REFACS

Hospitalizations due to pregnancy, childbirth and puerperium in the state of Sergipe

Internações por gravidez, parto e puerpério no estado de Sergipe

Hospitalizaciones por embarazo, parto y puerperio en el estado de Sergipe

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This is an ecological, descriptive, quantitative study, carried out in 2019, with data from the Departamento de Informática do Sistema Único de Saúde. It aims to characterize the profile of hospital admissions by age group in cases of pregnancy, childbirth and puerperium in Sergipe, Brazil, from 2013 to 2018. These represented 33% of all hospitalizations in the state, with an average cost of R$ 545.00, in women between 20 and 39 years old (48.6%), white (59.8%), character emergency care (99.6%), and more than half of these were in an ignored hospital regime (52.88%). In the case of teenage pregnancies, hospitalizations were significant (22.3%). In turn, there was a projection of decline in the younger age groups and growth in adult age groups (p <0.05). The data in this study can guide public policies and health strategies, especially in preventing teenage pregnancies.
Descriptors: Pregnancy; Parturition; Postpartum period; Hospitalization.

Este é um estudo ecológico, descritivo, quantitativo, realizado em 2019, com dados do Departamento de Informática do Sistema Único de Saúde, com o objetivo de caracterizar o perfil das internações hospitalares por faixa etária nos casos de gravidez, parto e puerpério em Sergipe no período de 2013 a 2018. As internações representaram 33% de todas as hospitalizações no estado, com custo médio R$ 545,00, em mulheres entre 20 e 39 anos (48,6%), brancas (59,8%), caráter de urgência (99,6%), e destes mais da metade em regime de internação ignorado (52,88%). No caso de gravidez em adolescentes as internações foram expressivas (22,3%). Por sua vez, houve projeção de declínio nas faixas etárias mais jovens e crescimento em grupos etários adultos (p<0,05). Os dados deste estudo podem nortear políticas públicas e estratégias de saúde, principalmente na prevenção de gravidez na adolescência.
Descritores: Gravidez; Parto; Período pós-parto; Hospitalização.

Este es un estudio ecológico, descriptivo y cuantitativo, realizado en 2019, con datos del Departamento de Informática del Sistema Único de Salud, con el objetivo de caracterizar el perfil de ingresos hospitalarios por grupo de edad en casos de embarazo, parto y puerperio en Sergipe, Brasil en el período de 2013 a 2018. Las hospitalizaciones representaron el 33% del todos los ingresos hospitalarios del estado, con un coste medio de R$ 545,00, en mujeres de entre 20 y 39 años (48,6%), blancas (59,8%), de carácter urgente (99,6%), y de éstas más de la mitad en régimen de hospitalización ignorado (52,88%). En el caso del embarazo en adolescentes las internaciones fueron expresivas (22,3%). A su vez, se observó un descenso en los grupos de edad más jóvenes y un crecimiento en los grupos de edad adultos (p<0,05). Los datos de este estudio pueden orientar las políticas públicas y las estrategias de salud, especialmente en la prevención del embarazo en la adolescencia.
Descriptores: Embarazo; Parto; Periodo posparto; Hospitalización.

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INTRODUCTION

Hospitalization generates negative repercussions on the life of pregnant or parturient women, since it leaves them prone to various vulnerabilities and concerns. Tracing the profile of hospitalizations for pregnancy, childbirth and the puerperium in a given place and period is relevant, since it makes it possible to identify indicators that represent and characterize the reality of the community[1-3].

Teenage or elderly pregnant women, from unfavorable social classes and with low educational levels are more likely to develop more serious complications during pregnancy. The main causes of hospitalization are due to complications, such as: urinary tract infection, pre-eclampsia, hypertension, premature birth and low fetal growth. These events can have undesirable consequences, such as maternal, fetal and infant morbidity and mortality[4-6].

Brazilian states have socioeconomic and socio-cultural diversity, which can directly and indirectly influence differences in the hospitalization profile. In 2016, the state of Sergipe had a Gini index of 0.544, the highest inequality between the Northeastern states. The Gini index measures inequality and its distribution, with values ranging from 0 (equality) to 1 (maximum inequality). In Sergipe, inequality increased at a much stronger rate. In contrast to the 2013/2014 biennium, in 2016, the indicator reached a value higher than that verified for Brazil (0.525) and for the Northeast Region (0.490)[7].

In the last few decades, epidemiological studies that have discussed the rates of hospitalization for pregnancy, childbirth and the puerperium in Sergipe have been scarce. The analysis of the trend patterns of this index could be a valuable public management tool, since hospital admissions at the time of delivery and the postpartum period usually cause high costs[8]. Therefore, this study aims to characterize the profile of hospital admissions by age group in cases of pregnancy, childbirth and the puerperium in Sergipe from 2013 to 2018.

METHODS

This is an ecological, descriptive and quantitative study, which data were collected through the online platform of the Departamento de Informática do Sistema Único de Saúde (DATASUS), with emphasis on the items "access to information", "health information (TABNET)", "Epidemiological and morbidity", "SUS hospital morbidity". Such information present in DATASUS belongs to the Hospital Information System of the Unified Health System (SIH/SUS)[9].

Data collection was carried out on 02/21/2019. The study database construction process was carried out, first, with the selection of all hospitalizations of women residing in Sergipe, in the period of 2013 and 2018. Then, those women from 10 to 49 years of age were selected, diagnosed in Chapter XV - Pregnancy, Childbirth and Puerperium (codes O00 to O99) - of the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).

Profile data were collected: age group, character of care and costs of hospitalizations. The data were organized in Microsoft® Office Excel spreadsheets, and the absolute and relative frequencies of the categorical variables were calculated and organized, with the data being distributed through tables.

To verify the temporal trend of hospitalizations for each age group, linear trend analysis was performed. Initially, hospital admission rates were calculated for each age group in each year:

$$\frac{\text{Number of hospitalizations of the age group of each year x 100}}{\text{Total number of hospitalizations of the age group in the period}}$$

Then, the modeling proceeded, considering the hospitalization rates for each age group as dependent variables (Y) and the years of study as independent variables (X). The identification of the temporal trend of hospitalization for each age group was made from a

graph, with the inclusion of straight linear trends and the coefficient of determination (R^2), which measures the fit of the linear regression model to the data. A significant trend was considered as one which estimated model obtained $p < 0.05$.

As this research was based on data made publicly available on electronic media, through the Ministry of Health, and due to the maintenance of secrecy and privacy about the information collected, there was no need for consideration by the Research Ethics Committee.

RESULTS

Pregnancy and childbirth represented 33% of all hospitalizations between 2013 and 2018 in the state of Sergipe. In total, there were 176,847 hospitalizations for women aged between 10 and 49 years. Each hospitalization cost an average of R$ 545.00 reais for health services.

Table 1 describes the profile of these hospitalizations between 2013 and 2018. Women aged 20 to 29 years were the majority of these cases (48.6%), followed by those aged 30 to 39 years (24.2%). It is also noted the expressive representation of teenagers among these hospitalizations (22.3%). The other age groups studied (10 to 14 years old and 40 to 49 years old) account for only 4.25% of hospitalizations caused by cases of pregnancy, childbirth and the puerperium.

As for the other aspects of the profile, emergency hospitalization was predominant (99.6%); white women (59.8%); in regards of regime of service, a considerable amount was private (39.5%) and, of these, 52.88% were unknown (Table 1).

Table 1. Profile of hospital admissions due to pregnancy, childbirth and the puerperium. Sergipe, 2019.

Variables	N	%
Age group		
10 to 14 years	2487	1.4
15 to 19 years	39374	22.3
20 to 29 years	85878	48.6
30 to 39 years	42750	24.2
40 to 49 years	4967	2.8
Unknown	1391	0.8
Type of hospitalization		
Elective	720	0.4
Emergency	176127	99.6
Self-declared race/color		
Black	3864	2.2
Brown	757	0.4
White	105821	59.8
Yellow	316	0.2
Indigenous	3	>0.1
Unknown	66086	37.4
Regime of service		
Public	13474	7.6
Private	69840	39.5
Unknown	93533	52.9
Total	**176847**	**100.0**

Source: SIH/SUS, 2019.

When analyzing the percentage of hospitalizations of each age group per year in relation to the total for each age group in the period, there is an inversion in the linear growth trend for children under 20 and over 29 years, between the years 2015 and 2016 There was a projection of a statistically significant decline ($p<0.05$) in the younger age groups, mainly between 10 and

14 years old (R^2 = 0.7804), while adult groups showed growth, especially women between 40 and 49 years old. years (R^2 = 0.8856) (Figure 1).

Figure 1. Analysis of the linear trend of hospitalizations for pregnancy, childbirth and the puerperium in different age groups. Sergipe, Brazil, 2019.
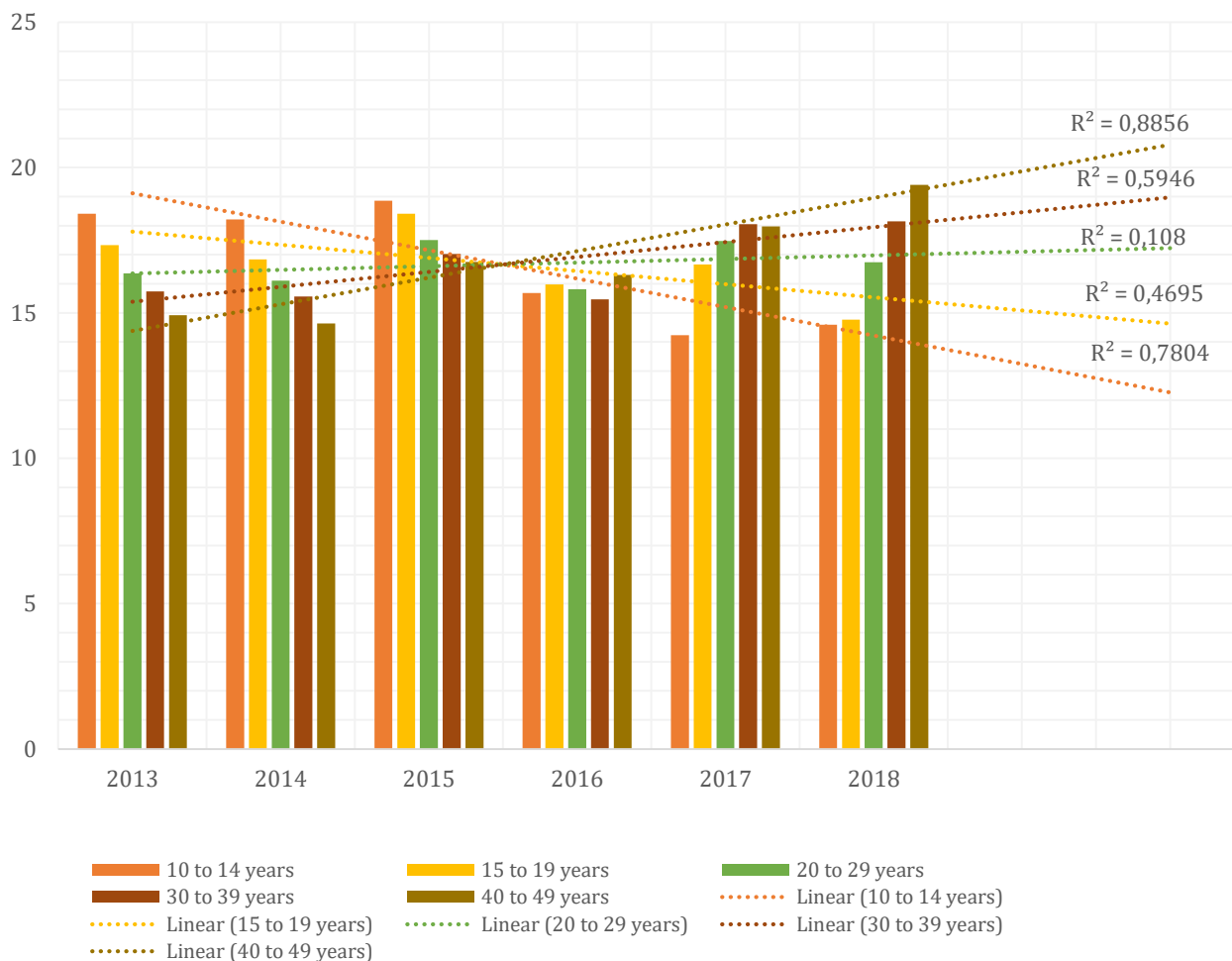
DISCUSSION

Most hospitalizations for pregnancy, childbirth and puerperium consisted of young adult female patients. This stage of life is considered the most suitable for birth, taking into account the health of women[10]. However, teenagers (15 and 19 years old) reached an expressive amount (22.3%) of the total, even though it consisted of only five years, against a decade of the other age groups, such as 20 to 29 years old.

A previous study on hospital admissions of teenagers residing in Sergipe, between 2002 and 2012, presented data that reflect the problem of teenage pregnancy. In that period, among the 149,850 hospitalizations of teenagers, 58.4% were due to pregnancy, childbirth and puerperium[11].

As for childhood pregnancy, the numbers also deserve attention. According to the present study, every year, an average of 415 girls aged 10 to 14 years needed to be hospitalized for childbirth, miscarriage or pregnancy complications between 2013 and 2018, with a total of 2487 hospitalizations during this period.

Pregnancy in children and teens is a special situation, especially among teenagers who do not have family support, running the risk of not receiving adequate prenatal care during pregnancy and consequently having a higher risk of complications in pregnancy, childbirth and even in puerperium. Childhood and teenage pregnancies offer greater social, psychological, economic and educational impacts, affecting both the mother and the baby[12-14].

Teenagers' access to essential reproductive health services is essential to avoid adverse health outcomes, including unplanned pregnancies and sexually transmitted infections (STIs), risk reduction and treatment[15]. If pregnancy in adolescence and childhood had been prevented, the state of Sergipe would have saved an average of R$ 1,913,655.29 per year. This means that the cost of this situation causes serious losses, not only on an individual basis, but also on the health system itself.

According to the United Nations Population Fund (UNFPA)[16] The cost of each teenage pregnancy in Latin America and the Caribbean reached, in 2018, the equivalent of $ 1,210 annually. Multiplied by one and a half million premature pregnancies annually, this equates to missed opportunities for young mothers and States, in excess of $ 1.8 million annually.

However, the study showed that Sergipe has been showing a statistically significant decline projection annually in the younger age groups. In a previous study, with analysis in a previous decade, this trend of decline was already happening. Between 2002 and 2012, there was a 21.1% reduction in the coefficient of hospitalizations for pregnancy, childbirth and the puerperium among adolescents[11].

The adult age groups showed a growth trend, mainly women between 40 and 49 years old. The maternal age of pregnancy has changed dramatically in recent decades due to a wide range of social and cultural determinants. The trend towards postponing pregnancy is reported worldwide, such as: USA, China, Italy and Brazil[6,17-20]. At the same time, there is also a decline in pregnancies at younger ages, so that this rate is increasingly lower in developing countries[18].

It is noteworthy the high frequency of hospitalizations (three times or more) in pregnant women in the private network (39.5% against 7.6% of the Unified Health System - SUS), however, 52.9% of cases are do not have this type identification and it is believed that a good portion of are on the public network. The color/race variable also showed incongruity. The number of notifications that ignored this variable was 10 times greater than the number of cases of the entire non-white population (brown, black, indigenous).

This must be taken into account during urgent care in the public health system, with an intensification of the importance of a complete record of the notification form, aiming at the knowledge of the epidemiological profile. Access to this information generates subsidies for the proper planning and implementation of improvement strategies for assistance to women during pregnancy[2,21,22].

CONCLUSION

Between the years 2013 to 2018 in Sergipe, there was a predominance of hospitalizations notified for pregnancy, childbirth and puerperium in white women between 20 and 39 years old, in need of emergency care and in the private network. However, there are flaws in the notification when presenting an expressive number of unknowns for some variables such as race/color and service regime.

Teenagers, aged 15 to 19, and children aged 10 to 14, came in third and fifth in the ranking of hospitalizations caused by cases of pregnancy, childbirth and puerperium. These data point to the need to revisit and strengthen municipal strategies for the prevention of teenage pregnancy.

Childhood and teenage pregnancy takes the mother away from school or is responsible for the lack of an adequate environment for the child's development. It is inferred that part of these pregnancies may be the result of sexual abuse and deserve attention from both the courts and health managers.

One of the limitations of this study is the absence of analytical inferences regarding the cause-phenomenon effect, as it is a descriptive study of an ecological character. It was an analysis based on secondary data provided by the national health information system, therefore, it is subject to biases related to data quality. Even so, the detailing of the information

made available by DATASUS has the essential function of guiding public policies and health strategies.

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CONTRIBUTIONS
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