Teenage pregnancy: use of drugs in the third trimester and prevalence of psychiatric disorders

Gravidez na adolescência: uso de drogas no terceiro trimestre e prevalência de transtornos psiquiátricos

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Abstract

Objective: To determine the prevalence of psychiatric disorders during pregnancy, the prevalence of cocaine and marijuana use during the third trimester of gestation and the socio-demographic characteristics of a population of low-income teenagers. Method: One thousand pregnant teenagers were evaluated using the Composite International Diagnostic Interview, and a socio-demographic and socio-economic questionnaire at the obstetric center of a public hospital in São Paulo, Brazil. Hair sample was collected for analysis. Results: Of the 1000 pregnant teenagers interviewed, 53.6% were poor, 90.4% were unemployed, 92.5% were financially dependant and 60.2% dropped out of school. Those using drugs during the third trimester of pregnancy were equal to 6% (marijuana: 4%, cocaine: 1.7%, both: 0.3%). Those having at least one psychiatric disorder equaled 27.6%. The most frequent diagnoses were depression (12.9%), posttraumatic stress disorder (10.0%) and anxiety disorders (5.6%). Discussion: Unstructured families, dropping out of school, unemployment and a low level of professional training are all contributing factors to the maintenance of an unfavorable socio-economic environment in which there is a high prevalence of cocaine and marijuana use during the third trimester of pregnancy and an abnormally high incidence of psychiatric disorders.

Keywords: Pregnancy in adolescence; Substance-related disorders; Mental disorders; Psychosis substance-induced; Perinatal mortality (Public Health)

Resumo

Objetivo: Determinar, em adolescentes de baixa renda, a prevalência de transtornos psiquiátricos durante a gravidez, a prevalência de uso de cocaína e maconha no terceiro trimestre de gestação e descrever suas características sociodemográficas. Método: Mil adolescentes grávidas foram avaliadas por meio do Composite International Diagnostic Interview *e de um questionário sociodemográfico e socioeconômico no centro obstétrico de um hospital público de São Paulo. Dessas, foi colhida amostra para análise de fios de cabelo. Resultados: Das mil pacientes entrevistadas, 53,6% têm baixa renda, 60,2% abandonaram a escola, 90,4% estão desempregadas e 92,5% são financeiramente dependentes, 6% usaram drogas durante o terceiro trimestre da gravidez (maconha: 4%, cocaína: 1,7%, ambos: 0,3%) e 27,6% tiveram ao menos um transtorno psiquiátrico. Os diagnósticos mais freqüentes foram: depressão (12,9%), transtorno de estresse pós-traumático (10,0%) e ansiedade (5,6%). Discussão: Famílias desestruturadas, evasão escolar, desemprego e baixa capacitação profissional são fatores que contribuem para a manutenção desta situação socioeconômica desfavorável, cenário no qual são elementos importantes a alta prevalência de uso de cocaína e maconha no 3º trimestre da gravidez e de transtornos psiquiátricos.*

Descritores: Gravidez na adolescência; Transtornos relacionados ao uso de substâncias; Transtornos mentais; Psicoses induzidas por substâncias; Mortalidade perinatal (Saúde Pública)

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Introduction

The use of illicit drugs by pregnant teenagers is of marked interest. Its is due to the fact that there is consistent evidence in the scientific literature that this behavior may cause complications to the unborn baby[1] and the mother.[2] This is particularly true for the use of cocaine. On the other hand, follow-up studies show that prenatal exposure to marijuana is associated with injury of the prefrontal region of the brain.[3] Similarly, there is growing evidence about the negative consequences of mothers' psychiatric disorders during pregnancy and of its psychosocial damages for the newborn.[4]

The main purpose of this study is to determine, in a low-income teenage population at the obstetric center of a public hospital of the city of São Paulo, Brazil, the prevalence of use of cocaine and marijuana during the third trimester of gestation, the prevalence of psychiatric disorders during the whole pregnancy and to describe the socio-demographic characteristics of this population.

Method

1. Sample

A convenience sample of 1000 pregnant teenage (age between 11 and 19) women inpatients was evaluated at the obstetric center of the Mario de Moraes Altenfelder Silva Maternity Hospital. It is a public hospital located in the northern region of the city of São Paulo, the largest city in Brazil. This hospital caters mostly to local people from a low-income population who cannot afford private medical care. The data collection started on July 24, 2001 and finished on November 27, 2002. No patient refused to participate.

2. Ethics

Informed consent was given by the participants after complete explanations about the procedures of the research, purposes and possible harms. The study was approved by the ethical committee of the hospital (Mario de Moraes Altenfelder Silva Maternity Hospital) and the ethical committee of the Universidade Federal de São Paulo (process no. 0931/02).

3. Procedures

The patients were evaluated using the Composite International Diagnostic Interview (CIDI), 2.1 version and a socio-demographic and socio-economic questionnaire. Hair samples were collected for analyses. The interviewers, the patients and the researchers did not know the results of hair analysis, CIDI or questionnaires.

1) Composite International Diagnostic Interview

The CIDI is a validated[5] and fully-structured diagnostic interview, which generates diagnoses according to the International Classification of Diseases – 10th version (ICD-10) and Diagnostic and the Statistical Manual of Mental Disorders – 4th version (DSM-IV). The version to detect diagnosis in the last 12 months, which is a period that includes the pregnancy time, was used.

2) Hair analysis for cocaine and marijuana use detection

Each sample was composed of about 50 hairs, according to specific standard procedures for better performance in detection and security, with no esthetic harm, analyzing consumption of cocaine and marijuana in the last 3 months.

Analyses of hair samples[6] in this study were performed through the combination of Enzyme-Linked Immunosorbent Assay (ELISA) and Gas Chromatography Mass Spectrometry (GCMS). These methods are used for tracing and confirmation

of cocaine and/or marijuana use, respectively. Analyses were conducted at the Tricho-Tech laboratory, Cardiff, UK. Cut-off limits (sensitivity) adopted were 0.2 ng/mg of hair for cocaine and 0.025 ng/mg of hair for cannabis. Specificity of the tests is 100% for both drugs.

These drugs were chosen because they are 2 of the most common drugs in Brazil. Alcohol, inhalants and nicotine are also frequently used, but, currently, they cannot be traced by hair analysis.

3) Socio-demographic questionnaire

This questionnaire was adapted to the Brazilian culture and developed from the instrument used in Perinatal Needs Assessment (PNA),[7] a large study accomplished in California, containing information about:

a) Identification: age, address, place of birth;

b) Marital status;

c) Schooling, rate of school dropout, employment.

4) Socio-economic classification

A Brazilian socio-economic classification was used, which is based on the educational level of the household head, the number of domestic electric tools in the household and family income. It classifies individuals in 5 different categories (A to E). This variable was recoded to three categories: high (A and B), middle (C) and low (D and E).[8]

Results

1. Socio-demographic characteristics

Table 1 shows the socio-demographic characteristics of this population.

2. Hair analysis

Hair analysis detected use of cocaine and/or marijuana in the third trimester of pregnancy in 6% of the patients. Forty patients used marijuana, 17 used cocaine and 3 used both drugs.

3. Distribution of psychiatric diseases in the sample

CIDI detected 276 patients with at least one psychiatric disorder (27.6%). Of these 276 patients, some had more than 1 diagnosis. The number of detections of any psychiatric diagnoses (357) was, therefore, larger than the number of patients that received a psychiatric disorder diagnosis (276) because of the existence of comorbidities.

The prevalence of psychiatric diagnosis in this sample was 12.9% for Depression, 10.0% for Post-Traumatic Stress Disorder, 5.6% for Anxiety Disorders, 3.5% for Psychotic Disorders, 1.9% for Somatoform Disorders, 1.2% for Bipolar Disorders, 0.3% for Dissociative Disorders and 0.3% for Eating Disorders.

Discussion

The low frequency of formal marriage (7.2%) and high rates of couples who live together as a consequence of the pregnancy, without being married, found in this sample should be highlighted. Cultural and behavioral changes that have occurred in the last decades may explain this fact. Formal marriage seems to be no longer necessary to have a child. Besides, one could infer that these people did not plan to raise a family, it just happened by chance. Therefore, it is probable these children will not be born into an ideal environment.

High rates of school dropout (67.3%) as well as unemployment, associated to a low level of professional

Table 1 – Socio-demographic characteristics of a population of low income teenage pregnant women at the obstetric center of a public hospital in São Paulo, Brazil

Characteristics	n	%
District where she lives (n = 993)		
Northern zone – São Paulo city	932	93.9
Other places	61	6.1
Marriage		
Married	72	7.2%
Single	919	91.9%
Widow / separated	9	0.9%
Marital status (n = 1000)		
Live with the partner (Legally married or not)	627	62.7
Do not live with the partner	364	36.4
Widow / separated	9	0.9
Economical class (n = 995)		
High (A and B)	66	6.6%
Medium (C)	395	39.8%
Low (D and E)	534	53.6%
Head of household (n = 945)		
Partner	445	47.1%
Parents	377	39.9%
Herself	71	7.5%
Partner and parents	35	3.7%
Others	17	1.8%
Current job (n = 994)		
Yes	96	9.6%
No	898	90.4%
Professional qualification (n = 997)		
Yes	88	8.8%
No	909	91.2%
Teenagers in need of professional qualification (n = 995)		
Yes	492	49.4%
No	503	50.6%
Current student (n = 999)		
Yes	327	32.7%
No	672	67.3%
Pregnancy as a cause of school dropout (n = 649)		
Yes	391	60.2%
No	258	39.8%
Schooling (years)	Mean: 7.611	SD: 2.279
Age (years)	Mean: 16.996	SD: 1.505

training in spite of the intention manifested to have some kind of qualification, largely contribute to this unfavorable socio-economic situation. The relation between teenage pregnancy and a low level of education has outstood in the specialized literature.[9]

Other papers focusing on the prevalence of use of drugs among teenage students in Brazil show frequent use rates. These rates are around 2.6% for marijuana and 0.3% for cocaine when considering both genders[10] and 2.5% and 1.3%, for marijuana and cocaine when considering lifetime use in female students.[11] Therefore, prevalence of cocaine and marijuana use in the 3rd trimester of pregnancy found in this study (6%) can be considered high due to a series of circumstances involving pregnancy status. According to Ebrahim & Gfroerer, after the recognition of the pregnancy state, the rates of consumption of illicit drugs decreased from 6.4% to 2.8%, with more significant indexes of abstinence in the last quarter of pregnancy.[12] Such behavior can be extended to the population of this study, because the psychological mechanism of protection of the baby that rules it seems to be the same.

A study in Sweden on pregnant adult women[13] found that Psychiatric disorders were present in 14.1%, Depression in 10.2% and Anxiety disorders in 6.6% of patients. In non-pregnant teenagers, prevalence of Depression found in another study that took place in France[14] was 5.0%. Thus, prevalence of psychiatric disorders in teenage pregnant women in the population studied (27.6%) can be considered high and extremely alarming considering the fact that most of them had never been treated at all.

There is consistent evidence in the literature about the correlation between poverty, low education, poor social and family support, teenage pregnancy, use of drugs and psychopathology.[15] In our sample, poor education and low level of professional training may play an important role in unemployment. These factors largely contribute to this unfavorable socio-economic status, creating a situation of lack of perspectives in life. Using drugs and getting pregnant may be an attempt to change their reality and psychiatric disorders may be a reaction outcome.

Limitations

Inferences of causality cannot be accomplished because of the design of this study (cross-sectional). For the same reason, there is a risk of a recall bias.

The sample used in this research belongs to a single social class and a specific population. Generalization of the results must be carefully performed.

Some conditions like Conduct Disorders, Attention-Deficit/Hyperactivity Disorder and Oppositional Defiant Disorder were not investigated in this study, despite their importance in adolescence, because the instrument selected is not able to detect them.

Of note also, hair analysis does not determine dependence or harmful use of the illegal drug, it only detects consumption during the period analyzed.

Conclusion

This research shows socio-demographic characteristics of low-income pregnant women that live in the northern zone of São Paulo - Brazil, predominantly poor, with low educational levels and high exposure to serious life events. These factors contribute to the higher vulnerability of this population to the onset of psychiatric diseases, such as depression, anxiety, PTSD and to the use of drugs (cocaine and marijuana). Our results of prevalence of use of marijuana and cocaine during the third trimester and of psychiatric disorders during the whole pregnancy concur with the scientific evidence found in international literature about the correlation between these conditions. School dropout, to have no professional qualification, being unemployed and being part of a low-income unstructured family seem to play an important role in this negative outcome. Controlled studies, however, should be performed to properly evaluate this subject.

This complex phenomenon, which is related to a great number of economical, educational and behavioral factors, has to be tackled as an important public health issue due to the existence of many kinds of possible harm both to the mother and to the newborn. This phenomenon requires the implementation of preventive public policies in order to reduce risk behaviors.

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