SHORT COMMUNICATION

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Teenage pregnancy in the first year of the COVID-19 pandemic in Brazil

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INTRODUCTION

Several factors are associated with adolescent maternity, such as hindered access to public health services, greater social vulnerability, lower income, and lower education level. It has negative consequences for adolescents, including school dropout, postponement of professional training, unemployment, and financial instability[1].

In Brazil, there was a slow and gradual decrease in adolescent mothers' live births (LB) percentage and fertility rate in all regions from 2001 onward. There was a reduction of 37.2% (23.4% in 2000 to 14.7% in 2019) and 48 births per 1,000 adolescents aged 15–19 years in 2019 (in 2000, the fertility rate in the age group 15–19 years was 81/1,000). It is observed that the LB percentage is inversely proportional to the human development index (HDI), because only the Southeast and South regions presented indicators below the country's average (38.2 and 39‰, respectively)[2]. However, the numbers of adolescent pregnancy are still very high in relation to developed countries, and there is great regional inequality within the country.

The COVID-19 pandemic caused unprecedented harm worldwide, with social, economic, cultural, and educational impacts, also on individual and community health. Recent projections of the United Nations Population Fund/United Nations Children's Fund (UNFPA/UNICEF) show that the impact of the COVID-19 pandemic could result in over 13 million child marriages, as well as 7 million unplanned pregnancies and 31 million cases of gender-based violence between 2020 and 2030[3]. In the first 3 months of social distancing, the reported increase in early pregnancy in Krachi, Gana, was nine times[4].

Several factors contributed to these projections, such as the closing of schools, greater hindrances for adolescents to access health services, turn of attention of health to COVID-19 hospitalization and treatment, and the lack of contraceptive availability. All of these factors could lead to an increase in unplanned pregnancies in this age group[5].

Regional inequality in Brazil in the cultural, social, religious, educational, and public health aspects raised the interest in studying the impact of the COVID-19 pandemic on the adolescent population. Thus, the objective of this study was to evaluate the behavior of adolescent pregnancy in the first year of the pandemic in Brazil.

METHODS

A cross-sectional study was conducted with data obtained from the Live Births Data System (SINASC), through the server of the Informatics Department of the Unified Health System (DATASUS) of the Brazilian Health Ministry, with the purpose of gathering epidemiological data on informed births in the national territory[6]. The form of declaration of live birth

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(DNV) is a document with 52 fields to be filled, referring to notary, place of occurrence, characteristics of mother, pregnancy, birth, neonate, identification, and data of the person responsible for filling the form. The filling of the DNV is mandatory and necessary for the civil register of the neonate. Data are collected directly from the mother and/or the clinical history. For this study, the following variables were used: birth according to the mother's place of residence, birth according to the region of the country, year of birth, and maternal age.

Data were obtained on the total number of LB per region and on age groups 10–14 and 15–19 years to calculate the LB rate among adolescent mothers[6]. The calculation of age-specific fertility rate (ASFR) per 1,000 adolescents in the same age group and same region and state was performed, using data from the Brazilian Institute of Geography and Statistics (IBGE) on population projection to estimate adolescent population[7]. In 2019, this population corresponded to 7,823,491 adolescents aged 10–14 years and 8,338,727 aged 15–19 years. In 2020, the estimate was 7,709,355 adolescents aged 10–14 years and 8,264,254 aged 15–19 years.

Relative and absolute frequencies of LB according to the mother's age group and year of occurrence were calculated. The percentage increase or decrease in the period was calculated using the expression: [(% of LB in 2020–% of LB in 2019)/% of LB in 2019]×100. Choropleth maps were used in the description of the results.

As SINASC is a public-access database, the project did not require a Research Ethics Committee review. The R-Project (version 5.4.0) and ArcGis (version 10.0.4) software were used.

RESULTS

In 2020, adolescent pregnancy in Brazil in 2020 represented 14% of total LB, which is equivalent to a reduction of 8.4% in relation to 2019. In 2020, there were born 381,653 babies of adolescent mothers, with 17,579 LB from mothers in the age group 10–14 years and 364,074 mothers in the age group 15–19 years. The calculation of age-specific fertility rate (ASFR) showed 2.3/1,000 births from mothers aged 10–14 years and 44.1/1,000 in the age group 15–19 years.

Figure 1 shows the ASFR in the age groups 10–14 and 15–19 years in each of the country's regions. It is observed that only in the Southeast and South regions the ASFR is lower than the national average.

.The distribution of ASFR per 1,000 adolescents in age groups 10–14 and 15–19 in all 27 Brazilian states is shown in Table 1 and Figure 2. In 2019, there was a reduction in adolescent pregnancy in all Brazilian regions. In the age group 10–14 years, the reduction was 9.0% in the North region, 7.7% in the Northeast region, 7.9% in the Southeast region, 6.2% in the South region, and 9.3% in the Center-West region. Among adolescents in the age group 15–19 years, the reduction was 7.9, 8.5, 8.3, 9.3, and 9.4%, respectively. In the North region, the states with higher ASFR were Roraima, Amazonas, and Acre, while in the Northeast region they were Maranhão and Alagoas. The lowest ASFR in the age group 15–19 years was in the Federal District (30.2‰), São Paulo (31.8‰), and Rio Grande do Sul (33.4‰) (Table 1 and Figure 2).

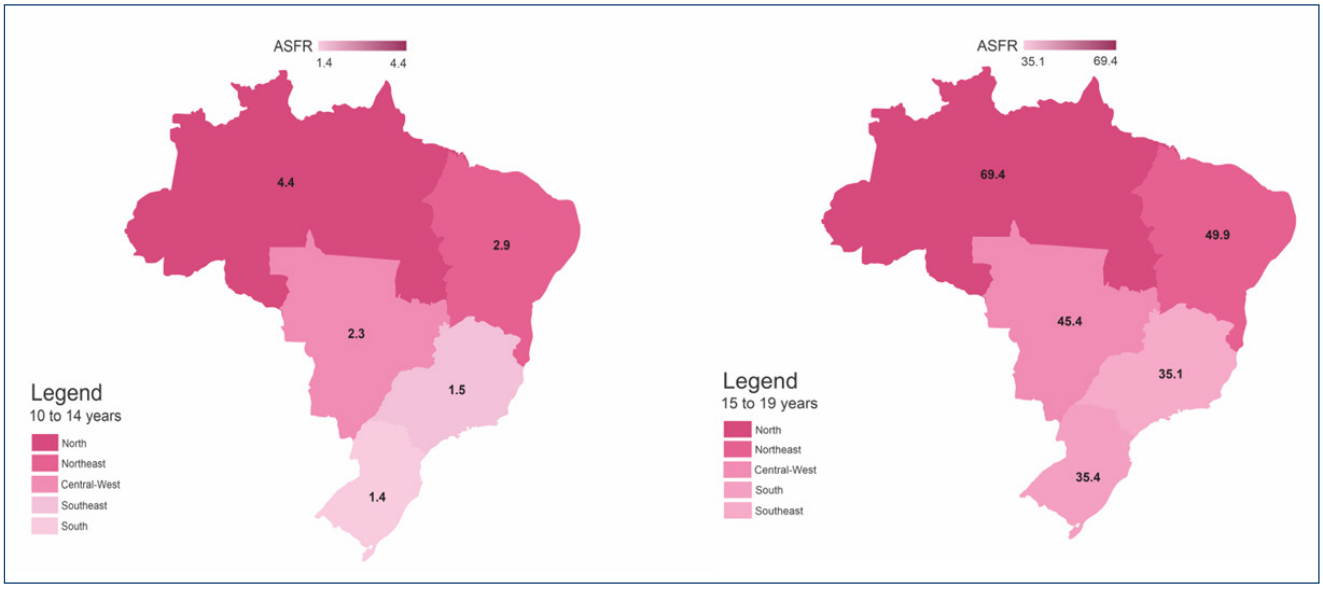

Figure 1. Distribution of age-specific fertility rate per 1,000 adolescents by region (2020). Source: DATASUS/SINASC, 2020.

DISCUSSION

The prediction was that unplanned pregnancies would have increased worldwide during the COVID-19 pandemic[3]. In South Africa, for example, the number of children born from adolescent mothers in the country's most populated province, Gauteng, increased by 60% since the start of the pandemic. The Health Department of Gauteng informed that, between April 2020 and March 2021, more than 23,000 adolescents gave birth and 934 were <14 years of age[7]. The main reasons were the lack of access to contraceptives, the possibility of having a safe

Table 1. Distribution of age-specific fertility rate (ASFR) per 1,000 adolescents by federative unit of Brazil (2019–2020).

Region	Adolescents aged 10–14 years			Adolescents aged 15–19 years		
	2019	2020	ASFR/1,000 evolution % 2019–2020	2019	2020	ASFR/1,000 evolution % 2019–2020
Brazil	**2.5**	**2.3**	**-8.0**	**48.0**	**44.1**	**-8.4**
North region	**4.8**	**4.4**	**-9.0**	**75.0**	**69.0**	**-7.9**
Rondônia	2.7	2.2	**-18.8**	55.0	49.1	**-10.7**
Acre	5.6	4.7	**-15.6**	84.6	74.5	**-11.9**
Amazonas	6.1	5.2	**-15.3**	84.6	78.8	**-6.9**
Roraima	7.3	7.2	**-1.6**	110.6	95.3	**-13.9**
Pará	4.6	4.2	**-7.4**	74.0	68.6	**-7.3**
Amapá	4.0	4.3	**7.4**	68.4	62.6	**-8.6**
Tocantins	3.4	3.7	**7.3**	59.7	56.2	**-5.9**
Northeast region	**3.1**	**2.9**	**-7.7**	**54.5**	**49.8**	**-8.5**
Maranhão	4.0	3.7	**-7.6**	72.0	64.5	**-10.4**
Piauí	3.0	3.0	**1.9**	57.4	52.1	**-9.3**
Ceará	2.7	2.7	**-1.6**	47.5	42.5	**-10.5**
Rio Grande do Norte	2.7	2.3	**-13.1**	43.7	39.7	**-9.3**
Paraíba	2.8	2.6	**-7.9**	53.2	49.2	**-7.5**
Pernambuco	2.8	2.5	**-10.3**	53.2	50.0	**-6.1**
Alagoas	3.9	3.6	**-8.0**	63.1	59.1	**-6.3**
Sergipe	3.2	3.2	**-0.6**	50.0	48.2	**-3.5**
Bahia	3.0	2.6	**-11.7**	51.0	46.5	**-9.0**
Southeast region	**1.6**	**1.5**	**-7.9**	**38.2**	**35.1**	**-8.3**
Minas Gerais	1.6	1.4	**-11.7**	38.1	34.7	**-8.7**
Espírito Santo	1.9	2.1	**10.3**	44.5	42.1	**-5.5**
Rio de Janeiro	2.3	2.1	**-7.7**	45.4	42.8	**-5.7**
São Paulo	1.3	1.2	**-8.3**	35.1	31.8	**-9.5**
South region	**1.5**	**1.4**	**-6.2**	**39.0**	**35.4**	**-9.3**
Paraná	1.8	1.6	**-10.4**	42.2	37.3	**-11.5**
Santa Catarina	1.3	1.3	**-1.0**	38.0	35.1	**-7.6**
Rio Grande do Sul	1.4	1.4	**-3.4**	36.2	33.4	**-7.7**
Center-West region	**2.6**	**2.3**	**-9.3**	**50.1**	**45.4**	**-9.4**
Mato Grosso do Sul	3.5	3.3	**-3.9**	61.6	54.0	**-12.4**
Mato Grosso	3.6	3.3	**-8.5**	64.7	59.5	**-8.1**
Goiás	2.1	1.9	**-9.8**	45.2	41.5	**-8.3**
Federal District	1.5	1.2	**-23.1**	34.4	30.2	**-12.2**

Source: DATASUS/SINASC, 2020.

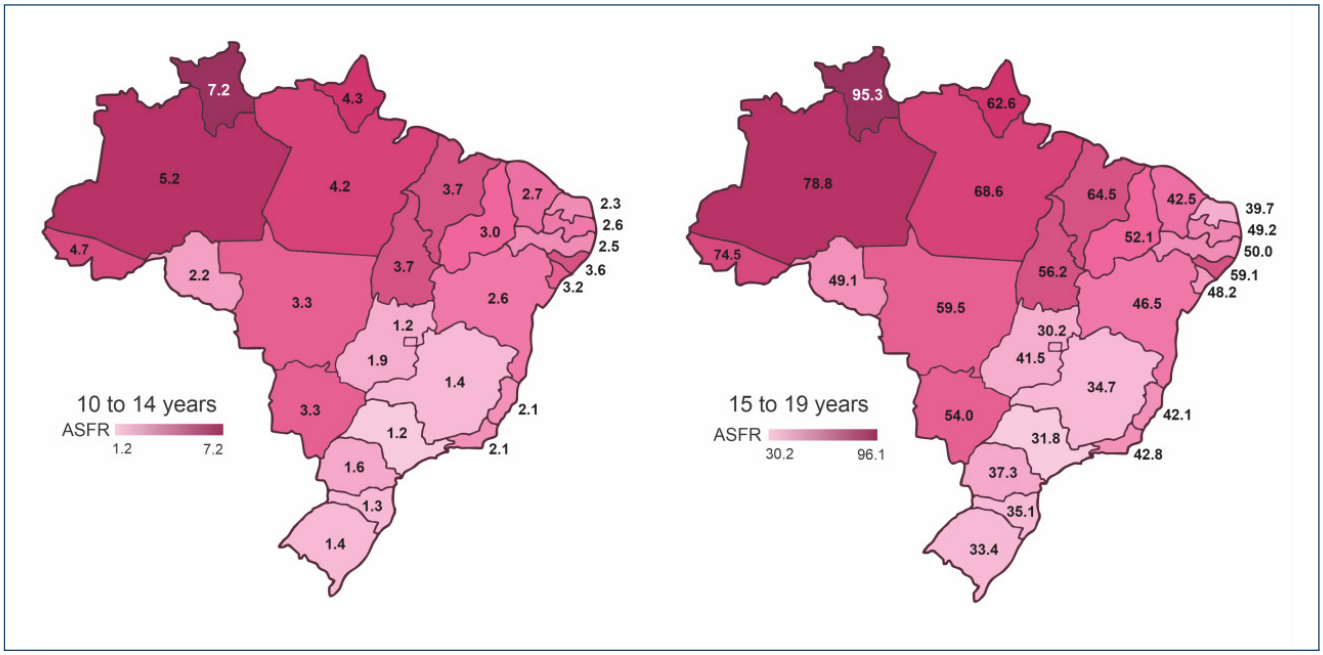

Figure 2. Map of distribution of age-specific fertility rate per 1,000 adolescents by federative units of Brazil (2020). Source: DATASUS/SINASC, 2020.

abortion, the closing of schools, and shift of healthcare attention to hospitalization and treatment of COVID-19 patients[3,7,8].

In Brazil, however, during the first year of the pandemic, there was a reduction of 8.4% in the frequency of adolescent pregnancy[5]. This reduction can be partially justified by social distancing, which made it impossible for adolescents to go to parties, social meetings, and school.

In 2020, there were 180 deaths of pregnant and puerperal adolescents, with 24 maternal deaths of adolescents caused by COVID-19[9]. Pregnant women are more vulnerable to respiratory infections, such as the one caused by COVID-19, and may develop severe symptoms that put at risk mother and baby[8]. The Ministry of Health of Brazil had been registering a decrease in deaths of pregnant and puerperal women between 2017 and 2019; however, there was an increase of approximately 25% with the start of the COVID-19 pandemic in 2020 and higher than 40% in 2021[10].

Even with the frequency of adolescent pregnancy in Brazil that has reached a reduction of 40% between 2000 and 2020, with an ASFR of 44.1/1,000 in the age group 15–19 years[6], these numbers would have to be reduced to half to be close to rates lower than 18/1,000 in North America, Europe, and a large part of Asia[11].

It is important to stress that international statistics on adolescent fertility rate refer only to the age group 15–19 years, because ASFR in the age group 10–14 years is lower than 1‰, except in Latin America and Africa[12].

According to the Pan American Health Organization (PAHO), the constant interruption of women's health services due to COVID-19 could retrocede over 20 years of advances in maternal mortality reduction and the raise of access to family planning in Latin America and the Caribbean. In the Americas, there is a highlight on socioeconomic and health impacts, with approximately 20 million women affected by the interruption of reproductive and maternal health services during the pandemic[8]. The challenges and inequalities that existed before COVID-19 have worsened during the pandemic. The protection of women's life must be a collective priority.

The closing of schools and the measures of social distancing imposed by COVID-19 had a significant impact on the lives of vulnerable adolescents in Africa because it increased 25% risk of early marriage and many girls will never return to school. Currently, early marriage and adolescent pregnancy will continue to increase in Nigeria until public policy managers conduct effective actions to reverse this unfortunate tendency[13].

In Brazil, health services continued to be provided during the social distancing period, and even with the decrease in the distribution of contraceptive methods, there has been no total interruption. It is known that the insertion of intrauterine devices (IUD) has decreased by 40% in 2020 in relation to 2019. However, the distribution of contraceptives continued, since the expenditures of the Ministry of Health with contraceptive inputs presented a reduction of only 17% in 2020[14].

As limitations of this study, we point out the fact that this research used population projection data of IBGE, containing details based on the last census conducted in Brazil in 2010, to estimate the population of adolescents[6,7].

CONCLUSION

The expected increase in pregnancies in the first year of the COVID-19 pandemic did not occur in Brazil, where there was a reduction of 8.4% in relation to 2019. The main factors that might have contributed to this reduction were social distancing, lesser exposure of adolescents to situations of risk, and the maintenance of healthcare services with the distribution of contraceptives.

ETHICAL ASPECTS

SINASC is a public-access database, it did not require a Research Ethics Committee review.

AUTHORS' CONTRIBUTIONS

DLMM: Conceptualization, Data curation, Investigation, Formal Analysis, Methodology, Writing – original draft, Writing – review & editing. **ADT:** Conceptualization, Writing – original draft, Writing – review & editing. **NCPR:** Conceptualization, Data curation, Investigation, Formal Analysis, Methodology. **MSCM:** Methodology, Investigation, Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. **IPM:** Data curation, Formal Analysis, Writing – review & editing. **ZVB:** Data curation, Investigation, Formal Analysis, Writing – original draft, Writing – review & editing. **FAS:** Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. **MFBR:** Data curation, Investigation, Formal Analysis, Writing – original draft, Writing – review & editing.

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