Cogitare Enfermagem

ORIGINAL ARTICLE

CONSUMPTION OF DRUGS OF ABUSE DURING PREGNANCY ANALYZED BY MEANS OF THE OPPORTUNISTIC SCREENING METHOD

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ABSTRACT

Objective: to screen drug consumption by pregnant women undergoing low-risk prenatal care and who use Primary Health Care services. Method: a cross-sectional study developed in 2016, 2018 and 2020 in a municipality from Paraná, Brazil. Consumption of drugs of abuse was screened using ASSIST 3.1. Descriptive and non-parametric statistics was used, as well as Spearman's correlation coefficient. Results: a total of 588 pregnant women were interviewed. Current use of alcohol, tobacco, marijuana and cocaine during pregnancy was verified, as well as a progressive increase in the consumption of these substances; significant correlations were found between the risk related to the consumption of drugs of abuse between them, schooling level, family income, skin color and religion. Conclusion: current consumption of one of the drugs was correlated with the others, revealing a profile of women with substance polyuse, young, primiparous, married, without their own house, medium schooling level, family income of up to two minimum wages, black- and/or brown-skinned, and catholic.

DESCRIPTORS: Pregnancy; Screening; Substance Abuse Detection; Women's Health; Primary Health Care.

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INTRODUCTION

Drug consumption, a historical-cultural phenomenon, was consolidated as a social attention, debate and concern field, as well as related to public policies throughout the twentieth century[1]. Drugs interfere in the individual's ability to make choices, leading to intense desires and to compulsion, with the possibility of turning into addictions. It is estimated that 35 million people suffer various disorders due to drug use in the world, and that only one seventh of them undergo treatment[2]. Negative results are associated with schooling level, employment status, housing, relationships and involvement in legal problems[3-4].

Diverse data indicate an increase in the consumption of alcohol, tobacco and other drugs among women, particularly those of reproductive age, with impacts on pregnancy and lasting or permanent repercussions on maternal and fetal health, associated with a wide range of deleterious effects[4-7].

A study conducted with pregnant women revealed that 15.9% smoked, 8.5% consumed alcoholic beverages, and 5.9% used illicit drugs. Approximately 1.9 million children of female drug users are exposed to harmful substances during the prenatal period. By use frequency order, dependence on tobacco is the highest, followed by alcohol, marijuana and cocaine. Drug polyuse is found in 50% of the users[6,8].

In Brazil, few studies address drugs in the gestational period, as there is low adherence to prenatal care due to individual vulnerability issues or to the drug users' difficulties accessing the health services[7,9]. Diverse scientific evidence indicates that women tend not to report their consumption during pregnancy[9-10]. Some women can be more prone to reducing or ceasing consumption during pregnancy, as there is emotional involvement of the mother with the fetus and, in order to achieve the benefits of use cessation, actions such as screening and brief interventions should occur right at the first prenatal consultation[11].

However, in Brazil, this does not occur systematically, either due to lack of training, willingness and/or interest on the part of the professionals, or because they are unable to carry out the screening since, in the practices of most Brazilian care settings, there is prevalence of referrals or negligence of drug use cases instead of an in loco intervention (individual and/or family). We also know that disarticulation between the Family Health Strategy (FHS) and the other mental health care services favors this situation[12].

It is recommended to screen alcohol and drug use during pregnancy in order to promote early identification and proper referrals. These actions should be implemented universally, across all socioeconomic classes and racial and ethnic groups; they should occur at the first prenatal consultation and, for those with a positive result, be repeated during pregnancy to monitor use over time[5-6].

In view of the scarcity of evidence on the screening of drug use during pregnancy and in Primary Health Care (PHC) and to the need to produce data that assist in the implementation of inclusive public policies for the control and cessation of drug consumption in pregnancy, this study aimed at screening drug use by pregnant women undergoing low-risk prenatal care, users of Primary Health Care services.

METHOD

A cross-sectional study conducted in 2016, 2018 and 2020 with pregnant women undergoing low-risk prenatal care in a Basic Health Unit (BHU) from the municipality of Sarandi-PR, Brazil. The BHU is the main gateway to the system, and is the communication

center with the Primary Health Care network, playing a central role in ensuring good quality health[12].

The municipality of Sarandi had a population of 96,803 inhabitants in 2020 and is linked to Maringá, serving as a bedroom suburb. Its urban well-being indices are lower than those of most of the other municipalities, sizing the inequality between the several municipalities that comprise the Metropolitan Region of Maringá (Região Metropolitana de Maringá, RMM)[13].

The study population consisted in 588 pregnant women. The sample was calculated from the number of pregnant women registered in the Monitoring System of the Humanization in Prenatal and Birth Program (Sistema de Acompanhamento do Programa de Humanização no Pré-Natal e Nascimento, SISPRENATAL), in the month prior to data collection. It considered a maximum drug consumption percentage of around 20.0%, with a 5.0% sampling error and a 95.0% confidence level.

The interviews were carried out in a private place in January 2016, December 2018 and January 2020. A sociodemographic questionnaire was used addressing age group, marital status, skin color, religion, schooling and family income, housing conditions and drug use by family members; as well as gestational variables: pregnancy, parity, abortion, cesarean section and delivery. The dependent variable was collected through the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST 3.1), validated for the Brazilian context[14].

ASSIST 3.1 consists of eight questions that detect consumption of nine drugs (tobacco, alcohol, marijuana, cocaine, stimulants, sedatives, inhalants, hallucinogens and opiates), addressing use frequency in life and in the last three months, problems related to use, concern about use by close people, impairment in performing tasks, unsuccessful attempts at ceasing or reducing use, feeling of compulsion, and injectable use[14]. The answers yield a score that varies from zero to 36. For alcohol, the zero-10 range is considered as indicative of occasional use, 11-26 indicates abuse, and ≥27 suggests addiction. For the other drugs, the zero-three sum indicates occasional use, from four to 26 indicates abuse, and ≥27 suggests addiction[14].

The data were analyzed using the Statistical Package for the Social Science, version 25, and were treated by means of descriptive statistics; the time frame was treated using Kruskal-Wallis non-parametric test, with significant differences in distribution when $p<0.05$, and asymptotic significance was presented with Bonferroni correction by multiple tests. Spearman's correlation coefficient analysis was used, where the RRC of the drugs was tested with the sociodemographic variables, as well as the RRC of the drugs of abuse among themselves. Correlations with p-value<0.05 in a 95% confidence interval were considered significant. The following Spearman's ρ values were considered: from zero to 0.5,weak correlation; from 0.5 to 0.7, moderate correlation; from 0.7 to 0.9, strong correlation; and above 0.9, very strong correlation[15].

The research observed the ethical aspects and was submitted to and approved by the Research Ethics Committee (Comitê de Ética em Pesquisa, CEP/Uningá), under opinion numbers: 1,065,711/2015 and 3.083.387/2018; and CEP/UEM, opinion number: 3,255,326/2019. All the interviewees signed the Free and Informed Consent Form.

RESULTS

The mean age of the women interviewed was 25.3 years old (SD±5.97), with a median of 25 and a mode of 21. It was found that 63.6% (n=374) were married or lived in stable unions, whereas 36.4% (n=214) stated being single. Parity varied from zero to six

pregnancies, with 41.3% (n=243) primiparous and 58.7% (n=345) multiparous women.

Regarding the housing conditions, 48.1% (n=283) stated living in their own house, 46.6% (n=274) in rented properties, and 5.3% (n=31) in an assigned property or in their parents' house. A low schooling level, incompatible with age, was found, with 24.7% (n=145) having attended up to the ninth year of elementary school; 42% (n=247) up to medium level; 27.9% (n=164) had incomplete higher education, 5.5% (n=32) had completed higher education, and 1.9% (n=11) had graduate degrees.

The mean family income was two minimum wages (SD±R$ 985.00), varying from no income to a maximum of R$ 6,000.00. In relation to skin color, 39.3% (n=231) self-declared as brown-skinned, 35.2% (n=207) as black-skinned, 25.2 (n=148) as white-skinned, and 0.3% (n=four) as Asians. Regarding religiousness, 49.3% (n=290) were Catholics, 41.8% (n=246) were Evangelicals, 1.5% (n=nine) professed other religions, and 7.3% (n=43) were agnostics.

In relation to the consumption of drugs of abuse by family members, the results revealed that 40.8% (n=240) had more than one family member in such condition, with 17.7% (n=104) of the cases being uncles, grandparents, brothers-in-law and cousins, 15.5% (n=91) brothers, 10.9% (n=64) the father, and 6.5% (n=38) the mother. Only 8.6% (n=51) reported no consumption among the family members. Among those married/with a partner, it was observed that, of the 374 partners, 69.5% (n=259) consumed alcohol, 17.0% (n=64) tobacco, 10.0% (n=38) marijuana and 3.5% (n=13) used cocaine.

Table 1 shows use in life (experimental use) of the drug classes screened with ASSIST 3.1. Tobacco and alcohol were the drugs that presented the highest use frequency in life. 35.4% (n=74) of the women had experienced tobacco in 2016; 55.3% (n=99) in 2018; and 66.0% (n=132) in 2020. 86.1% (n=180) of the women had experienced alcohol in 2016; 86.6% (n=155) in 2018; and 92.0% (n=184) in 2020. The mean age at the time of experiencing tobacco varied from 14.9 (SD± 2.66) to 16.0 (SD±3.05); in turn, the range for alcohol was from 15.0 (SD±2.17) to 16.5 (SD±2.90).

Table 1 - Use frequency in life for tobacco, alcohol, marijuana and cocaine among the pregnant women undergoing low-risk prenatal care, and their mean ages at the time of the experiences. Sarandi, PR, Brazil, 2021

Drug of abuse	2016	2018	2020
Tobacco			
n (%)	74 (35,4)	99 (55,3)	132 (66)
Age X (± SD)*	14,9 (2,66)	15,5 (2,42)	16,0 (3,05)
Alcohol			
n (%)	180 (86,1)	155 (86,6)	184 (92)
Age X (± SD)*	15,0 (2,17)	16,5 (2,90)	16,4 (3,22)
Marijuana			
n (%)	12 (5,7)	35 (19,6)	49 (24,5)
Age X (± SD)*	17,3 (4,45)	15,5 (1,83)	17,0 (4,07)
Cocaine			
n (%)	3 (1,4)	4 (2,2)	15 (7,5)
Age X (± SD)*	16,7 (3,05)	17,8 (0,50)	18,1 (4,08)

*SD: Standard Deviation. Source: The authors (2022)

Among the illicit drugs consumed in the experimental fashion, marijuana stood out with 5.7% (n=12) in 2016; 18.45% (n=33) in 2018 and 24.5% (n=49) in 2020. 1.4% (n=three) had already experienced cocaine in 2016; 2.2% (n=four) in 2018; and 7.5% (n=15) in 2020. The mean age at onset of illicit drug use varied from 15.5 years old (SD±1.86) for marijuana to 18.1 (SD±4.08) for cocaine (Table 1).

In relation to the current use frequency of tobacco (last 90 days), 18.2% (n=38) of the pregnant women smoked it in 2016. In 2018 and 2020, the percentages found for the smoking habit were 16.8% (n=30) and 35% (n=70), respectively.

Regarding the current use of alcohol, in 2016 it was identified that 27.3% (n=57) pregnant women consumed alcoholic beverages; in 2018, 17.3% (n=31) drank and, in 2020, 44.5% (n=89) of the pregnant women consumed alcoholic beverages.

In relation to the current use frequency of marijuana and cocaine, in 2016, 1.9% (n=four) used marijuana; in 2018, 1.7% (n=three) used marijuana and, in 2020, it was observed that 13% (n=27) consumed marijuana. There were no reports of cocaine consumption in 2016. In 2018, 1.7% (n=three) consumed cocaine and, in 2020, the percentage was 4% (n=eight).

Table 2 presents the sum of the scores related to questions two to seven, for all the drug classes consumed during pregnancy. The drugs' RRC results were separated by levels/years. 138 (23.5%) pregnant women consumed tobacco. In 2016, 7.7% (n=16) were considered as with low risk and 10.5% (n=22), as with moderate risk. In 2018, 3.9% (n=seven) were low risk, 8.9% (n=16) were moderate risk and 3.9% (n=seven) were high risk; in 2020, 12.5% (n=25) were low risk and 22.5% (n=45) were moderate risk.

Table 2 - Frequency values of the risk levels related to the consumption of tobacco, alcohol, marijuana and cocaine, among pregnant women undergoing prenatal care in a Basic Health Unit. Sarandi, PR, Brazil, 2021

Years	Drugs	Risk levels related to consumption			
		Non users	Low	Moderate	High
			n (%)	n (%)	n (%)
2016	Tobacco	171 (81,8)	16 (7,7)	22 (10,5)	0 (0)
	Alcohol	152 (72,8)	49 (23,4)	8 (3,8)	0 (0)
	Marijuana	205 (98,2)	3 (1,4)	1 (0,4)	0 (0)
	Cocaine	209 (100)	0 (0)	0 (0)	0 (0)
2018	Tobacco	149 (83,3)	7 (3,9)	16 (8,9)	7 (3,9)
	Alcohol	148 (82,7)	26 (14,5)	5 (2,8)	0 (0)
	Marijuana	176 (98,3)	2 (1,1)	1 (0,6)	0 (0)
	Cocaine	178 (99,4)	1 (0,6)	0 (0)	0 (0)
2020	Tobacco	130 (65)	25 (12,5)	45 (22,5)	0 (0)
	Alcohol	111 (55,5)	81 (40,5)	6 (3)	2 (1)
	Marijuana	173 (86,5)	19 (9,5)	7 (3,5)	1 (0,5)
	Cocaine	192 (96)	5 (2,5)	3 (1,5)	0 (0)

Source: The authors (2022)

A total of 177 (30.1%) pregnant women consumed alcohol. In 2016, 23.4% (n=49) were low risk and 3.8% (n=eight) were moderate risk; in 2018, 14.5% (n=26) were considered as with low risk and 2.8% (n=five) as with moderate risk and, in 2020, 40.5% (n=81) were low risk, 3% (n=six) moderate, and 1% (n=two) high (Table 2).

5.8% (n=34) of the pregnant women consumed marijuana. In 2016, 1.4% (n=three) had low risk and 0.4% (n=one) had moderate risk; in 2018, 1.1% (n=two) were low risk and 0.6% (n=one) moderate risk and, in 2020, 9.5% (n=19) were considered as low risk, 3.5% (n=seven) as moderate risk and 0.5% (n=one) as high risk. Nine (1.5%) pregnant women consumed cocaine; the following was detected: in 2018, 0.6% (n=one) with low risk and, in 2020, 2.5% (n=five) with low risk and 1.5% (n=three) with moderate risk. It is important to emphasize that there is no safe consumption level for these substances, and that the classification presented in this study follows the standard of the instrument used.

In relation to the assessment of consumption in the biennial periods analyzed, Table 3 shows the results of the Kruskal-Wallis test. Tobacco, alcohol, marijuana and cocaine presented statistical significance between the distributions in the 2018-2020 and 2016-2020 biennial periods.

Table 3 - Kruskal-Wallis test for the distribution of the risk related to the consumption of tobacco, alcohol, marijuana and cocaine between the biennial periods analyzed. Sarandi, PR, Brazil, 2021

Drug of abuse	Biennial period*	Test's statistics	p-value**, †
Tobacco	2018-2016	0,3	1,0
	2018-2020	-49,9	<0,001
	2016-2020	-49,7	<0,001
Alcohol	2018-2016	29,1	0,106
	2018-2020	-78,2	<0,001
	2016-2020	-49,1	0,001
Marijuana	2018-2016	0,7	1,0
	2018-2020	-34,8	<0,001
	2016-2020	-34,1	<0,001
Cocaine	2018-2016	-1,6	1,0
	2018-2020	-11,8	0,003
		-10,1	0,019

*Each row tests the null hypothesis that the distributions of years (between biennial periods) are the same; **Asymptotic significance is displayed (2-sided test); †Significance level is 0.05 and the significance values were adjusted by Bonferroni correction for multiple tests.
Source: The authors (2022).

There were significant weak correlations between the RRC of tobacco and those of alcohol (ρ=0.368), marijuana (ρ=0.342), cocaine (ρ=0.167), schooling (ρ=0.135), family income (ρ=0.141), skin color (ρ=0.145), religion (ρ=0.156) and housing (ρ=0.084). Alcohol presented significant weak correlations with the RRCs of tobacco (ρ=0.368), marijuana (ρ=0.287) and cocaine (ρ=0.189). Marijuana presented weak correlations with the RRCs of tobacco (ρ=0.347), alcohol (ρ=0.287), cocaine (ρ=0.446) and family income (ρ=0.105); and

cocaine was weakly correlated with the RRCs of tobacco (ρ=0.167), alcohol (ρ=0.189) and marijuana (ρ=0.446) (Table 4).

Table 4 – Spearman's correlation coefficient, sociodemographic variables and risk related to drug consumption. Sarandi, PR, Brazil, 2021

Drugs	Variable	Spearman's ρ	p-value*
Tobacco	RRC: alcohol	0,368	<0,001
	RRC: marijuana	0,342	<0,001
	RRC: cocaine	0,167	<0,001
	Schooling level	0,135	0,001
	Family income	0,141	0,001
	Skin color	0,145	<0,001
	Religion	0,156	<0,001
	Housing conditions	0,084	0,041
Alcohol	RRC: tobacco	0,368	<0,001
	RRC: marijuana	0,287	<0,001
	RRC: cocaine	0,189	<0,001
Marijuana	RRC: tobacco	0,342	<0,001
	RRC: alcohol	0,287	<0,001
	RRC: cocaine	0,446	<0,001
	Family income	0,105	0,011
Cocaine	RRC: tobacco	0,167	<0,001
	RRC: alcohol	0,189	<0,001
	RRC: marijuana	0,446	<0,001

*0.05 significance level.
Source: The authors (2022).

DISCUSSION

Drug consumption is part of the family environment, and is usual among family members and partners. The data corroborate the literature: these relationships exert an influence on maintenance of the smoking habit during pregnancy[16]. Involvement with family members or partners who use drugs represents a potential vulnerability element, whether due to consumption or to sharing time and spaces with users, thus naturalizing the behavior. It is indispensable to know such involvement and its repercussions for this context, favoring addressing the topic in prenatal care, when the woman is motivated by the arrival of the child, being more prone to reflecting on her choices and able to control her life[16-18].

The experimental use evidenced shows the adolescents' exposure, and is associated with diverse health, psychological and psychosocial problems[17]. The literature has shown

that psychological, environmental and demographic factors are strongly associated with drug use, as well as a combined pattern of alcohol and tobacco use, followed by alcohol and cannabis among female adolescent[17]. Drug use is a way of dealing with and/or alleviating social and psychological difficulties, particularly emotional experiences associated with depressive disorders. Identifying depression and developing programs treating the disease can be effective ways to delay or prevent multiple drug use[18-19].

It is increasingly common to find pregnant women living with an addiction and, in general, they have a consumption history that precedes pregnancy, hence the difficulty avoiding use during the gestational period. In general, it is only during prenatal care, when the pregnancy is already in progress, that consumption is detected[20]. Hence the importance that health professionals seek ways to address this theme among women of reproductive age.

The use of drugs (both licit and illicit) by women in several countries of the world, as well as in Brazil, has been increasing and affects various social layers in a similar way. Among the more affluent there is access to expensive drugs; however, the drug market has created options to also reach the less privileged, turning them into consumers; among them, women have been assuming an important role in this market. Once the addiction is installed, a series of problems is delineated, from social problems to those related to maternal/fetal health as a consequence of drug use[6-8,20-21].

This study corroborates with the literature in relation to the drugs most frequently used by the pregnant women: alcohol, tobacco, marijuana and cocaine[3,6,20,22]. Although it was not possible to detect a progressive increase in the consumption of these substances in the years studied, there is an increasing trend; and new studies, such as time series, can assist in this diagnosis. Changes in the legal and social acceptance of marijuana, reflected in some countries' laws and policies, can exert an impact on the prevalence of cannabis use, which may be associated with an apparent decline in the perceived harmful effects of its use over time[23].

Regarding use prevalence stratified by status of alcohol, tobacco, marijuana and cocaine users, pregnant women who presented RRC for cocaine were also users of cannabis, alcohol and tobacco. However, those who used tobacco derivatives presented RRC for all the sociodemographic factors analyzed. Culturally, illicit substances and alcohol are considered as more harmful and less sociably acceptable than cigarettes. Pregnant women generally stop using other substances, but not tobacco[8].

The results of the current study need to be interpreted in the context of the methodological limitations. There are probable relationships between drug consumption by pregnant women and reciprocal interactions present between the variables, which justify deeper research. The results belong to a unique context, and replication in other municipalities is necessary to ensure that the prevention programs are tailored to the specific population evaluated, pregnant women in this case.

It is worth noting that the limits of the results of this study are related to the use of data reported in a perhaps not ideal situation, that is, during appointments in a health service, which can result in the pregnant woman's insecurity in providing information, due to the illegality tangency that the subject matter raises, leading to undersized data.

CONCLUSION

Tobacco, alcohol, marijuana and cocaine consumption was observed during pregnancy, although consumption of other drugs of abuse or injectable use was not observed. The sociodemographic profile found was young, primiparous and married women, without their

own residence or living in someone else's house, medium schooling level, family income of up to two minimum wages, black-skinned and/or of mixed race, and Catholics. The drugs' RRC was weakly correlated between the drugs, as well as with schooling level, family income, skin color, religion and housing conditions. The family context and consumption of drugs of abuse by the partners were observed in this study, corroborating with the data evidenced in the literature.

The starting point was the assumption that all women should be asked about the habit of consumption of drugs of abuse in the preconception period and/or in the first prenatal consultation. Drug use during pregnancy can lead to a series of deleterious effects, with repercussions in childhood and adolescence; the effects vary based on the drug used, exposure time, and use extent. Women's sensitization by the health professionals about the serious consequences of drug use in the periconceptional period, during pregnancy and postpartum should be part of women's health care.

The results of this study contribute to Nursing, by revealing vulnerable groups among pregnant women, who should be the target of public health promotion and prevention policies, also pointing to the importance of nurses having a holistic view of the pregnant women during prenatal care. The efficacy of using a screening instrument for drug use was also shown, providing support for the implementation of more qualified assistance.

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