfers many nutrients to her child, targeting the growth and welfare of the

infant. However, occasionally, breast milk can also serve as the vehicle of harmful substances, such as in cases of some infectious diseases, in which the use of medications are necessary for the treatment, as well as in the consumption of drugs such as alcohol, which, although not included in the list of substances that contraindicate breastfeeding, can cause damage to both the child and the mother^(3,4).

Several authors have demonstrated in studies with animals that alcohol passes through breast milk, changing the production, volume, flavor, composition, and milk excretion, causing deleterious effects in the newborn⁽⁵⁻⁷⁾. Alcohol consumption by nursing mothers alters the sleep-wake cycles of the NB. Studies have shown that the child consumes approximately 20% less milk during the hours immediately after ingestion of an acute dose of alcohol by the mother^(8,9). This change in the consumption of breast milk (BM) is partly due to the decrease in milk production by the mother and by the modification of its odor after alcohol ingestion. Thus, the infant, despite sucking more vigorously, ingests less milk by sucking time, which is not perceived by mothers^(10,5). In addition, alcohol causes effects on the baby's behavior, interferes with the immune system and the central nervous system and can compromise growth and increase neonatal mortality in the long term⁽¹¹⁾.

The amount of ethanol transmitted to human milk is a tiny fraction of what was ingested by the mother (less than 2% of the maternal dose). Therefore, the occasional exposure is often considered insignificant and many organs, such as the Committee on Drugs of the American Academy of Pediatrics, classify ethanol as a “drug normally allowed during breastfeeding”⁽¹²⁾. In countries like Australia, alcohol is an accepted part of the culture, so they are widely consumed. Australian women habitually consume alcohol, which comprises 6% of daily calories of their diet, and 35% consume alcohol on a weekly basis, most of them while breastfeeding⁽¹³⁾.

Excessive alcohol consumption is considered a global problem. More recent data from the World Health Organization show that Brazilians consume 18.5L of pure alcohol per year. In the Americas, this value is only lower than the values for Equator (29.9L), Mexico (27.2L) and Nicaragua (20.5L). The Global Report on Alcohol Use and Health of the WHO, 2011, with data up to the year 2005, showed that, among women, the consumption is of 10.6L per year. In Brazil, 54% of people drink beer, 40% distilled, 5% wine and 1% other types of beverages⁽¹⁴⁾.

Although in recent years there has been an increase in educational campaigns warning against the dangers of

alcohol consumption, a considerable portion of the female population keeps drinking while breastfeeding, as there is a cultural habit of recommending some alcoholic beverages as sources of B vitamins and capable of causing relaxation of mother and son^(5,4).

Due to the limited findings in the literature and the occurrence of high alcohol consumption in women of childbearing age in the Western world, and knowing that ethanol is a frequently ingested drug in our region, the objective of this study was to observe the prevalence of this habit and the riskiness of the habit of drinking among nursing mothers at the Pediatric Outpatient Clinic at Hospital das Clínicas da Universidade Federal de Pernambuco (HC/UFPE) and verify the association of alcohol consumption with the socioeconomic and demographic variables studied, as well as with habits while drinking alcohol.

Method

This was a cross-sectional study that included all nursing mothers who were attending the outpatient clinic from June 2011 to February 2012. The study assessed 157 lactating mothers who were recruited consecutively on days of routine or random medical appointments. For composition of the sample, we considered the following inclusion criteria: lactating women of any age and race, in any breastfeeding period. We excluded those mentally incapable of answering survey questions. The survey was conducted after approval by the Research Ethics Committee of Universidade Federal de Pernambuco, protocol n. SISNEP FR 410779, in compliance with the resolution of the National Health Council n. 196/96. Participation in the study was voluntary after the signature of the Term of Consent.

To characterize the socioeconomic and demographic profile, we designed a form with closed questions on age, ethnicity, marital status, level of education, parity, occupation, monthly income, and origin (city of Recife, metropolitan area, countryside, or other states), besides the type and duration of breastfeeding and interval between feedings. Each participant that answered positively about alcohol intake, even if only rarely, was included in the group who used alcoholic beverages. To assess the risk of this intake the AUDIT C was applied (alcohol use disorders identification test), validated internationally⁽¹⁵⁾, which classifies the use of alcohol in: low risk or abstainers=0–7 points; risk consumption=8–15 points; abuse or high risk consumption= 16–19 points; probable addiction=30 or more points⁽¹⁶⁾. During the

interview, there were questions about the habit of tobacco use and consumption of snack food. To check the consumption of food (snacks), lactating women were asked if they had any food during alcohol consumption, and the possible answers were yes and no. In the presence of a positive response, the

Table 1 - Demographic and socioeconomic variables in lactating women treated at the Pediatric Outpatient Clinic at Hospital das Clínicas da Universidade Federal de Pernambuco, Recife/Brazil, 2011–2012

Variable	n	%
Age range		
Up to 19 years	32	20.4
≥20 years	125	79.6
Ethnicity		
White	40	25.5
Not white	117	74.5
Marital status		
Single/Separated/Divorced/Widowed	83	52.9
Married/Stable Union	74	47.1
Education		
Primary School	34	21.7
High School	106	67.5
Higher Education	17	10.8
Occupation		
Yes	33	21.0
No	124	79.0
Family Income		
Up to 1 salary	61	38.9
2 wages	69	43.9
More than 2	27	17.2
Origin		
Recife	133	84.7

Table 2 - Distribution of lactating women according to duration of breastfeeding, type of breastfeeding and interval between feedings at the Pediatric Outpatient Clinic at Hospital das Clínicas da Universidade Federal de Pernambuco, Recife/Brazil, 2011–2012

Variable	n	%
Duration of breastfeeding		
<3 months	130	82.8
≥3 months	27	17.2
Type of breastfeeding		
Exclusive breastfeeding	115	73.2
Supplemented breastfeeding	42	26.8
Interval between feedings		
30 to 40 minutes	80	51.0
1 to 2 hours	52	33.1
>2 to 3 hours	25	15.9
Total	157	100.0

Table 3 - Association between the habit of drinking and the variables associated to breastfeeding in lactating women treated at the Outpatient Pediatric Clinic at Hospital das Clínicas da Universidade Federal de Pernambuco, Recife/Brazil, 2011–2012

Variable	Habit of drinking Alcohol				Total Group		p
	Yes		No		n	%	
	n	%	n	%			
Duration of breastfeeding (months)							
Less than 3	14	73.7	116	84.1	130	82.8	0.327
≥3 to 6	5	26.3	22	15.9	27	17.2	
Type of breastfeeding							
Exclusive breastfeeding	11	57.9	104	75.4	115	73.2	0.107
Supplemented breastfeeding	8	42.1	34	24.6	42	26.8	
Interval between feedings (hours)							
Up to 2	16	84.2	116	84.1	132	84.1	1.000
≥2	3	15.8	22	15.9	25	15.9	
Total	19	100.0	138	100.0	157	100.0	

respondent had to choose between snacks consumed in isolation or associated with something, according to the following list: cheese, cold cuts (salami, ham), dried meats, sausages, fried pastries, quail egg, seafood, peanuts and olives.

The variables were presented as relative frequencies, and Fisher's exact test and Pearson's chi-square test were used to assess the relationship between alcohol consumption and other variables, considering the significance level of 5%.

Results

The sample comprised 157 lactating women, with mean age of 22.7 ± 3.6 years (18 to 37 years). Demographic and socioeconomic characteristics are demonstrated in Table 1.

Regarding breastfeeding, 130 (82.8%) mothers were breastfeeding for a shorter period than 3 months, 22 (14%) from 3 to 6 months and five (3.2%) for longer than 6 months. Exclusive breastfeeding was observed in 73.2% of women; with intervals between feedings of 30–40 min (51%), 1–2 hours (33.1%) or greater than 2 to 3 hours (15.9%) (Table 2).

Regarding alcohol consumption, 19 (12.1%) mothers responded affirmatively and 100% of the group consumed foods during alcohol ingestion; beer, vodka, and wine were the most consumed drinks (100, 36.8 and 21.1%, respectively). By the AUDIT C test the whole group was rated as low risk/abstainers for disorders caused by alcohol.

For food intake during alcohol consumption, it was found that 18 (94.7%) mothers consumed cheese; 17 (89.5%) legume soup, 17 (89.5%) peanut; 16 (84.2%) eggs; 15 (78.9%) olives; 14 (73.7%) cold cuts, 13 (68.4%)

seafood; 12 (63.2%) dried meat; 12 (63.2%) sausages and nine (47.4%), fried appetizers.

The associations made between alcohol consumption with the demographic and socioeconomic variables related to breastfeeding are shown in Tables 3 and 4, respectively. No statistically significant association was observed.

Discussion

Although alcohol is recognized as harmful to human health, its use is still present in the daily life of the Brazilian population, and a recent study confirmed excessive consumption of alcohol in 18% of women⁽¹⁷⁾. The use of alcohol is common during pregnancy or lactation, despite national and international guidelines recommending that it should not be consumed during pre-natal and post-natal care^(17,18).

The habit of consuming alcohol occurs in nursing mothers, with frequencies ranging from 36 to 80%⁽⁴⁾. In the present study a lower frequency of alcohol consumption was found (12.1%), similar to that reported by Del Ciampo *et al*⁽⁴⁾ in a study with 504 women from São Paulo, whose prevalence was 11.1%. Therefore, the published studies show considerable differences in the frequency of alcohol use in lactating women and some reports found higher values. In this sample, all women who consumed alcohol were classified as being at low risk for disorders caused by alcohol, which was similar to what was reported by Del Ciampo *et al*, in 2009⁽⁴⁾. Admittedly, alcohol consumption is not recommended during breastfeeding. The Ministry of Health warns for its sensible use, once the ingestion of doses ≥ 0.3 g/kg of body weight may reduce milk production, modify the odor

Table 4 - Association between the habit of drinking and demographic and socioeconomic variables in lactating women treated at the Outpatient Pediatric Clinic at Hospital das Clínicas da Universidade Federal de Pernambuco, Recife/Brazil, 2011–2012

Variable	Habit of drinking alcohol				Total		p
	Yes		No		n	%	
	n	%	n	%			
Age range							
<20	4	12.5	28	87.5	32	100.0	0.303
20 to 24	13	15.1	73	84.9	86	100.0	
≥25	2	5.1	37	94.9	39	100.0	
Ethnicity							
White	3	7.5	37	92.5	40	100.0	0.405
Not white	16	13.7	101	86.3	117	100.0	
Marital Status							
Single/Separated/Divorced/Widowed	8	9.6	75	90.4	83	100.0	0.316
Married/Stable Union	11	14.9	63	85.1	74	100.0	
Education							
Elementary School	1	2.9	33	97.1	34	100.0	0.145
High School	16	15.1	90	84.9	106	100.0	
Higher education	2	11.8	15	88.2	17	100.0	
Occupation							
Yes	4	12.1	29	87.9	33	100.0	1.000
No	15	12.1	109	87.9	124	100.0	
Income (minimum wages)							
Up to 1	8	13.1	53	86.9	61	100.0	0.713
2	9	13.0	60	87.0	69	100.0	
More than 2	2	7.4	25	92.6	27	100.0	
Origin							
Recife	16	12.0	117	88.0	133	100.0	0.874
Metropolitan Area of Recife	2	15.4	11	84.6	13	100.0	
Total	19	12.1	138	87.9	157	100.0	

and flavor of breast milk, leading to the rejection of the milk by the infant⁽¹⁹⁾.

In Mexico, nursing mothers are encouraged to drink about 2 liters a day of *pulque*, a fermented beverage that has a small percentage of alcohol⁽²⁰⁾. In Germany, beer is considered the “magic elixir”, while the Indochinese community in California prefers medicinal herbs soaked in wine⁽²¹⁾. In Brazil, popular culture also recognizes the intake of darker and “fortified” beers. Because they are not filtered, they contain more protein and hop^(22,23). In many cultures, there is still the belief that alcohol would be galactogenic, i.e., that the consumption of small amounts of alcohol immediately before breastfeeding would facilitate milk production in the mammary glands. Right after exposure to alcohol, prolactin levels increase, while oxytocin levels decrease, both during and after the stimulation of the breast. However, alcohol ingestion is generally

contraindicated during lactation, because the supposed benefits from this practice (such as increased milk production and a calming effect on babies) are not effective⁽²⁴⁾. It is worth noting that, a recent research⁽²⁵⁾ conducted in São Paulo among lactating mothers, reported that alcohol is harmful to breastfeeding, and no reference was found to its galactogenic properties, contrary to popular myth.

Smoking, in turn, is a socially accepted habit since ancient times, being detrimental to the infant, once the child comes into contact with harmful substances from cigarettes through breast milk⁽⁴⁾. In the present sample the use of tobacco among nursing mothers who reported alcohol consumption was not observed, differently from the findings of Del Ciampo *et al*⁽⁴⁾ who found that 26.8% of mothers who consumed alcohol also smoked. Rozov *et al*⁽²⁶⁾, while studying the smoking habit in 257 pregnant mothers and their knowledge about

the effects of smoking on fetuses and infants, concluded that 61% of newborns had the risk of becoming passive smokers if attitudes and habits of the family were not modified in a short time. By relating the frequency of breastfeeding among mothers who are abstainers and those who consume alcohol, no statistical difference was found, what is in line with the findings of Del Ciampo *et al*⁽⁴⁾, probably due to the effective work performed by the health teams of Family Health Programs and the unit participating in this study, stimulating and supporting the practice of breastfeeding.

Data on the literature that relate food consumption during alcohol intake in the period of lactation are still rare. In the studied sample, there was a high frequency of consumption of snacks (protein foods and oilseeds) during alcohol intake. This was an important finding, since drinking alcohol with food reduces its absorption. Alcohol is a substance of rapid absorption and its peak amount in the blood coincides with that of breast milk, around 30 minutes to 1 hour⁽¹⁹⁾. Drinking alcohol with food can delay in up to 90 minutes the peak in breast milk, with considerable individual differences among women⁽²²⁾.

Regarding limitations, the use of a convenience sample with a consecutive selection, was a possible limitation of this study, although this is a practical approach for most clinical research projects. Thus, the findings may not be similar to those that would result from a random sample of the target population. Therefore, attributing a low prevalence to the group of lactating women could be a limitation of the

explanatory model, with questionable external validity. The cross-sectional design is appropriate to provide information on the proportion of people who consumed alcohol, with description of the study variables and their distribution patterns. The limited number of participants decreases the statistical power of the sample and may have influenced the lack of association between alcohol consumption and some variables, such as exclusive breastfeeding and education.

In summary, we did not observe a heavy use of alcohol during lactation and the use of alcohol was always accompanied by the intake of food (snacks). Therefore, consumption of alcohol did not represent a problem in the present sample. However, the use of alcoholic beverages must remain discouraged during breastfeeding and women with this habit must be oriented to consume sporadically, in small amounts, combined with food intake. The findings of this study represent an original contribution, warning to the dangers of alcohol and its possibility of transmission through breast milk. Thus, it is recommended that more public investment be made in prevention programs within prenatal and child care programs.

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