

Alcohol Consumption by Women in the Previous Year Who Were Unaware They Were Pregnant

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Abstract

Objective: To evaluate the socio-cultural factors associated with alcohol consumption by women, in the previous year, and during the gestational period (not knowing that they were pregnant).

Method: This is a cross-sectional study, conducted with 112 pregnant women using Primary Health Care services in two municipalities in São Paulo state, Brazil. Sociodemographic and obstetric information tests to identify problems associated with alcohol were used.

Results: The majority of participants were young, married, were of the Evangelical faith, had a low level of education and family income, did not work and lived in their own homes. The prevalence of alcohol use in the year before pregnancy was 57.1%, 6.8% drank in a binge pattern, of which 32.1% did not know they were pregnant.

Conclusion: Pregnant women and women of reproductive age, who are in risk groups and have a high vulnerability, should take priority for interventions related to substance use, especially alcohol.

Introduction

Alcohol is a potential risk factor to the overall burden of disease and cause of mortality, with significant losses to health (WHO, 2018). In 2016, it was estimated that globally 32.5% of people were current drinkers, of which 0.9 billion (25%) were women. In this global distribution, alcohol ranked seventh among the highest risk factors for death and disabilities – Disability Adjusted Life Years (DALYs) reaches 2.2% for female deaths, after controlling for age. The figure rises to 2.3%, for the female population aged between 15–49 years, the burden of diseases attributable to alcohol, after accounting for DALYs.

The global prevalence of alcohol use by pregnant women has been estimated at around 10%, of which an estimated 20% (0.2%) are considered to abuse alcohol (WHO, 2017). Several biopsychosocial and cultural factors impact the prevalence rates of alcohol use. It is estimated that between 30 and 50% of women of reproductive age drink alcohol. These arguments have been criticised by women's movements to scapegoat women as the reproductive age is so vast, and rarely is male fertility and alcohol use questioned. Nevertheless, the already high prevalence of alcohol consumption is increasing amongst the current global female population (Sharpe and Velasques, 2008; Goh, Verjee & Koren, 2010; WHO, 2017; Popova et al., 2017 and 2018). Women who use psychoactive substances frequently present with complex social and health needs; for example mental health problems, history of physical and/or sexual abuse, unplanned pregnancy, victims and perpetrators of violence, and higher mortality rates. Women with a history of substance use present with unique clinical needs including malnutrition, relationship problems, including domestic violence and lack of social support (Economidou, Klimi, and Vivilaki, 2012).

The use of alcohol during the gestational period is an important area to consider yet not without due consideration of these societal problems which are far from perfect. The prevalence of alcohol use during this vulnerable stage of the life cycle is varied (WHO, 2017; Popova et al., 2017, 2018). Studies on this

subject are incipient and non-conclusive due to methodological variability and the different contexts and places where they were conducted (WHO, 2017).

It is noteworthy in this population, but not exclusively, binge use alcohol (WHO, 2017; Popova et al., 2018), defined as consuming three or four drinks in a short period leading to intoxication (Lange et al., 2017). The highest percentage of binge drinking is amongst pregnant women from low-income countries (WHO, 2017; Popova et al., 2018). In Brazil, previous studies have examined alcohol use during pregnancy, prevalence ranges from 17.7% (Guimarães et al., 2018), 32.4% (Veloso and Monteiro, 2013) and 61.1% (Esper and Furtado, 2019). 50.2% of women who drank in the first trimester of pregnancy did not know they were pregnant (Esper and Furtado, 2019). It has been posited that in the first trimester the fetus' brain development is particularly more vulnerable to the effects of alcohol (Popova et al., 2017). Women drinking when they are not aware that they are pregnant represents a serious public health problem; half of the pregnancies in developed countries, and more than 80% of pregnancies in developing countries, are not planned (WHO, 2017), the structural problems inherent in supporting these women are not without significance.

In a study of 354 women of reproductive age who met selection criteria for the risk of exposure to alcohol during pregnancy, binge use was addressed in a single question; 97.7% of women reported positively, and 59% had consumed eight or more units per week (Jonsson et al., 2010). Alcohol consumption during pregnancy, in addition to harming the mother's health, passes through the placental barrier, causing a premature increase in placental permeability (Haghighi et al., 2012). The increase in placental permeability increases the risks for premature delivery and miscarriage, causing direct damage to the development of the fetus due to the repercussions of severe neurotoxic effects on cognitive and behavioural levels, potentially lasting throughout the child's life (Da Pilma Leketey et al., 2017; Esper and Furtado, 2019).

Fetal alcohol spectrum disorders (FASDs) have been recognized as an international public health problem, but can be fully prevented by abstinence from alcohol use during pregnancy. The prevalence of FASD is estimated between 2 and 5% in the United States (US) and some Western European countries (Riley, Infante, and Warren, 2011). Regardless of whether women are aware of their pregnancy, and despite evidence about the various complications, many women use alcohol during pregnancy due to the socio-political context in low-income countries (or otherwise), for example, being single, age, substance use by partner, fear and stigma of facing a pregnancy alone, low socioeconomic status, exposure to violence, not practising a religion, an unplanned pregnancy, reduction and/or little access to health services (especially prenatal consultations), alcohol use during previous pregnancies and consumption of other substances (Veloso and Monteiro, 2013; Watt et al., 2014; McCormack et al., 2017; Esper and Furtado, 2019). It is then posited that perhaps alcohol in these predicaments is a choice between the devil and the deep blue sea.

Late detection of pregnancy is another factor among women who drink alcohol; resulting in some women not seeking prenatal health care, even as late as the third gestational trimester. Evidence also shows that,

in addition to social and emotional factors, half of the women can inadvertently put their health, and that of the fetus, at risk from exposure to alcohol due to unawareness about its deleterious effects (Jonsson et al., 2010; Morton et al., 2014).

Given the magnitude of the problem, both reproductive health and problems related to substance use have been considered priorities for global public health planning, highlighted in the 2030 Agenda of the United Nations (UN, 2015), since chronic diseases require changes in lifestyle and management of health resources. Therefore new research is needed to expand the existing literature, deepening the understanding of the profile of pregnant women who drink alcohol, who have limited access to support, and the factors related to this phenomenon.

Therefore, this study aimed to evaluate alcohol consumption in women in the previous year and during the gestational period (unaware that they were pregnant) and the associated factors.

Methods

Study design, recruitment and data collection

The study was an observational and cross-sectional study, conducted between December 2017 and January 2018. A total of 118 women were recruited, and because of the age criteria, the final sample was 112.

The inclusion criteria were: being pregnant and being 18 years old or older. The study was conducted in Primary Health Care units, two Basic Health Units, two Family Health Strategies and one Women's Health Reference Center in two municipalities in São Paulo state, Brazil. These facilities were chosen because they are focal points for women's health care and were attended by a large number of pregnant women.

The Ethics Committee at Federal University of São Carlos (UFSCar) (protocol number 2.323.617) approved the study. The study followed the Brazilian ethical assumptions recommended by Resolution 466/2012 of the National Council of Ethics in Research with human beings. All participants expressed their consent by signing the Free and Informed Consent Form.

The recruitment of participants was carried out by the principal researcher in each of the services. Pregnant women attending prenatal consultations were invited individually to participate in the research and the data was collected by an interview in a reserved and comfortable room.

Questionnaires

The data collection instrument was composed of sociodemographic information (age of group, marital status, schooling (years), religion, work, housing, family income, and obstetric information (presence of disease, planned pregnancy, prenatal care, complications during pregnancy, abortions, number of pregnancies, and gestational period).

Tolerance, Annoyed, Cut down, Eye-opener (T-ACE) is a screening instrument composed of four items, validated for Brazil, and that assesses risk levels of alcohol use during pregnancy (defined as the use of two or more doses of alcohol per day). The instrument measures the level of tolerance, aversion to criticism about alcohol consumption behaviour, changes in risk behaviour by women and alcohol consumption in the morning (Fabbri, Furtado, and Laprega, 2007).

Alcohol Use Disorders Identification Test (AUDIT) is a screening instrument used to identify risky or problematic patterns of alcohol consumption in the previous 12 months, through the sum score of the items. Classification discriminates against low-risk consumption or no use (≤ 7 points) and risky or problematic use (≥ 8 points) (WHO, 2019). The AUDIT was used to obtain information about alcohol use in the last year (an independent variable in this study), as well as the frequency of binge drinking. However, participants were asked directly about this consumption in the previous year (yes/no) (independent variables of the present study) (Lange et al., 2017). Additionally, participants were directly asked if they had drunk alcohol without knowing that they were pregnant (yes/no).

Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) is a standard instrument composed of eight items, which assess the consumption of substances in life and the last three months, frequency, complications, conflict with family and friends due to consumption, amongst other items. In the present study, only the issues involving tobacco and its derivations were used. ASSIST is a validated instrument for Brazil, with good levels of reliability (Henrique et al., 2004).

Data analysis

A database was prepared with support from SPSS, version 20 (IBM Corp.). The analyses included descriptive statistics and comparison between variables using the Chi-square test to alcohol consumption in all measures, compared with sociodemographics, obstetric information and alcohol/tobacco use. A significance level of 5% was considered.

Results

The sample consisted of 112 pregnant women, who were 18–29 years old and were predominantly married, had a low level of education (< 8 years), practised the Evangelical faith, unemployed, resided in their own homes and had a low family income (≤ 2 minimum wages) (Table 1).

Similarities in profile were noted amongst women in the three different geographic groups, concerning alcohol use in the previous year, the pattern of binge drinking and drinking whilst unaware of the pregnancy. Women without a partner differed with alcohol consumption, with statistically significant associations ($p \leq 0.05$).

Of the total sample, 64 (57.1%) women consumed alcohol in the last year, 30 (26.8%) binge drank and 36 (32.1%) had drunk without knowing they were pregnant.

Most, 65.2%, of the women were in the second trimester of pregnancy. Regarding obstetric characteristics, the predominance of participants had no other diseases (84.8%), it was an unplanned pregnancy (57.1%), prenatal consultations had begun (88.4%), there were no recorded problems during the gestational period (63.4%), had not had a prior abortion (84.8%) and were nulliparous (36.6%). Alcohol consumption differentiated amongst women who had up to two previous pregnancies and were in the second trimester of pregnancy, with statistically significant values ($p \leq 0.05$) (Table 2).

More than half of pregnant women had used alcohol in the previous year (54.7%), binge drank (76.7%) and had drunk alcohol every month in the last year (33.0%). One in ten women was classified as positive for alcohol consumption (T-ACE).

Table 3 shows the comparison between variables related to alcohol, tobacco and binge drinking with the different patterns of consumption amongst the participants. Among women who have used alcohol in the last year, half drank or smoked whilst unaware that they were pregnant. Among those who had binge drank alcohol in the last year, 76.7% had drunk alcohol whilst unaware of the pregnancy.

Although 40% did not drink during pregnancy, another 33.3% were positively classified as alcohol use (T-ACE). Among women who consumed alcohol without knowing they were pregnant, 33% drank weekly, only 25% identified positively for use (T-ACE).

Discussion

This is a rare study that assesses alcohol use and associated factors (such as obstetric, demographic characteristics and tobacco use) in women before and during pregnancy, whilst unaware of their pregnancy. The prevalence of alcohol consumption among pregnant women in the present study was 57.1%, with 26.8% binge drinking, in the previous year. Amongst the participants, one third did not know they were pregnant. These consumption indices are high, considering the available evidence indicating variability in consumption indices and methodological issues. Nevertheless, alcohol use in pregnancy is a serious global public health problem, which has gained increasing attention due to the negative outcomes in maternal and child health (WHO, 2017, 2018; Goh, Verjee and Koren, 2010). The authors acknowledge that studies of father's drinking alcohol use are not measured in this study, and there is emerging evidence to suggest this may be a further area of study.

Long-standing effects on the fetus, lactating and women's health have been recognized (Riley, Infante and Warren, 2011; Haghghi, Poodeh et al., 2012; Popova et al., 2017). Alcohol abuse before pregnancy is associated with tobacco use and is a strong predictor for alcohol use during pregnancy; this association explains the difficulty of women in being abstinent, even when they are concerned about the potential risks to the fetus (Popova et al., 2017).

Regarding the factors associated with alcohol use amongst the pregnant participants of this study revealed a group of young women, with a low level of education and family income, who were in the second trimester of pregnancy. This profile reflects the social characteristics and context from which the

sample was recruited – Primary Health Care, which serves many Brazilian women supported by women's health programs. It is well known that the risk factors for alcohol use during pregnancy are often intertwined with socioeconomic and cultural conditions, poverty, lack of housing, substance use by the partner, use of other substances before conception and discrimination, which alone stands out as one of the greatest predictors among all these factors (Sharpe and Velasques, 2008; Goh, Verjee & Koren, 2010; WHO, 2017). Due to social, cultural and historical determinants, some women persevere with the same pattern of consumption during the pregnancy period (Research New Zealand, 2014). A survey study showed that almost one in five women binge drank before pregnancy recognition, 62% drank at abusive levels in the three months before conception and 50% maintained consumption during the pregnancy period (Muggli et al., 2016).

A study highlighted the prevalence of alcohol consumption by women before and during pregnancy is variable, since it is influenced by several factors that reflect socio-cultural differences regarding drinking; on the other hand, in the gestational period, there is a tendency to reduce or cease consumption (Callinan and Ferris, 2014; Research New Zealand, 2014). Nevertheless, a significant proportion of women who consumed alcohol before pregnancy tend to continue consuming in the gestational period (Research New Zealand, 2014).

Another interesting result is the prevalence of alcohol use found among women is well above the rates presented in the literature (Popova et al., 2017 and 2018; WHO, 2017), when assessing the global prevalence (10%) and in countries in the European region (25%). These findings reinforce the results of other Brazilian studies that showed a prevalence of alcohol use during pregnancy (17.7–32.4%) all of which used different methods of data collection (Velooso and Monteiro, 2013; Guimarães et al., 2018; Esper and Furtado, 2019).

The results of Centres for Disease Control and Prevention (CDC) differ from the findings of our study regarding employment and education. The prevalence of alcohol use and binge drinking in the last 30 days among women aged 18 to 44 years in 51.5% of non-pregnant women and 7.6% among pregnant women who reported alcohol use. Among pregnant women, the highest prevalence rates of alcohol use were observed among women aged 35 to 44 years (14.3%), white (8.3%), graduated (10.0%) and employed (9.6%) (CDC, 2012).

A meta-analysis study estimated that globally one in 67 women who consumed alcohol during pregnancy has a potential risk of generating a child with FASD, which corresponds to approximately 119,000 children per year (Popova et al., 2017). Regarding obstetric conditions, in our study we found a homogeneous group of women who reported good health and a healthy pregnancy without complications; they were having their first pregnancy and were having prenatal care. Despite this, 57% had an unplanned pregnancy. Another important finding was that women who drank binge drinking patterns and those who did not know they were pregnant had a higher number of children. This result corroborates the literature; a previous screening study conducted with this same target population verified positive associations in women using alcohol and a higher number of pregnancies (Tran et al., 2014;

Ordinioha and Brisibe, 2015). Inevitably, if the social and psychological factors that precipitate the drinking are unresolved, these results would repeat in pregnancies without a structured support package.

As evaluated in previous studies, for men and women alike alcohol use in pregnancy can be construed as a high-risk behaviour associated with unprotected sex which is linked to a greater risk of sexually transmitted infections (STI), sexual abuse and abortion (Diehl et al., 2017). Notwithstanding, the lack of infrastructure in developing countries coupled with the lack of contraception services for women leaves them particularly vulnerable. Although the cross-sectional design of the present study does not allow us to establish a causal relationship between the variables investigated, it is to be considered that binge drinking and unplanned pregnancy may be associated with, and can contribute to, precarious prenatal care, susceptibility to maternal infections and obstetric complications, risk of having low birth weight baby, children with an atypical pattern of development and exposure to child abuse later (Naimi et al., 2003). A point to emphasise is that the responsibility for drinking during pregnancy does not lie wholly on females, but some of the social determinants, including male drinking patterns at the pre-conception stage, need much more exploration on a global scale.

A case-control study with 72,907 participants showed an association between alcohol use and unplanned pregnancy in 45% of women. Binge drinking was observed in the preconception period, which was associated with unplanned pregnancies, especially in white women. Being single, smoking and being exposed to violent situations were also predisposing factors to binge drinking during pregnancy (Naimi et al., 2003). However, it is difficult to ascertain whether the unplanned pregnancy leads to violent situations and then social isolation. In this study, although almost a third of women were having their first pregnancy; there was a predominance of binge alcohol in the previous year and unaware of the pregnancy until the second trimester of pregnancy. These indices are much higher than those described in the literature, which points out that 10% of pregnant women admitted alcohol consumption in the last month and about 50% confirmed that they drank at some point during the first trimester of pregnancy due to not knowing about their pregnancy (CDC 2012; SAMHSA, 2014; CDC, 2015).

Binge drinking has become common behaviour among women in the last decade, especially among young people (Popova et al., 2018). In this sense, one of the biggest concerns is the increased likelihood of engagement in risky sexual behaviour, unplanned pregnancy and repeated exposures to toxic agents until pregnancy is confirmed (Naimi et al., 2003; Slavensky and Kesmodel, 2018).

The culture of alcohol use and binge drinking by women in this study are worrying phenomena, due to the various consequences that this pattern of consumption causes to women's health (Santos et al., 2019; Junior & Monteiro, 2020). In the Brazilian female population, the prevalence is 36% (2006) and 49% (2012) (LENAD, 2012). Unhealthy lifestyle habits, such as excessive alcohol and tobacco use, can occur throughout the life cycle; consequently, the chances of use in pregnancy are higher, especially among women who had been consuming excessively previously (Watt et al., 2014; Dumas, Toutain and Simmat-Durand, 2017).

In a study conducted with 4,088 mothers who gave birth to lived babies, without congenital diseases (1997–2002), 30.3% had consumed alcohol at some point during pregnancy, of whom 8.3% had binge drank. However, consumption rates fell considerably after the first month of pregnancy. Twenty-two per cent of women confirmed alcohol use, although 2.7% had consumed during all pregnancy trimesters and 7.9% reported drinking during the third trimester of pregnancy. Consumption in the pre-pregnancy period was a strong predictor of both patterns of drinking during pregnancy (adjusted OR = 8.5, 95% CI = 6.67–10.88) and binge drinking during pregnancy (OR adjusted 36.0 CI 95% = 24.63–52.69). Other characteristics associated with alcohol use and binge drinking during pregnancy were: ethnicity non-Hispanic white, smoking during pregnancy and unplanned pregnancy (Ethen et al., 2009). The psychological and social determinants that impact women have been implied, however further life history and qualitative studies would enable an investigation into when interventions can be most effective to enable support.

Concerning alcohol consumption, 62.7% of the participants reported drinking (even occasionally) before pregnancy, and 36.3% of women consumed at least one dose of alcohol during pregnancy (Dupraz et al., 2013). The risk to the fetus through alcohol consumption before their pregnancy has been recognized and, even if they cease use after discovering, it is possible that there could have already been negative effects on the embryo (Lepper et al., 2015; McCormack et al., 2017). In this context, it is necessary to implement preventive actions, such as encouraging women to cease drinking during pregnancy. However, before that, there needs to be psycho-education in schools, psycho-social support, contraception availability, parental buy-in. Additionally, there needs to be strengthening of health policies that will enable healthcare staff to better support women (and men) who engage in unplanned pregnancies; since fetal alcohol disorder is a lifelong complication with high social and health costs (Riley, Infante and Warren, 2011; Ordinioha and Brisibe, 2015; Lange et al, 2017; Popova et al., 2017 and 2018; Im et al., 2019). Prenatal consultations, both in primary health care and in specialized clinics, are important spaces for health promotion, improvement of health conditions and prevention of damage during pregnancy with alcohol as a key global public health concern. Although professionals dealing with prenatal care endorse abstinence during pregnancy as a strategy to deal with the uncertainty of risk, there is often no initiative to investigate alcohol use before pregnancy and recommend cessation of use when the person intends to become pregnant (Coons et al., 2017).

In terms of public health policies in Brazil, no regulation inhibits alcohol consumption during pregnancy, whereas in other countries there are established public policies to address this issue (McCormack et al., 2017). For instance, in European countries, there is information on the labels of alcoholic beverages warning of the possible complications arising from the use during pregnancy (Dumas, Toutain, and Simmat-Durand, 2017).

An Australian study demonstrated that although most Australian midwives (93.2%) enquire about alcohol use by women, though less than half used a recognized screening instrument and 70.4% reported that they did not carry out appropriate interventions when necessary (Payne et al., 2014). Professionals take the issue of alcohol use in pregnancy seriously but do not necessarily use appropriate assessment tools

or have enough psycho-social support mechanisms. There is recognition of the need for continuing professional education about the prevalence of alcohol use in pregnancy and FASD (Payne et al., 2014).

The present study has limitations; firstly, the evaluation of binge use– which was only measured as consumption in the previous year. The evaluation of alcohol use by partners; since this has been recognized as a strong influencer of the patterns of use amongst women regardless of gestational status (Naimi et al., 2003; Dupraz et al., 2013). In different circumstances, the research highlights the need to adopt preventive actions before and during the pregnancy period; as an important motivating factor, which remains under-addressed in Brazil; and based on the evidence requires global redress.

Implications for clinical practice

The findings of this study have great relevance for nurses and other professionals who care for women of reproductive age, due to the need for preventive actions (intervention, support and advice), and monitoring of consumption through the use of validated instruments, not only during pregnancy but also during family planning. There is a role for professionals in ensuring women have access to contraception more widely and able to access talking therapies.

In addition, spouses should be included in these guidelines, so that they can be encouraging agents and multiplier of counselling, providing support to women in deciding to maintain alcohol abstinence during pregnancy to prevent possible negative outcomes that maternal use of alcohol can cause. Equally, men also need to be screened because of the impact of alcohol in family planning/ unplanned scenarios as is the case. There continues to be a high prevalence of FASD, with different levels in regions and subpopulations (May et al., 2016; Riley, Infante and Warren, 2011). Promoting family planning is highly recommended and can be effective in reducing consumption of alcohol and prevention possible complications (McCormack et al., 2017; Jonsson, Salmon and Warren, 2014).

Conclusion

This study brought new data that contribute to expanding the knowledge in the growing area of women and substances use. The study highlights the potential impact of women consuming alcohol pre-and post-pregnancy, and often being unaware that they are pregnant. The rates of consumption of alcohol among pregnant women, particularly those who binge drink whilst not knowing they are pregnant are considerable, risking the fetus to exposure to alcohol during the intrauterine stage. Early recognition of the characteristics of the population who are likely to drink when pregnant can serve as a warning for nurses and health professionals who work with this population. Pregnant women, women of reproductive age and those in high vulnerability groups should take priority for interventions with actions that go beyond immediate health issues. Binge-drinking before conceiving, and then proceeding to drink post-pregnancy is a public health issue. However, this issue needs to be considered within the realm of socio-political context, the poverty of resources and lack of psycho-sexual interventions across the life-span.

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Conflicts of Interest

The author(s) declare no potential conflicts of interest with respect to the research authorship and/or publication of this article.

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Tables

Table 1
Socio-demographic information and pattern of alcohol use. (N = 112)

		Total 112 (100.0)	Use in the last year 64 (57.1)	<i>Binge</i> 36 (26.8)	Use without awareness of pregnancy 36 (32.1)
Age	18–29	71 (63.4)	27 (56.2)	19 (63.3)	20 (55.6)
	> 30 years	41 (36.6)	21 (43.8)	11 (36.7)	16 (44.4)
Marital status	With partner	93 (83.1)	50 (79.4)*	24 (38.1)*	30 (47.6)*
	Without partner	19 (16.9)	14 (28.6)	6 (12.2)	6 (12.2)
Schooling (years)	> 8	33 (29.5)	21 (35.0)	13 (43.3)	14 (42.4)
	< 8	79 (70.5)	39 (65.0)	17 (56.7)	19 (57.6)
Religion	None	17 (15.2)	11 (17.2)	5 (16.7)	7 (19.4)
	Catholic	37 (33.0)	25 (39.1)	10 (33.3)	16 (44.4)
	Evangelic	48 (42.9)	23 (35.9)	13 (43.3)	11 (30.6)
	Other	10 (8.9)	5 (7.8)	2 (6.7)	2 (5.6)
Occupational status	Employed	48 (42.9)	27 (42.2)	13 (43.3)	14 (38.9)
	Unemployed	64 (57.1)	37 (57.8)	17 (56.7)	22 (61.1)
Accommodation	Own	54 (48.2)	28 (43.8)	12 (40.0)	16 (44.4)
	Rented	47 (42.0)	29 (45.3)	14 (46.7)	17 (47.2)
	Others	11 (9.8)	7 (6.2)	4 (3.6)	3 (2.7)
Familiar income	≤ 2 MW	70 (62.5)	39 (60.9)	22 (73.3)	23 (63.9)

Note: *Chi*-square test. p -value $\leq 0.05^*$. Minimum Wage (SM). Brazilian Real 2018 R\$ 937.0 (246 \$ US dollar).

	Total 112 (100.0)	Use in the last year 64 (57.1)	<i>Binge</i> 36 (26.8)	Use without awareness of pregnancy 36 (32.1)
2–3 MW	26 (23.2)	15 (23.4)	4 (13.3)	8 (22.2)
≥ 3 MW	11 (9.8)	6 (9.4)	3 (10.0)	3 (8.3)
Don't known	5 (4.5)	4 (6.2)	1 (3.3)	2 (5.6)

Note: *Chi*-square test. p -value $\leq 0.05^*$. Minimum Wage (SM). Brazilian Real 2018 R\$ 937.0 (246 \$ US dollar).

Table 2
Obstetric information and alcohol consumption (N = 112).

		Total 112 (100.0)	Use in the last year 64 (57.1)	Binge 36 (26.8)	Use without awareness of pregnancy 36 (32.1)
Another disease	Yes	17 (15.2)	11 (17.2)	6 (20.0)	7 (19.4)
	No	95 (84.8)	53 (82.8)	24 (80.0)	29 (80.6)
Planned pregnancy	Yes	48 (42.9)	23 (35.9)	10 (33.3)	13 (36.1)
	No	64 (57.1)	41 (64.1)	20 (66.7)	23 (63.9)
Consultations prenatal care	Yes	99 (88.4)	55 (85.9)	29 (96.7)	29 (80.6)
	No	13 (11.6)	9 (14.1)	1 (3.3)	7 (19.4)
Problems during pregnancy	Yes	41 (36.6)	27 (42.2)	12 (40.0)	13 (36.1)
	No	71 (63.4)	37 (57.8)	18 (60.0)	23 (63.9)
Abortion	Yes	17 (15.2)	10 (15.6)	3 (10.0)	14 (17.1)
	No	95 (84.8)	54 (84.4)	27 (90.0)	68 (82.9)
Number of pregnancies	None	41 (36.6)	23 (35.9)	8 (26.7)	12 (33.3)
	1	35 (31.2)	17 (26.6)	6 (20.0)	6 (16.7)
	2	18 (16.1)	11 (17.2)	9 (30.0)*	8 (22.2)
	3 or more	18 (16.1)	13 (20.3)	7 (23.3)	10 (27.8)*
Gestational period	1° Trimester	17 (15.2)	12 (18.8)	8 (26.7)	7 (19.4)
	2° Trimester	73 (65.2)	37 (57.8)	14 (46.7)*	18 (50.0)

Note: *Chi*-square test. p -value < 0.05*.

	Total	Use in the last year	Binge	Use without awareness of pregnancy
	112 (100.0)	64 (57.1)	36 (26.8)	36 (32.1)
3 ^o Trimester	22 (19.6)	15 (23.4)	8 (26.7)	11 (30.6)

Note: *Chi*-square test. p-value < 0.05*.

Table 3
Frequency of alcohol use (N = 112).

		In the last year	Binge	Unaware about pregnancy	Total
		64 (57.1%)	36 (26.8%)	36 (32.1%)	112 (100.0%)
Alcohol use unaware pregnancy	Yes	35 (54.7)*	23 (76.7)*	-	36 (32.1)
	No	29 (45.3)	7 (23.3)	-	76 (67.9)
Frequency of alcohol use	None	-	-	1 (2.8)	48 (42.9)
	Monthly	37 (57.8)*	10 (33.3)	11 (30.6)	37 (33.0)
	Occasionally	12 (18.8)	7 (23.3)	9 (25.0)	12 (10.7)
	Weekly	15 (23.4)	13 (43.3)*	15 (41.7)*	15 (13.4)
T-ACE	Positive	12 (18.8)	10 (33.3)	9 (25.0)*	12 (10.7)
	Negative	19 (29.7)	8 (26.7)	12 (33.3)	21 (18.8)
	Abstinent during the pregnancy.	33 (51.6)	12 (40.0)*	15 (41.7)	79 (70.5)

Note: Chi-square test. p-value ≤ 0.05. Tolerance, Annoyed, Cut down, Eye opener (T-ACE)