Adolescent pregnancy trends in the last decade

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http://dx.doi.org/10.1590/1806-9282.65.9.1209

DATE OF SUBMISSION: 30-Apr-2019
DATE OF ACCEPTANCE: 08-May-2019
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INTRODUCTION

Worldwide, approximately 16 million girls aged between 15 and 19 years and 2 million girls younger than 15 years have children each year, with a higher frequency of live births (LB) from adolescent mothers in developing countries. Over half of the women in Africa and around one third in Latin America and the Caribbean will give birth before they are 20 years old. In Brasil, approximately one in every five Brazilian women has their first child before the age of
The study included all women who had an LB in the years 2006 to 2015 in Brasil. We sought data on the total number of LB per region, as well as in the age ranges of 10-14 and 15-19 years, to calculate the percentage of LB from adolescent mothers. We excluded from the total of LB those whose mother’s age was not reported (1,048 LB between 2006-2011 and 282 LB between 2012-2015). We also analyzed the association between the frequency of adolescence pregnancy and the Human Development Index (HDI) of each region, which is a summarized measurement of progress in the long term, using three basic dimensions: income, education, and health.

Relative and absolute frequencies of the number of LB according to the mother’s age and year of occurrence were calculated. Increases or reductions in the percentages from 2006-2015 were calculated using the formula:

\[
\frac{\text{LB from 2015} - \text{LB from 2006}}{\text{LB from 2006}} \times 100
\]

The age-specific fertility rate (ASFR) represents the average number of children born alive a woman of a specific age and of a specific area has had in the year considered. The rate may be presented per group of 1,000 women for each age group. The ASFR was calculated by dividing the total number of LB from mothers aged between 10-14 years and 15-19 years by the total resident population of adolescents of this age, multiplied by 1000.

Since the database used is of public domain, it was not necessary to submit the project for approval by our institution’s Research Ethics Committee.
for the age group between 15-19 years had a reduction from 70.9/1,000 in 2006 to 61.8% in 2015 (Table 2). The reduction in the number of LB from mothers aged between 15-19 years was 14.0%, while among those aged between 10-14 years, it was only 3% (Table 3).

After analyzing the regions of the country separately regarding these ten years, we found that the number of LB from mothers aged between 10 and 14 years increased in the Northern Region (5.0%), while in other Brazilian regions, it decreased (2.0% in the Northeast; 8.0% in the Central-West; 3.0% in the Southeast; and 18.0% in the South). The number of LB among mothers aged between 15-19 years decreased in all Brazilian regions (9.0% in the North; 18.0% in the Northeast; 11.0% in the Central-West; 12.0% in the Southeast, and 14.0% in the South) (Table 3).

After analyzing the last HDI record available, we found that the regions that have the highest HDI are the Southeast, South, and Central-West, with HDIs between 0.75 to 0.76, while the North and Northeast have HDIs between 0.65 and 0.66. The regions that have the highest HDI in the country were the ones with the lowest percentage of LB from adolescent mothers, while the regions with the lowest HDI had the highest percentages of LB from adolescent mothers. The Northeast had the lowest percentage of reduc-

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**TABLE 1. DISTRIBUTION OF LIVE BIRTHS (LB) ACCORDING TO THE MOTHER’S AGE AND PERCENTAGE VARIATION IN THE RATE OF ADOLESCENT PREGNANCY (AP) FROM 2006 TO 2015.**

<table>
<thead>
<tr>
<th>Year</th>
<th>10 to 14 years</th>
<th>15 to 19 years</th>
<th>Total of LB from adolescents</th>
<th>Total of LB</th>
<th>Freq % AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>27,610</td>
<td>605,270</td>
<td>632,880</td>
<td>2,944,928</td>
<td>21.5</td>
</tr>
<tr>
<td>2007</td>
<td>27,963</td>
<td>582,409</td>
<td>610,372</td>
<td>2,891,328</td>
<td>21.1</td>
</tr>
<tr>
<td>2008</td>
<td>28,678</td>
<td>570,560</td>
<td>599,238</td>
<td>2,934,828</td>
<td>20.4</td>
</tr>
<tr>
<td>2009</td>
<td>27,807</td>
<td>546,959</td>
<td>574,766</td>
<td>2,881,581</td>
<td>19.9</td>
</tr>
<tr>
<td>2010</td>
<td>27,049</td>
<td>525,581</td>
<td>552,630</td>
<td>2,861,868</td>
<td>19.3</td>
</tr>
<tr>
<td>2011</td>
<td>27,785</td>
<td>533,103</td>
<td>560,888</td>
<td>2,913,160</td>
<td>19.3</td>
</tr>
<tr>
<td>2012</td>
<td>28,236</td>
<td>531,909</td>
<td>560,145</td>
<td>2,905,789</td>
<td>19.3</td>
</tr>
<tr>
<td>2013</td>
<td>27,989</td>
<td>532,002</td>
<td>529,991</td>
<td>2,904,027</td>
<td>19.3</td>
</tr>
<tr>
<td>2014</td>
<td>28,244</td>
<td>534,364</td>
<td>562,608</td>
<td>2,979,259</td>
<td>18.9</td>
</tr>
<tr>
<td>2015</td>
<td>26,700</td>
<td>520,864</td>
<td>547,564</td>
<td>2,917,668</td>
<td>18.1</td>
</tr>
<tr>
<td>Total</td>
<td>278,061</td>
<td>5,483,021</td>
<td>5,761,082</td>
<td>29,234,436</td>
<td></td>
</tr>
</tbody>
</table>

Source: MS/SVS/Dasis - Information System on Live Births - SINASC.

**TABLE 2. AGE-SPECIFIC FERTILITY RATE PER AGE GROUP (10-14 AND 15-19 YEARS) TOTAL LB FROM MOTHERS AGED BETWEEN 10-14 YEARS AND 15-19 YEARS/TOTAL POPULATION RESIDENT ADOLESCENTS, FROM THESE GROUPS, MULTIPLIED BY 1,000.**

<table>
<thead>
<tr>
<th>Year</th>
<th>10 to 14 years</th>
<th>Adolescent population</th>
<th>ASFR/1,000 adel</th>
<th>15 to 19 years</th>
<th>Adolescent population</th>
<th>ASFR/1,000 adel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>27,610</td>
<td>8,462,615</td>
<td>3.26</td>
<td>605,270</td>
<td>8,337,516</td>
<td>70.90</td>
</tr>
<tr>
<td>2007</td>
<td>27,963</td>
<td>8,455,516</td>
<td>3.31</td>
<td>582,409</td>
<td>8,301,358</td>
<td>68.51</td>
</tr>
<tr>
<td>2008</td>
<td>28,678</td>
<td>8,451,680</td>
<td>3.39</td>
<td>570,560</td>
<td>8,482,441</td>
<td>67.26</td>
</tr>
<tr>
<td>2009</td>
<td>27,807</td>
<td>8,449,676</td>
<td>3.29</td>
<td>546,959</td>
<td>8,469,621</td>
<td>64.58</td>
</tr>
<tr>
<td>2010</td>
<td>27,049</td>
<td>8,444,955</td>
<td>3.20</td>
<td>525,581</td>
<td>8,456,048</td>
<td>62.15</td>
</tr>
<tr>
<td>2011</td>
<td>27,785</td>
<td>8,453,733</td>
<td>3.29</td>
<td>533,103</td>
<td>8,445,364</td>
<td>63.12</td>
</tr>
<tr>
<td>2012</td>
<td>28,236</td>
<td>8,441,389</td>
<td>3.34</td>
<td>531,909</td>
<td>8,438,804</td>
<td>63.03</td>
</tr>
<tr>
<td>2013</td>
<td>27,989</td>
<td>8,407,297</td>
<td>3.33</td>
<td>532,002</td>
<td>8,435,542</td>
<td>63.07</td>
</tr>
<tr>
<td>2014</td>
<td>28,244</td>
<td>8,351,718</td>
<td>3.38</td>
<td>534,364</td>
<td>8,434,160</td>
<td>63.36</td>
</tr>
<tr>
<td>2015</td>
<td>26,700</td>
<td>8,276,024</td>
<td>3.23</td>
<td>520,864</td>
<td>8,430,077</td>
<td>61.79</td>
</tr>
<tr>
<td>Total</td>
<td>278,061</td>
<td>84,194,093</td>
<td>3.30</td>
<td>5,483,021</td>
<td>84,630,931</td>
<td>64.79</td>
</tr>
</tbody>
</table>

tion in the age group between 10-14 years, while in the North there was an increase in the percentage of LB from adolescents aged between 10-14 years (Figure 1).

**DISCUSSION**

The present study shows a tendency of reduction of teenage pregnancy over the decade studied. Its prevalence decreased between 2006-2010 and remained stable until 2014. A new reduction in 2015 may have been driven by the expansion of the Family Health Program and an increased access to contraceptive methods. Another explanation may be related to the country’s demographic transition, with the reduction of the adolescent population and increase of the population over 60 years old or older.

The study found a decrease of LB from adolescent mothers in Brazil caused by a reduction in the number of LB from mothers aged between 15 and 19 years old. However, it also found a slight increase in births in the age group younger than 15 years old, over the period studied.

According to the IBGE, Brazil had a sharp drop in the total number of live births between 2000-2001, 2005-2006, 2008-2009, and 2015-2016. Between 2009 and 2013, births remained at the same level, with an increase of 2.5% and 1.5%, on average, in 2014 and 2015, respectively. The behavior of the total number of LB followed a reduction trend similar to that of the group of adolescent mothers, except in 2015. The North and Northeast had the greatest drop in the Total Fertility Rate (TFR) between 2000-2015. The drop was caused by the reduction of the TFR among women aged between 15-29 years old. It is estimated that the average TFR of the Northern region reached, in 2015, 2.1 children per woman, which corresponds to the limit that ensures the population replacement level. This same figure was reached in the Northeast in 2004, and at the beginning of the 2000s in other regions. In the Northeast, there was aging in the fertility pattern because, in recent years, it has become evident the increased participation in fertility by women aged 30-34 years and a reduction by the age group between 15-24 years in the total fecundity. The Southeast and South regions had fewer variations in the TFR, with slight drops or increases over the period, characterizing a postponement of pregnancy from 15-24 years to 30-39 years.

Although the Brazilian TFR is already low, teenage pregnancy is still quite high. In Brazil, in 2015, the TFR was 1.72 children per woman, placing the country at the 158th position among countries with the highest fertility rate. In the United States of America (USA), in 2015, the fertility rate was 62.5/1,000 women aged between 15 and 44 years, and the TFR was 1.84 births/1,000 women.

This study shows that, in Brazil, in 2015, there were 547,564 LB from adolescent mothers. In the US, in the same year, the overall rate of LB reached a historic low of 22.3 births for every 1,000 adolescents aged between 15-19 years old, a reduction of more than 60% since 1991, totaling 229,715 LB from adoles-
cent mothers.\textsuperscript{2,4} According to the WHO, in Brasil, that figure is 68.4/1,000 adolescents aged between 15-19 years old, higher than the Latin American average. Venezuela occupies the first position, with 80.9/1,000, followed by Ecuador with 77.3/1,000, Bolivia with 72.6/1,000, and then the United States.\textsuperscript{4,13} France has the lowest rates, with seven pregnancies per thousand teenagers.\textsuperscript{4} The results of this study indicate that, in Brasil, the ASFR for the age group between 15-19 years old dropped to 61.8/1,000 teenagers in 2015. The global rate of births among adolescents decreased from 65 births per 1,000 in 1990 to 47 in 2015.\textsuperscript{4} In Brasil, it remains high even with the reduction of births among adolescents aged between 15 and 19 years. What is most worrying is the stabilization tendency among the age group between 10-14 years old.\textsuperscript{3,6}

The data presented represent only the total number of births among adolescent mothers, not the totality of teenage pregnancy cases, since it is not possible to quantify the number of abortions and stillbirths, which is a limitation of the study. Another limitation was the proportion of mothers whose age was not recorded because it could include adolescents. Therefore, the data may be underestimated and might not reflect the actual frequency of teenage pregnancy in Brasil. However, the reduction in the number of mothers whose age was not reported indicates an improvement in the quality of data collection by SINASC.\textsuperscript{12}

Despite the reduction in fertility rates in Latin America and the Caribbean in recent years, among ad-
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In Brasil, over the past ten years, the fertility of adolescents aged between 15 and 19 years dropped about 18.6%. Nevertheless, the participation of this group in total fertility remained high. In Rio Grande do Sul, in 1999, the fertility rate was 20.2% and 17.4% in 2008, with a reduction of 50 thousand births over this period. However, this is not the reality of the entire country, considering the results of this study in relation to mothers aged between 10-14 years.

A previous study by our research group has confirmed the decrease in the percentage of live births from mothers aged between 10-19 years old in Brazil, from 23.5% in 2000 to 19.3% in 2011, and the reduction of the number of mothers whose aged is ignored, especially after 2005. The reduction in the number of LB was observed in all Brazilian macroregions among mothers aged between 15-19 years old, but there was an increase among mothers younger than 15 years old in the North and Northeast regions (12.5% and 13.4%, respectively). The present study shows that in the North, the situation is now changing since there was a slight reduction in the rate of births from younger mothers. This is the first study to show this important result.

The literature, when describing data on teenage pregnancy, most often refers to the age range between 15-19 years old. The relationship between adolescence pregnancy and social, educational, economic, and cultural factors indicate a decision to postpone the age of the pregnancy. Income inequality, underemployment, and low levels of formal education contribute to the increase in its incidence. This study confirms that Brazilian regions with higher HDI (South, Southeast, and Central-West) have lower rates of LB from adolescent mothers, which could be considered as a possible marker of development. The exception was the Northeast, where births from women aged 15-19 years had a greater reduction than expected since this is the region with the lowest HDI. Duarte et al. compared adolescents who lived in four areas with different degrees of social exclusion in Santo André (SP). Formal education had a statistically significant relationship with poorer areas, which accounted for a higher number of adolescents with less schooling. In addition, 76.8% of babies with low birth weight and a higher rate of fertility were found in poorer areas of the city.

Pregnancy can take different meanings from the teenager’s perspective. Therefore, it is important to emphasize that intentional pregnancy at a young age can be seen as a life project by the adolescent. Pregnancy at a young age may represent a search for autonomy and responsibility, as well as a source of satisfaction and a new identity with the role of a mother. Pregnancy can be seen as a way to mark their space in the family and be acknowledged by friends and family. When there is support by the family and partner, proper prenatal care, and continuation of the studies, a planned pregnancy at a young age can be a positive event.

Thus, although the statistics show a slight decline in their frequency, it is important to highlight the strategies for addressing the problem, so that the adolescence pregnancy can be a decision and not the consequence of the lack of public policies targeted at adolescents.

RESUMO

INTRODUÇÃO: A gravidez na adolescência é fenômeno universal, com maior prevalência nos países em desenvolvimento. Embora venha apresentando redução desde 2000 no Brasil, a taxa de fecundidade específica para essa faixa etária permanece elevada.

OBJETIVO: Avaliar a frequência da gravidez na adolescência no Brasil, no período de 2006 a 2015, e a associação com o Índice de Desenvolvimento Humano (IDH).

MÉTODO: Estudo epidemiológico, descritivo, realizado por busca no banco de dados no Departamento de Informática do Sistema Único de Saúde (Datanus), utilizando informações do Sistema de Informação sobre Nascidos Vivos (Sinasc) sobre as cinco regiões brasileiras.

RESULTADOS: Ocorreu queda percentual de nascidos vivos (NV) de mães adolescentes (10 a 19 anos) no Brasil de 13,5% nos últimos dez anos. Essa redução foi notada em todas as regiões brasileiras, entre mães de 15 e 19 anos. O número de NV aumentou 5,0% entre aquelas de 10 a 14 anos na Região Norte e foi reduzido nas demais regiões, sendo maior no Sul (18,0%). A taxa de fecundidade específica de 15-19 anos diminuiu de 70,9/1.000 para 61,8/1.000 no período. A proporção de NV se associa inversamente ao IDH, exceto no Nordeste, onde ocorreu importante redução (18,0%) entre as mães de 15-19 anos e de 2% entre 10-14 anos.

CONCLUSÃO: A gravidez na adolescência no Brasil encontra-se em lento declínio, especialmente entre 10-14 anos, e está inversamente associado ao IDH, exceto no Nordeste.

REFERENCES


