






Prevalence and factors associated with the use of drugs of abuse by pregnant women

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Abstract

Objectives: to estimate the prevalence of drug abuse in pregnant women and to associate with the variables education, family income, race and number of pregnancies.

Methods: descriptive, cross-sectional, quantitative research. Developed in the municipality of Bandeirantes-PR, from June 2016 to December 2017. The population was 114 pregnant women and the dependent variables were alcohol / tobacco use and illicit drugs and the independent variables were education, race, family income and number of pregnancies. The analysis was the comparison between the variables and Microsoft Excel 2007 and SPSS 20.0 was used. It was approved by the Ethics Committee.

Results: the use of drugs of abuse during pregnancy was 19.2%, presenting as a sociodemographic profile characterization the age between 19 to 29 years, predominance of non-white race, with study time ≤ 9 years, with income from 1 to 2 minimum wages and multiparous women. The most commonly used drug of abuse was alcohol, followed by tobacco. Concomitant use between drugs was significant with alcohol and tobacco / illicit drugs and tobacco.

Conclusions: drug use had a prevalence of 19.2% and acts in conjunction with social issues and this case, intervening is necessary with an individualized care plan, thus ensuring the promotion and prevention of maternal and child health.

Key words *High risk pregnancy, Drug users, Maternal-child nursing*



Introduction

The use of drugs, whether of legal or illegal nature, is considered a public order issue, as it is a common habit in all social classes, genders, and races.^{1,2} According to the II Household survey on the use of psychotropic drugs in Brazil, carried out by the Brazilian Drug Abuse Information Center, alcohol consumption, once in a lifetime by women, took place mostly between 18 to 24 years and 25 to 34 years, considered as fertile age with 72.6% and 73% percentiles, respectively. Tobacco consumption, reported at least once in a lifetime by women in the childbearing age group, was of 33.9% to 35.7%, and the consumption of illegal substances, at least once in a lifetime by women between 18 and 34 years of age, resulted in an average of 6.15%.³

When compared to the surveys carried out by the Brazilian Drug Abuse Information Center, from 2005 to 2010, evidence of an increase in drug use among women of childbearing age is observed, and thus, the binomial mother and child is increasingly exposed to such substances. The use, abuse, and dependence of drugs, as it is a behavior capable of causing potentially serious physical consequences, both for the mother and the child, represent a major concern for the various institutions and areas of society.³

It is known that the use of drugs during pregnancy is not recommended at any dose or quantity because it causes damage to both woman and fetus. However, some pregnant women, when they are aware of being pregnant, do not change their harmful habits, putting themselves and the fetus at risk; the reasons for such are diverse, such as the difficulty in overcoming addiction, psychological problems, relationship difficulties, financial difficulty, unwanted pregnancy, and misinformation.⁴

Alcohol consumption, which is a legalized and easily accessible substance, is not recommended to pregnant women due to the lack of safe doses to the mother and fetus. Fetal damage can vary in relation to the amount ingested, the trimester of pregnancy, maternal and fetal metabolic capacity, among others.⁵

In the first trimester there is a greater risk of physical anomalies, in the second trimester there is an increased risk of miscarriages, and in the third trimester there may be a decrease in fetal growth. One of the most serious consequences of alcohol consumption during pregnancy is Fetal Alcohol Syndrome characterized as craniofacial abnormalities, growth failure, and central nervous system disorder.⁵

Still on toxic substances of legal nature, tobacco is also included in this group. Its consumption also has maternal and fetal consequences such as ectopic pregnancy, placental abruption, membrane rupture, placenta praevia, and miscarriage. For the fetus, it can cause problems in neurological development, prematurity, and low birth weight.⁶ Tobacco use can cause fetal hypoxia and delayed intrauterine growth due to the vasoconstrictor effect of nicotine, a substance present in the cigarette that crosses the placenta, thus reducing blood flow to the fetus.^{2,7}

As for illicit drugs, they act on the pregnant woman's cardiovascular system causing adrenergic hyperstimulation and vasoconstriction, thus, increasing heart rate and blood pressure, leading to a decrease in blood flow to the placenta.⁸

In a survey conducted at *Hospital das Clínicas da Universidade Federal de Minas Gerais* (Teaching Hospital of the Federal University of Minas Gerais) between 1997 and 2012, it was found that 30.6% of pregnant women consumed alcohol; 52.9% were smokers and maintained the habit during pregnancy; 18.8% of women used alcohol and tobacco concurrently, and the use of illicit drugs had a frequency of 7.6%.⁹

In order to provide appropriate prenatal care to this vulnerable and at-risk group, as well as the need for knowing the prevalence and socioeconomic and cultural conditions, together with their obstetric background for quality and resolving care during pregnancy, this study aims to estimate the prevalence of drug abuse in pregnant women and verify the association with the variables education, family income, race, and number of pregnancies.

Methods

This is a descriptive, cross-sectional trial of quantitative nature. Developed in the city of Bandeirantes, located in the north of the state of Paraná, with a population of less than 50 thousand inhabitants. The structure of the municipality's health service consists of two hospitals, one of them philanthropic and the other private, six Basic Healthcare Units with a Family Healthcare Strategy, one Emergency Room, one specialized medical care unit, one Mother and Child Healthcare Service, one Mother and Child Healthcare Center, and the Community Healthcare Agents Program. The minimum sample size was 114 subjects, considering a population of 432 births / year, a 95% confidence interval, a 11% ratio, and an error margin of 5%.

The inclusion criterion to participate in the trial was to be in the third trimester of pregnancy.

Data collection was carried out by the researcher at random, from June 2016 to December 2017, at the Mother and Child Healthcare Center, in a restricted room for the interview, held in a single meeting, after the collection of all due signatures to the Informed Consent and Assent Forms.

The study presents as a dependent variable the use of alcohol / tobacco and illicit drugs and as independent variables the education, race, family income, and number of pregnancies, focusing on pregnant women who used, at least once during pregnancy, legal and illegal drugs at any dose. Alcohol and tobacco in the form of cigarettes were considered legal drugs and marijuana, crack, and cocaine were considered illicit drugs.

This study had limitations such as the lack of precision of doses and quantity of drugs used, per week, by women, and the lack of information about the outcome of the pregnancy to the mother and child.

Data were processed in the Microsoft Excel® 2007 program and presented in tables, with nominal or categorical variables described in absolute and relative frequencies; and the numerical variables in frequencies, mean, and standard deviation.

The data spreadsheet was exported to the software SPSS®, version 20.0, in which the analyses were carried out and some associations of interest were made, using the Chi-Square Test. Statistical decisions were made using a significance level of $p < 0.05$.

The study was submitted to the Manager of the Municipal Health Department of Bandeirantes - PR, and was then forwarded to the Research Ethics Committee for analysis. This study observed the principles of Resolution 466/2012 of the National Research Board, under opinion number 1.606.067.

Results

Of the 114 participating pregnant women, 22 (19.2%) were users of drugs of abuse during pregnancy. Of the 22 pregnant women who used drugs of abuse, 72.7% (16/22) were between 19 and 29 years of age, with a minimum age of 15 and a maximum age of 41; regarding race, there was a predominance of non-white with 68.2% (15/22) pregnant women; pregnant women who also reported having studied ≤ 9 years was 50.0% (11/22). Regarding family income, 77.3% (17/22) of the pregnant women reported 1 to 2 minimum wages and, regarding the number of pregnancies, 77.3% (17/22) were multiparous (Table 1).

In the raw analysis, regarding the use of legal

drugs, it is observed that the use of alcohol prevails in 45.4% (10/22) of cases, followed by the concurrent use of alcohol and tobacco in 9.1% (2/22) of cases and the exclusive use of tobacco in 18.2% (4/22). Regarding the use of illegal substances, 9.1% (2/22) of the pregnant women reported using them; the same percentage was reported for concurrent use of alcohol and tobacco (Table 2).

When associated with pre-determined variables with the individual use of alcohol, tobacco, and illicit drugs, it was noted that the association of the use of alcohol and illicit drugs does not present a significant result in this trial.

However, when associated with variables of tobacco use, it was observed that there was a relevance to low education ($p = 0.06$) (Table 3).

When the concurrent use of drugs by the studied pregnant women was assessed, statistical significance was perceived in two situations, the use of tobacco / alcohol and illicit drugs / tobacco ($p < 0.001$ and $p = 0.039$, respectively) (Table 4).

Discussion

The present study identified the prevalence of drug abuse in 19.2% of pregnant women. This datum that was also evidenced in a study carried out in the city of Maringá, State of Paraná, where the prevalence was 18.3%.¹⁰

The prevalence shown in this study is considered high and indicates a public health problem, as these pregnant women are stratified as high risk.¹¹ The use of drugs of abuse can cause damage to maternal and child health such as maternal hypertension, placenta praevia or its premature detachment, preterm labor, small babies for gestational age, fetal alcohol spectrum disorder (FASD), prematurity, among others.^{1,2,10}

When associating drugs of abuse to socioeconomic and cultural factors, a low level of education was observed, with frequency of ≤ 9 years of study, with a predominance of the non-white race; regarding family income, there was a predominance of 1 to 2 minimum wages, and women were multiparous.

This trial showed an approximately relevant statistical data about the association of low education with the use of nicotine, a fact similar to that shown in a study carried out in a medium-sized Brazilian city in 2016, which reinforces that the educational socioeconomic factor influences the use of drugs of abuse, since poor education and lack of information can be accountable for the beginning and permanence of bad habits in life.⁶

Table 1

Pregnant women characteristics - city of Bandeirantes - state of Paraná between 2016 and 2017.

Variables	Drug use			
	Yes (N = 22)		No (N = 92)	
	n	%	n	%
Age (years)				
< 18	3	13.6	20	21.8
19 – 29	16	72.7	50	54.3
30 – 40	3	13.7	22	23.9
Race				
White	7	31.8	37	40.2
Non-white	15	68.2	55	59.8
Educational background (years)				
≤ 9	11	50.0	37	40.2
≥ 10	10	45.4	55	59.8
Not informed	1	4.6	0	0.0
Family income (minimum wages)				
<1	5	22.7	16	17.4
1 – 2	17	77.3	70	76.1
3 – 4	0	0.0	2	2.2
Not informed	0	0.0	4	4.3
Number of pregnancies				
First pregnancy	5	22.7	40	43.5
Multiple pregnancies	17	77.3	52	56.5

Table 2

Legal and illegal drugs used by the pregnant women of the city of Bandeirantes, state of Paraná, from 2016 to 2017.

Types of legal and illegal drugs used	N	%
Alcohol	10	45.4
Tobacco	4	18.2
Illegal drugs	2	9.1
Concurrent alcohol and tobacco	4	18.2
Alcohol, tobacco, and illegal drugs concurrently	2	9.1
Total	22	100.0

Table 3

Association of the use of alcohol, tobacco, and illegal drugs with the variables family income, race, education, and number of pregnancies of pregnant women in the city of Bandeirantes, state of Paraná between 2016 and 2017.

Variables	Alcohol			Tobacco			Illegal drugs		
	n	%	<i>p</i>	n	%	<i>p</i>	n	%	<i>p</i>
Family income (wage)			0.759			1.000			0.340
1	4	19.0		2	9.5		2	9.5	
> 1	12	13.5		8	9.0		2	2.2	
Race			1.000			0.807			1.000
White	6	13.6		3	6.8		2	4.5	
Non-white	10	14.3		7	10.0		2	2.9	
Number of pregnancies			0.388			0.190			0.102
1	4	8.9		1	2.2		1	2.2	
2	7	16.7		5	11.9		2	4.8	
3	1	7.7		1	7.7		0	-	
4	2	22.2		2	22.2		0	-	
5	1	33.3		1	33.3		1	33.3	
6	1	50.0		0	-		0	-	
Educational background (years)			0.352			0.060			1.000
< 8	9	18.8		7	14.6		2	4.2	
>8	7	10.8		2	3.1		2	3.1	

Table 4

Association of types of drugs used concurrently by pregnant women in the city of Bandeirantes, state of Paraná between 2016 and 2017.

Variables	Tobacco / Alcohol			Illegal drugs / Alcohol			Illegal drugs / Tobacco		
	n	%	<i>p</i>	n	%	<i>p</i>	n	%	<i>p</i>
Concurrent Use			<0.001			0.169			0.039
Yes	6	60.0		2	50.0		2	50.0	
No	10	9.6		14	12.7		8	7.3	

When the race variable is descriptively analyzed, it can be considered highly relevant, with more than 50% of the sample using drugs of abuse belonging to brown or black skin color, however, without significant *p*-value. Data found in other studies.^{12,13}

In the statistical evaluation, three associations of drugs of abuse were observed: the use of tobacco / alcohol, the use of illicit drugs / tobacco, and illicit drugs / alcohol. A statistical association was found regarding the use of tobacco / alcohol and the use of illicit drugs / tobacco; this result has also been found in similar studies. The isolated use of drugs during pregnancy represents a risk to the binomial, however, when associated with one more type of substance, there is the potentiation of adverse effects to both mother and fetus.^{6,8}

After tracking and identifying the use of drugs

and the risk factor, it is necessary to act according to the public policies available, such as the acceptance at the basic healthcare unit according to the protocols of the Ministry of Health; and referral of the pregnant woman to the Psychosocial Care Centers (CAPS – Portuguese acronym), and / or specialized centers; and, when necessary, follow-up by the Family Healthcare Strategy (FHS) in order to provide comprehensive care.^{4,7}

In this context, nursing has a very important role in providing quality prenatal care, ensuring the promotion of physical and mental health in order to reduce health problems. The provision of information to pregnant women who use drugs is essential, clarifying the harm that this practice can bring to themselves and to the fetus in formation; however, for assistance to be effective, it is necessary to create

a bond between the woman and the nurse professional, as well as trust. This bond takes place through welcoming, an extremely important characteristic for the pregnant woman's compliance with prenatal care and the indicated guidelines.⁴

Pregnancy is characterized as a chronic condition that goes beyond diseases, as it incorporates certain physiological states. People with chronic conditions of lower risk have their condition centered on supported self-care technologies, with a focus on the FHS; while those with high and very high risk conditions require a more significant presence of professional attention, with a greater concentration of care by the healthcare team and with the co-participation of PHC and specialized care.¹⁵

Therefore, pregnant women who use drugs of abuse must be stratified as high risk. Stratification of users by risk strata is a central element of population-based management. Rather than having a single attention for all users, it differentiates them by risks, and establishes, in clinical guidelines, the types of care and their concentration regarding each population group.¹⁵

Therefore, it is suggested that pregnant women who use drugs of abuse should be accompanied by the case management (CM) strategy. This strategy has the main role of a case manager, which can be a nurse or social worker, to manage the care of the person with a very complex chronic condition, their family, and their social support network. Thus, it implies defending their interests, empowering them for self-care, autonomy, and independence, enabling communication with service providers; and coordinate care across the Health Care Network (HCN).¹⁶

However, for the case management of these pregnant women who use drugs of abuse to be effective, it is necessary to first identify the problem, then, create an individualized care plan, and monitor the efficiency of this applied care plan. It is believed that with these measures it is possible to carry out a

resolute case management in order to prevent further damage to the binomial, thus providing quality of life for women and babies.¹⁵

In this study, the main results were the prevalence of use of drugs of abuse in 19.2%, with the socio-demographic profile of pregnant women aged between 19 and 29 years old, predominance of the non-white race, schooling of ≤ 09 years, income of 1 to 2 minimum wages, and multiparous women. There was a high frequency of use of alcoholic beverages and their concurrent use with tobacco / and tobacco with illicit drugs.

It is concluded that the use of drugs of abuse acts in conjunction with social aspects, and that intervening in this case is necessary, with an individualized and effective care plan, thus guaranteeing promotion and prevention of the health of women and their babies.

Attention to quality prenatal care is of paramount importance, due to health promotion and the prevention of injuries to the mother and child. For this to happen, it is necessary to know the population, their socioeconomic profile, and life habits so that it is possible to act in the face of their problems and weaknesses.

Further trials are recommended to investigate the mother and child outcome of pregnant women who use drugs of abuse, and to evaluate the efficiency of case management in the care of pregnant women who use drugs.

Author's contribution

Silva FTR and Tamais MLB contributed to the conception, planning, and data collection of the article. Costa AB, Melo SCCS, and Fernandes CAM carried out data interpretation and review of the manuscript. All authors approved the final version of the manuscript and are publicly responsible for the contents of the article.

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