Increasing Adolescent and Youth Fertility in Brazil:

A New Trend or a One-Time Event?

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Abstract

The objective of this paper is to analyze the increase in fertility rates among adolescents and young women in Brazil over the last decade by using census data, household survey data, and administrative records in order to determine the scenario where this increase took place and to hypothesize about the trends for the next decade. The results show an increase in the fertility of adolescents, or youth, defined as the population aged 15-19, while age-specific fertility rates for all other groups have fallen. The 2000 census data show that the greatest increases occurred among the least-educated women, the poorest, and those living in urban areas. Although the trends of increase seem to have since reversed, the results indicate that the public health system should nevertheless be attentive to adolescent fertility, since the increase was much higher among the poorest, and their fertility levels remain high.

Introduction

The results of the most recent census in Brazil (2000) show an increase in the fertility of adolescents, or youth, defined as the population aged 15-19,[1] while age-specific fertility rates for all other age groups decreased, reversing a trend observed at least over the last three or four decades. To summarize, during the process of change in fertility levels in Brazil, age-specific fertility rates decreased consistently for all age groups in the reproductive span, with the older age groups showing higher decreases and with a concentration of fertility at younger ages (Gupta and Leite, 1999). During the 1990s, besides this component of lower fertility at older ages, the process of concentration of fertility at younger ages included a new component due to the increase of fertility rates in adolescent and young women.

High fertility rates at early ages have been a concern during recent decades in Latin America, not because they have been rising, but because in most countries they have remained at almost the same level, while falling in other parts of the world. This trend gave Latin America, including Brazil, median-to-high fertility rates at younger ages compared to those seen in developed and even other developing nations. According to Villareal (1998), in Latin America, only Cuba, Uruguay and Argentina, where fertility rates began changing before they

[1] Although there is considerable debate in the literature about the meaning and definition of adolescence in contemporary society, we adopt this term based only on its age component, due to limitations in data and methods.

did in other countries in the region, evidenced an increase in adolescent and youth fertility from 1950 to 1990. Other countries have seen lower fertility rates since 1950, in direct association with their stages of demographic transition. Other regions in the world seem to have shown very different patterns and much less clear association with other demographic events. As Villareal stated:

> The only characteristic common to most countries seems to be that the pattern and evolution of fertility among the 15-19 year olds is clearly different from that of other age groups. While fertility has decreased in a more or less smooth way, responding to social and economic development in groups over 20, the fertility behavior of the 15-19 year olds is unique, seems to respond more to cultural, social and psychological factors, and has shown resilience to overall socio-economic development. Moreover, this indicates that reproductive health programmes have failed to effectively reach this age group (Villarreal, 1998, p. 10).

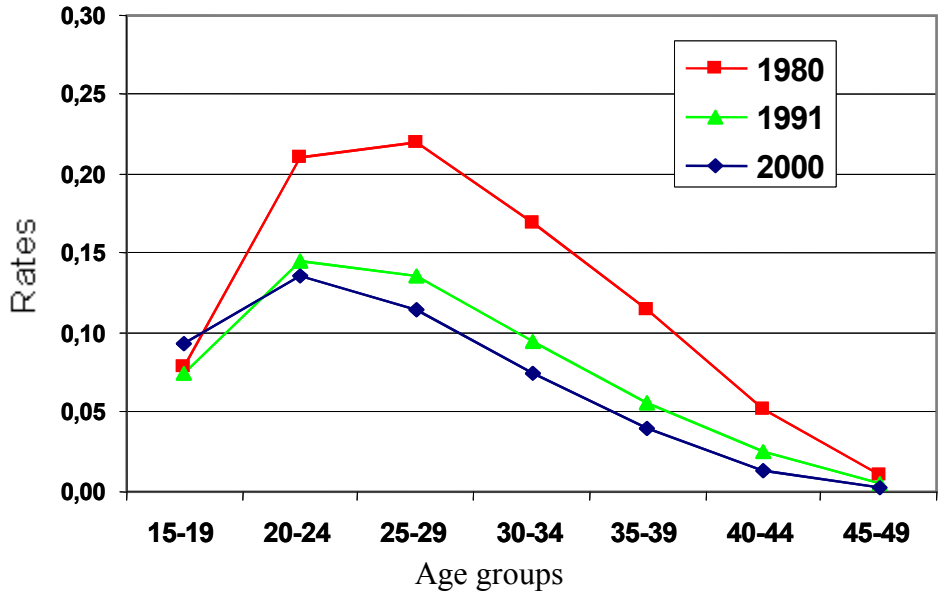
Within such a seemingly regular pattern of adolescent fertility in Latin America, Brazil has shown certain particularities that deserve attention and will thus be gone into in this paper. The objectives here are threefold. First we will analyze the increase in fertility rates among adolescent and young women in Brazil during the last decade, based on census data, to investigate if this event occurred with the same intensity across all regions and social strata. Second, by utilizing data approximation we investigate the extent of the possible negative consequences of early childbearing in Brazil by looking at the chances of school dropout for adolescents and young women. Finally, based on household survey data and administrative data on births, we hypothesize as to the trends in adolescent fertility in the country over the next decade.

1. Fertility concentration at early ages

Brazilian fertility rates decreased from 6.3 to 2.4 children per woman between 1960 and 2000. Previous studies indicate that more than half of the population is already below replacement rates and only a small segment of the population shows fertility rates above five children per woman (Berquó and Cavenaghi, 2004). Besides this sharp decline, another important feature shown by the censuses was the concentration of fertility at early ages, a characteristic often present in populations with fertility control by termination (in Brazil mostly through female sterilization). In the 1990s the intensification of the concentration of fertility rates at younger ages in Brazil continued, though much less intensely than during the previous decade. Graph 1.1 presents the fertility schedules for the last three censuses and shows that during the 1980's women aged 25-29 had the highest average number of children

among all age groups, and that the first shift in the fertility mode to lower ages took place during the 1990s.

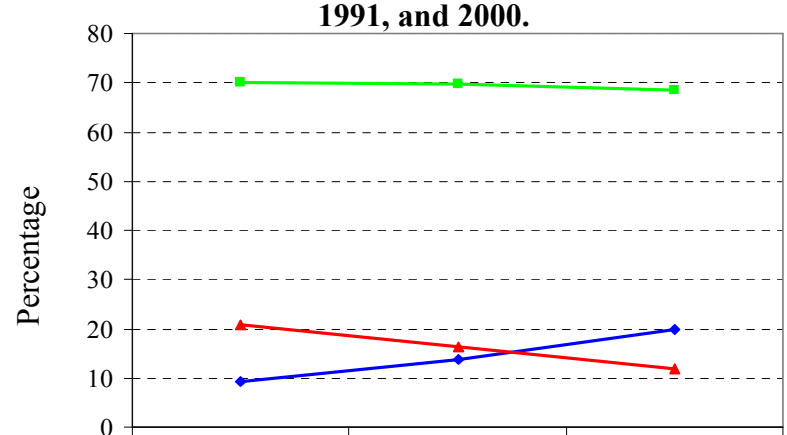
Graph 1.1
Age-specific fertility rates (adjusted by P/F method), Brazil, 1980, 1991, and 2000.



Source: IBGE, Demographic Censuses of 1980, 1991, and 2000.

Due to the decline in specific fertility rates at older ages in the reproductive cycle and the increase in fertility of the younger age groups, there was an increase in the relative weight of the younger age groups in the calculation of the total fertility rate. The relative weight of the fertility rate of women aged 15-19 rose from 9% in 1980 to 14% in 1991 and to 20% in 2000. That is, the mothers of 20% of all children born in 2000 were in the 15-19 age bracket. This fertility pattern is very distinct from those seen in countries with low total fertility rates, where the number of children that women have is more evenly spaced out during their reproductive lives, or where the women begin having children at older ages. The trends in the concentration of fertility over the last 30 years can be seen more clearly in Graph 1.2, where women are aggregated into three age groups: 15-19, 20-34, and 35 and over. It illustrates that the youngest group is the only one that presents an increase in the percentage of current fertility; women in the middle of their reproductive life, responsible for the majority of births, already showed signs of decline in this percentage; and women aged 35 or over fell considerably in the relative weight of current fertility rates from 1980 to 2000, completely inverting their relative position in comparison with the youngest age group.

Graph 1.2
Distribution of current age-specific fertility rates according to age groups, Brazil, 1980, 1991, and 2000.



	1980	1991	2000
15-19	9.23	13.92	19.76
20-34	70.05	69.82	68.46
35+	20.72	16.26	11.78

Source: IBGE, Demographic Censuses of 1980, 1991, and 2000.

This pattern of high fertility concentrated at younger ages, together with the preference for having very few children, represent a long period of exposure to and high risks of unwanted pregnancies for most Brazilian women. This fact leads couples to search for more effective contraceptive methods. Technological changes in the medical areas and, especially, changes in gender relationships regarding shared responsibility between men and women for reproduction and its regulation, must be taken into account in order to lighten the burden for women, especially those in younger age brackets.

2. Fertility among Adolescents and Youth in 1991 and 2000

While fertility has decreased in all other age groups over the last 10 years following the path of the general transition in fertility, young women between the ages of 15 and 19 were the exception for the first time, having increased about 25% in their age-specific fertility rate between 1991 and 2000 (Table 2.1). The size of this increase can be questioned, but not the fact that the increase itself was real. If we compare data from 2000 with that from 1980 we find an increase of 18% between these two censuses (see Graph 1.1). As we saw in the first section, this trend can be seen in many countries with different momentum and on different grounds. In a country as large as Brazil and, especially, with severe socio-economic

differences and very skewed income distribution, it can be assumed that this increase was not uniform in all regions and social classes.

Table 2.1
Variations in age specific fertility rates by age, Brazil, 1991, and 2000.

Age Groups	1991	2000	Variation (%)
15-19	0.0748	0.0938	25.4
20-24	0.1450	0.1356	-6.5
25-29	0.1357	0.1145	-15.6
30-34	0.0943	0.0748	-20.7
35-39	0.0561	0.0404	-28.0
40-44	0.0254	0.0134	-47.4
45-49	0.0059	0.0022	-63.3

Source: IBGE, Demographic Censuses of 1991 and 2000.

In table 2.2 we can see that age-specific fertility rates in urban areas rose (28.8%) more than in rural areas (25.2%), and that the existing significant differences in level still prevail, with rural adolescent fertility being 44.3% higher than that in urban areas. In 1991 there were 67.7 births for each 1000 women aged 15-19 in urban areas and more than 100 in the rural areas. Ten years later, the contrast between city and country was 87.2 and 125.9 births per 1000 women, respectively. It is also worth noting that urbanization during the period represented a considerable increase in the number of women living in the cities and a great decline in the rural areas.[2]

From the regional point of view (Table 2.2), the data show that the relative position among regions did not change during the decade in terms of fertility rates among adolescents and youth. The Northern Region presented the highest rates and the Southeast Region, the lowest, almost half of the former (125 and 60 per 1000, respectively). It should also be noted that increases during the decade were higher where levels were lower at the beginning of the decade (North and Central-West, with 16.1% and 18.3% increase, respectively). The rates in the Southeast showed the highest increase, 26.9%, and the Northeast and Southern Regions presented an intermediate rise of about 23%.

[2] In 1991 there were almost 2 million women aged 15-19 living in rural areas and this figure fell to 1.6 million in 2000. On the contrary, in urban areas there were 6.3 million in 1991 and 7 million in 2000.

Table 2.2
Age-specific fertility rates (per 1000) for women aged 15-19, according to place of residence and to the five large regions in Brazil, 1991, and 2000.

Place of residence and Region	Rates (in 1000)		Increase
	1991	2000	(%)
Total	74.8	93.8	25.4
Urban	67.7	87.2	28.8
Rural	100.5	125.9	25.2
Region			
North	124,8	145,0	16,1
Center-West	90,6	107,1	18,3
Northeast	87,1	107,3	23,2
South	66,9	82,6	23,5
Southeast	60,0	76,2	26,9

Source: IBGE, Demographic Censuses of 1991 and 2000.

In order to determine the influences that the social and economic conditions of young women had on their fertility level we created three groups based on income per capita and years of schooling. The first group consists of women living under the worst socio-economic conditions, that is, those in households with per-capita income equivalent to ¼ of the minimum monthly wage and who had completed up to three years of schooling. The second group corresponds to those in households earning per-capita monthly incomes between 1 and 2 times the minimum wage and had completed between 4 and 7 years of schooling (not having finished the basic 8-year primary school). Finally, the third group includes women who are better off, living in families earning 5 or more minimum wages per capita and having had 9 years or more of schooling.

As can be seen in Table 2.3, the age-specific fertility rates for 1991 are 144.3, 62.4 and 21.4 births per 1000 women aged 15-19 respectively, for the first, second and third groups described above, show the important role that material living conditions and school level plays in adolescent and youth fertility levels. The impact of social exclusion on fertility levels can also be seen clearly in the data from the year 2000. The values obtained for the three groups, in the same order, were 222.5, 99.3 and 21.6 births per 1000 women. Regarding the trends in the decade, the two first groups differed virtually not at all, and showed increases of over 50% in their rates. The third group – with higher income rates and higher schooling – was the exception, where fertility rates stayed low and almost invariable during the decade.

We will see in Section 3 that education is one of the differentiating factors in a young woman's chances of becoming a mother. Also, better access by less excluded sectors of

society to information and to health services that provide means for planned pregnancies, explains the differences seen in fertility rates across socio-economic classes. Moreover, it cannot be forgotten that this group has much better access to safer induced abortions, practiced by some physicians although illegal everywhere in the country.[3]

By incorporating one further element into the analysis of the chain of social exclusion in the country, namely, the color/race[4] factor, we can see in Table 2.2 that in the first group, the non-white women show higher fertility rates, and even a greater increase during the last decade. In spite of the enormous differences in fertility levels between the first and second groups described above, which is also valid for both whites non-whites, the non-whites showed the greatest increase in rate (7.0%), that is, ten times higher than that of the white women (0.7%). The racial discrimination that still prevails in our country can explain in part why the increase occurred among the non-whites in the third group, if this increase in fertility among youth is not only due to free choice of early pregnancy.

Table 2.3
Age-specific fertility rates (per 1000) for women aged 15-19, according to monthly per-capita household income, years of schooling and color/race, Brazil, 1991 and 2000

Socio-Economic Condition	Rates (in 1000)		Increase
	1991	2000	(%)
No Income up to 1/4 minimal wage per capita			
0-3 years of schooling			
Total	144.3	222.5	54.2
White	140.5	215.5	53.3
Non-White	145.6	225.7	55.0
1-2 minimal wage per capita			
4-7 years of schooling			
Total	62.4	99.3	59.2
White	62.6	101.9	62.7
Non-White	62.2	96.0	54.3
5 or more minimal wage per capita			
9 or more years of schooling			
Total	21.4	21.6	1.3
White	21.0	21.1	0.7
Non-White	24.9	26.6	7.0

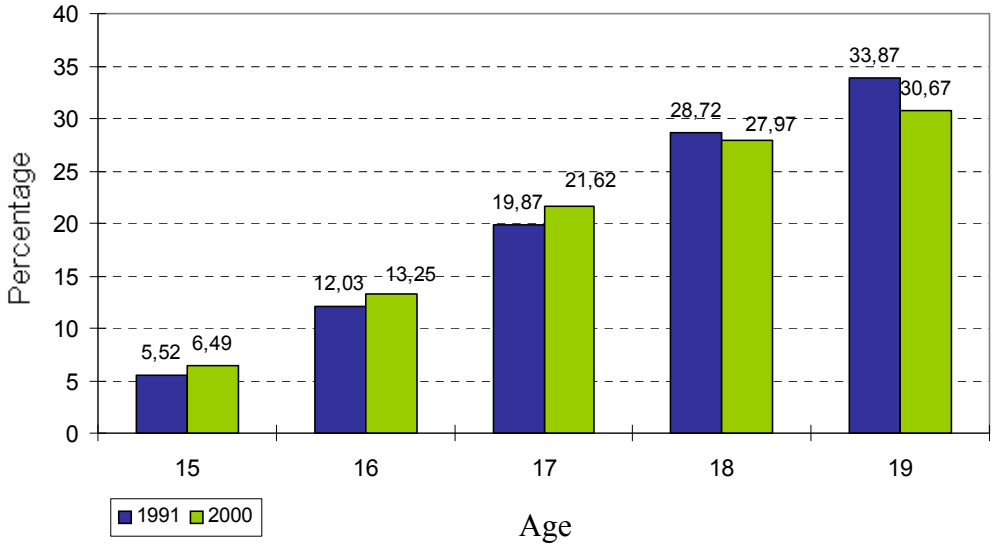
Source: IBGE, Demographic Censuses of 1991 and 2000.

[3] Crude estimates of abortions performed on women aged 15-19 in Brazil indicate a rate of about 32 per 1000 births, per year.

[4] The variable used in Brazil as a proxy to race is that of skin color, which is asked on the self-identification basis, with a closed number of options. Here we identify non-whites as equivalent to the Brown and Black categories.

The distribution of fertility rates by single age group deserves attention since the 15-19 age group is very heterogeneous in Brazil, mainly because at the oldest ages of this group there are adolescents and young women who have already formed families. Although the majority of children ever born to this age group are to women either 18 or 19, there has been a relative increase in the percentage of children ever born to women aged 15, 16, and 17, as compared to a decrease in all other age groups (Graph 2.1).

Graphic 2.1
Relative distribution of children ever born occurred in the year prior to the census date according to single-age groups, Brazil, 1991, and 2000.



3. Maternity and School Enrollment

As seen above, Brazilian adolescent and young women showed an increase in fertility rates in almost all income strata and educational groups. The data show that this increase was present in most social groups, but the levels of variation and mainly the levels of these rates differ from one group to another. In 2000, there was a yearly average of 220 births per 1000 women living in poor households, whereas this rate for the upper class is only 21 per 1000, a tenfold difference.

The motives and consequences of maternity among the young are also probably different in the various age groups and socio-economic classes. Some studies have shown that women in the lower classes see the formation of a family and early childbearing as a positive event in life, and that school dropout tends to occur prior to pregnancy (Heilborn, 2005).

Nonetheless, it would seem pertinent to ask why this still happens in a society where better job opportunities are related to having better technical skills and/or higher educational levels. In the past, having a family while still very young was not seen as a problem. The demographic explanation for this is that in a society where life expectancy was below 50 and with an extreme gender-biased system it was almost a natural and possible result. But in a very urban and industrialized society, early family formation is not necessarily seen as natural if not linked to lack of opportunity for young people of either sex.

The consequences of high rates of adolescent fertility have been widely debated in the literature. One of the most often cited negative consequences is related to school attendance. The Brazilian educational system has no special programs for young women who become pregnant. Therefore, if a student chooses not to abort, the most probable outcome in terms of education is that she will quit school, this likelihood being higher among the poorer social strata. Although we do not imply any direct causality in this analysis, we wish to highlight the fact that being a mother when there are few job opportunities for those with limited education may have serious consequences for the lives of young women in Brazil.

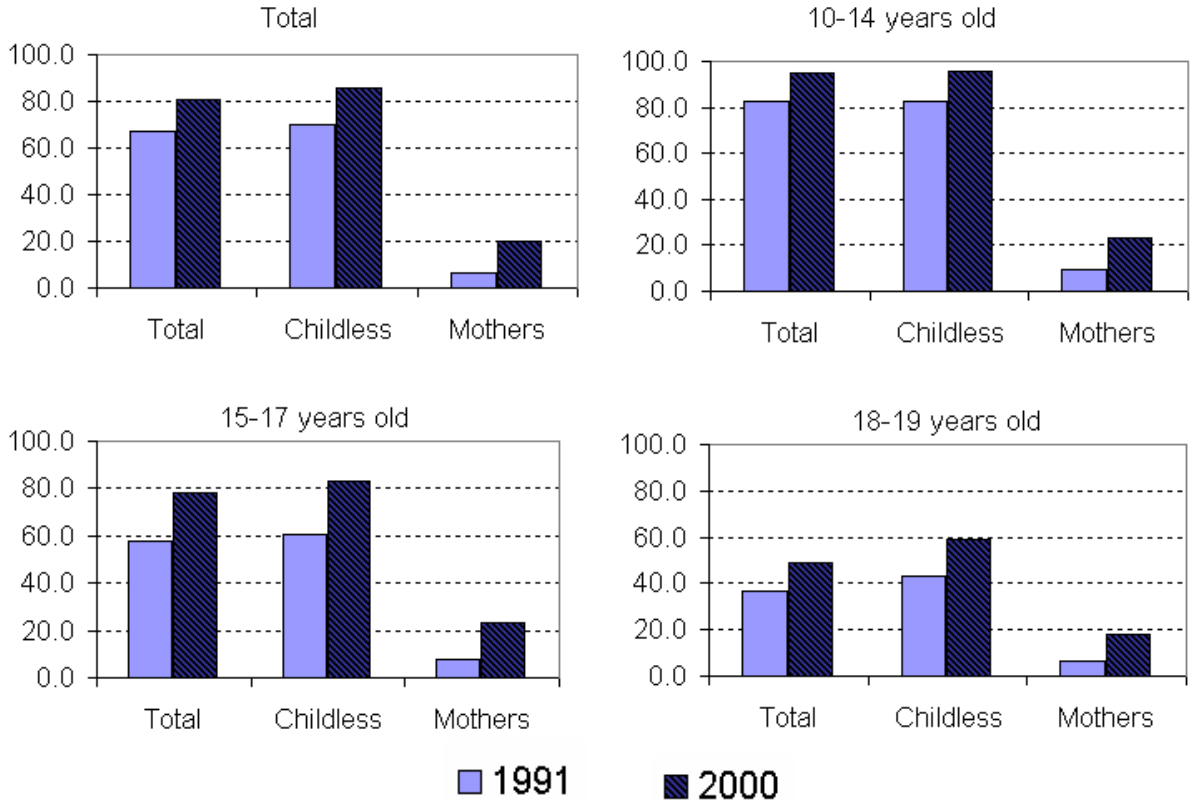
Recent and reliable data for investigating the consequences of pregnancy on school dropout rates on a national scale in Brazil are not readily available. However, if we want to draw a broader picture of school enrollment for young mothers, census data can give us a clear idea. For example, census data can provide us with estimates of the chances of being in school at the time of the interview both for those who are mothers and those who are not. Due to modeling limitation and data constraints, we cannot analyze direct causality between maternity and school enrollment but, as explained above, this is not our intention here.

Since the chances of being a mother and being enrolled in school very greatly in function of age, we will analyze three groups here, namely, ages 10-14, 15-17 and ages 18-19. In 1991, 0.2% of those aged 10-14 were already mothers (more than 30,000 women) and this rate increased to 0.4% in 2000. For the 15-17 and the 18-19 year-old groups these figures were 4.8 and 17.4%, respectively, in 1991, and increased to 8.3% and 24.3% in 2000.

School enrollment grew significantly in Brazil during the 1990s. As can be seen in Graph 3.1, about 67% of the women aged 10-19 was enrolled in school in 1991, and by the end of the decade this rate had reached 80%. This improvement was seen in all three age groups besides the different levels of enrollment between the youngest and the oldest (in 2000, more than 95% of the population between the ages of 10 and 14 were in school, whereas less than 50% of the 18-19 year-olds were). The story is quite different among mothers. The

enrollment rate for young mothers is very low in all age groups, less than 20%. However, it is worth noting that the highest relative increases in school enrollment during the decade occurred among mothers across the three age groups (Graph 3.1).

Graph 3.1
Distribution of mothers and childless women enrolled in school on the date of the census, according to age, Brazil, 1991 and 2000.



Source: IBGE, Demographic Censuses of 1980, 1991, and 2000.

Since the chances of being enrolled in school depend on a number of factors other than age, especially socio-economic factors, we have modeled attendance at school by controlling certain variables to obtain a broader net effect of this likelihood. The question we asked here was not how pregnancy or fertility rates are associated with education, income, and age, but rather: what chances do young mothers have of being enrolled in school? To answer this question, we modeled school enrollment in a logistic regression (enrolled or not enrolled in school at the time of the interview) and compared the chances for those who were mothers in 2000 and those who were still childless.

The full model, controlling for several variables, is shown in the Annex (Table A.1). It shows that a childless woman is eight times more likely to be enrolled at school than one who has at least one child, when controlling for age, color/race, working outside the home, place of residence, income, and years of schooling completed. In addition, in this model, age and fertility are respectively the two variables that best explain the probability of being in school, or not (Type III Analysis of Effects, Table A.1).

In order to facilitate the analysis, instead of running interactions on the model, we present the odds ratio for models run for specific groups[5] Table 3.1 (these models have controls for all the variables considered in the full model). Each cell in the table represents the chance a woman would have to be enrolled in school if she were childless compared to women who are already mothers, considering each income and age groups. As might be expected, age affects the risk level. If the woman is very young (10-14) she has almost 70 times more chance of being out of school if she has become a mother. This chance drops to 6 times if she is 18-19 because by this age most women are out of school anyway, regardless of any other factors.[6] Although we do not know the time the individuals left school or if they left because of maternity, we do know that being enrolled in school and having at least one child are events in the lives of young women that seem to be very incompatible in Brazil.

As illustrated in Table 3.1, the odds ratio for women aged 10-14 in the low- and medium- income categories shows that a childless women is about 60 more likely to be in school than a mother of the same age and income category. Among the high-income category this figure drops to about 20 times. Although the risk is still high, we see that income plays an important role in the chances a young mother has to continue her education. If an adolescent between 15 and 17 has at least one child she is 15 times less likely to be in school than one who has never had a child, and this likelihood is very similar even across income categories. The chances for the 18-19 group are only half of those for group 15-17, but the chances of being enrolled in school is still very low for mothers (seven times lower). Income also makes a difference for this group.

[5] We defined three groups: 1) low income women living in a household with income per capita up to ¼ of the minimum monthly wage, 2) medium income group as those having from 1 to 2 minimum wages, and 3) high income: those earning 5 or more times the minimum wage.

[6] We considered for the analysis only women who had been enrolled in school at least once in their lifetime. The percentage of women 10-19 who declared that were never enrolled in school in 2000 was below 2%.

Table 3.1
Odds ratio for childless women compared to mothers being enrolled in school according to age and income group, Brazil, 2000.

Age Group	Income Group			Total Low Income
	Low Income	Median Income	High Income	
10-14	55.5	64.3	20.5	69.5
15-17	15.6	13.3	11.7	15.5
18-19	8.1	4.1	5.3	6.0

As stated by Bledsoe and Cohen, "adolescent fertility is affected by a wide range of rapidly changing factors acting through multiple, complex pathways we are only beginning to understand" (Bledsoe and Cohen, 1993, p. 234). In Brazil the poor quality of education associated with limited job opportunities might induce a great number of young women to start families as the most attractive choice for their lives. Hence, a large proportion of adolescent and young women see childbearing and the formation of a family as the only chance of having a different life (Heilborn, 1998). In a better educational system, not only in terms of coverage, but especially regarding the quality of the education, together with a broader job market in a society that is more equal for men and for women, we should expect large proportions of women to chose not to become mothers during their teenage years and this would consequently lower adolescent and youth fertility to levels found in most developed countries, or at least reduce the differences seen among socio-economic classes in Brazil, in terms of fertility of adolescents and youth.

It is common to read in the literature that early childbearing tends to increase the likelihood that women who start having children when very young will have many children during their reproductive lives (Camarano, 1998). Avoiding generalizations, especially in a large and heterogeneous country like Brazil, and in view of good reasons to believe that most women in Brazil have opted for small families, we would like to point out that young mothers will have a long period during their reproductive lives regulating fertility (or having abortions) rather than having many children.

4. A Take on Future Trends

From the results presented in the previous sections, the natural question posed is, how long will this trend in youth fertility continue? Will it change? To seek at least tentative answers we included the most recent data from the National Household Surveys (PNAD) of 2001 and 2003 in our analysis. We also included data from the administrative records on birth obtained from two different sources: the Health Ministry's Registration System (SINASC)[7] and Vital Registration from the Census Bureau (IBGE).

All these sources indicate that there has been a decline in age-specific fertility rates in the country, even since 2000. In other words, there has been a change in the trend seen during the 1990s. In the case of data from the PNAD, the rates fell from 85.7 births per 1000 women in 2001 to 81.0 in 2003, a decrease of 5.5%. The SINASC data show a decline of 10.4%, with rates falling from 80.9 per thousand in 2000 to 72.5 per thousand in 2002. Likewise, Vital Registrations showed a decline of 16.9%, varying from 81.2 births per 1000 women in 2000 to 67.3 in 2003.[8]

Graph 4.1 clearly illustrates this downward trend in age-specific fertility rates since 2000, cited above, in spite of the differences in the fertility levels presented by each data source, which are due to the different patterns of under-registration in administrative records. This graph also includes figures for adolescent and youth fertility rates for some years in the 1990s from all data sources available, including the Demographic Health Survey data (PNDS) for 1986 and 1996, to give an overall picture of the rates over time. All the data sources corroborate an increase between 1991 and 2000 in the age-specific fertility rate for women aged 15-19, as shown by the demographic census data cited above. It is worth mentioning that, with due reservations regarding comparisons between census data and Household Survey data,[9] the 2003 rate of 81.0 births per 1000 women aged 15-19 approximates the level seen two decades ago, in 1980 (79.4 per thousand).

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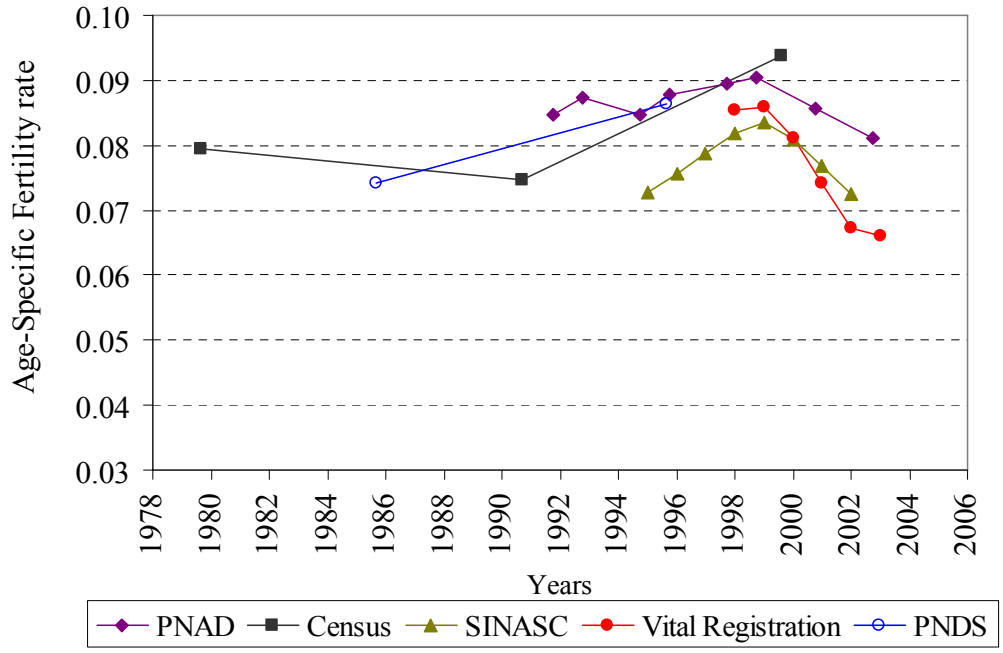
[7] Both sources are known to have large and regionally differentiated coverage. However, we included them in the analysis to compare trends and not to estimate the real level of adolescent and youth fertility. The estimates of under-registration ranges from 22% to 7% in all regions in Brazil (*Ministério da Saúde, 2004*). Although there are no accurate estimates, there seems to have been an improvement in the coverage over the last decade, but the figures on registration coverage for this decade are questioned by many.

[8] These figures deserve more careful analysis because Vital Registration is corrected every year for late birth registration, hence the more recent the data the more underestimated the age-specific fertility rate will be.

[9] The sample for the Household Surveys is taken from the census tracks existing at the time of the census at the beginning of the decade, and households are chosen each year, until the next census, from the same sample. Since the sample of the census track is very small, only by chance the estimates of fertility rates might be above or below the real average values for the country as a whole during the entire decade.

The consistency of the trends presented from all these data sources cannot rule out the increase in the fertility rate for adolescent and young women during the 1990s in Brazil and that adolescent fertility is decreasing in the 2000's. Although we cannot be sure of the level of adolescent fertility, nor can we estimate the real level of fertility, even on short-term, we are posed with a fact to explain: What happened in Brazilian society that might explain the increase in adolescent and youth fertility during the 1990s and its fall in the following years?

Graph 4.1
Age-specific fertility rates for women aged 15-19 according to different data sources. Brazil, 1980 to 2003



Sources: Demographic Censuses of 1980, 1991, and 2000; National Household Surveys of 1992, 1993, 1995, 1996, 1998, 1999, 2001, and 2003; SINASC 1995 to 2002, Vital Registration from 1998 to 2003; and Demographic Health Surveys (PNDS) 1986 and 1996.

In spite of the lack of recent nationwide surveys on reproductive and sexual behavior, some sparse studies allow us to attempt to understand current changes and stabilities. Among the factors that could be called on for an approximate explanation for the increase in fertility rates among adolescents and young people in the 1990s, we might mention the changes in values and attitudes in Brazilian society, including greater sexual freedom, the relative value of virginity, first sexual intercourse at younger ages,[10] lack of appropriate family planning

[10] According to *Ministério da Saúde* (2000), in 1984, 35.2% of the young men aged 16-19 began being sexually active before the age of 14, white this figure rose to 46.0% in 1998. Among women aged 16-19, 13.6% had had

programs for adolescents and young people, lack of sex education in school curricula, persistence of gender asymmetry, among other factors.

The broad nationwide campaigns of SDT and AIDS prevention, targeting also the segments of younger people, the strategies in the reproductive health policies toward adolescents[11], including emergency contraception, recommendation for sex education at schools, and a massive exposure in the media regarding the negative consequences of unplanned pregnancy among young people, seemingly, actions in the direction of allowing young people to have sex with double protection, speaks out in favor of the decline of adolescent and youth fertility in the last years.

As for future trends we might mention the recent advance of fertility rates observed in the State of São Paulo, and infer that other regions in Brazil will follow suit. Yazaki (2003) published a study on this state where Vital Registration data is believed to be very accurate, showing that age-specific fertility rates for women ages 15-19 increased in the 1990s, and reached a peak of 86 birth per one thousand women. This decline began in the late 1990s, and the rate had fallen to about 65 births per 1000 women aged 15-19 in 2002, even below the 1980 level (73 per 1000).

What remains uncertain is how far adolescent and youth fertility will fall, since, in view of UN standards, Brazil has medium-to-high rates (around 80 births per 1000 women). Although the rates are declining and also the number of births has been decreasing in Brazil, more than 600,000 of the 3,000,000 born every year are to women aged 10-19 (about 25,000 to women aged 10-14, 250,000 to those aged 15-17, and 350,000 to those 18-19). The percentage of these births which are due to lack of knowledge about contraception and/or insufficient access to contraception should be reduced since these are reproductive rights expressed at the Cairo Conference in 1994, which was signed by the Brazilian government. Policies and programs should be carefully thought out and implemented in order to reach out to this population nationwide.

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sexual intercourse before the age of 14 in 1984, this percentage rising to 32.3% in 1998.

[11] The Demographic Health Survey (PNDS, 1996) revealed that among women 15-19 years old, 14% were using contraceptive methods to avoid pregnancy. On the other hand, the survey on Youth and Sexuality (UNESCO, 2003) carried out during the year of 2000 interviewing more than 16 thousand students enrolled in middle or high school in 13 Brazilian state Capitals and the Federal District, showed that among the young women, aged 15-19, the use of contraception in the survey sites varied from 87% to 95%. Besides, among these users, the prevalence of condom was among 48% and 70%.

References

Berquó, E. and Cavenaghi, S. 2004. Mapeamento sócio-econômico e demográfico dos níveis de fecundidade no Brasil e sua variação na última década. In: *Encontro Nacional de Estudos Populacionais, 14*, Caxambu. Annals… Campinas: ABEP (CD-ROOM). September.

Bledsoe, C. H. and Barney, Cohen (Ed). 1993. *Social Dynamics of Adolescent Fertility in Sub-Saharan Africa.* Working Group on the Social Dynamics of Adolescent Fertility, National Academy of Sciences: Washington, D.C. Pp.224.

Camarano, A. 1998. Fecundidade e anticoncepção da população jovem. *In*: Comissão Nacional de População e Desenvolvimento. *Jovens acontecendo na trilha das políticas públicas*. v.1, Brasília: CNPD, IPEA.

Gupta, Neru, and Leite, I. 1999. Adolescent fertility behavior: trends and determinants in the Northeastern Brazil. *International Family Planning Perspectives*, *V*.25, *n* 3.

Heilborn, M. L. 1998. Gravidez na adolescência: considerações preliminares sobre as dimensões culturais de um problema social. In: Vieira EM, Fernandes ME, Bailey P, and McKay A (orgs). *Seminário Gravidez na Adolescência*. Brasília (DF): Cultura Editores Associados.

Heilborn, M. L. 2005. *O ultra-som de uma "tragédia nacional". Resultado: a gravidez precoce não é o drama que se noticia.* O Estado de São Paulo- Caderno ALIÁS, 20 DE FEVEREIRO DE 2005.

Ministério da Saúde. 2000. *Comportamento sexual da população brasileira e percepções do HIV/AIDS*. Brasília: Ministério da Saúde, Pp. 247.

Ministério da Saúde, 2004. "Integração de Informações do SIAB, SIM e SINASC nos Sistemas Locais de Saúde". *Informe da Atenção Básica*. Jan-Feb of 2004.

Villareal, M. 1998. *Adolescent fertility: socio-cultural issues and programme implications*. Population Programme Service, Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, 00100 Rome.

Yazaki, L. M. 2003. Fecundidade da mulher paulista abaixo do nível de reposição. *Estudos Avançados* 17 (49).

Annex

Table A1: Odds ratio and significance on school enrollment for females aged 10-19 according to selected variables, Brazil, 2000.

Variables	Odds Ratio	Wald Chi-Square
Childless Women	8.3*	214370
Mothers	1.0	
Age 10	100.9*	803849
Age 11	65.8*	457927
Age 12	38.9*	526785
Age 13	21.4*	586949
Age 14	11.7*	603358
Age 15	6.9*	569269
Age 16	4.7*	464094
Age 17	3.1*	356243
Age 18	1.5*	223669
Age 19	1.0	
White	1.1*	36084
Non-White	1.0	
Urban	1.0	
Rural	0.6*	7513
Working outside the home (yes)	1.0	
(No)	1.9*	64151
Between no income and $^1/_4$ min. wage	0.4*	165341
> $^1/_4$ to $^1/_2$ m.w.	0.4*	38222
> $^1/_2$ to 1 m.w.	0.4*	38050
> 1 to 2 m.w.	0.5*	40391
> 2 to 3 m.w	0.5*	34595
> 3 to 5 m.w.	0.7*	20633
> 5 or more m.w.	1.0	6064
Years of schooling	1.1*	168629
Pseudo-R^2	32%	
Percent Concordant	86.9	
Percent Discordant	12.8	
Percent Tied	0.3	
Type III Effects Analysis		
Fertility	803849*	
Age	1646845*	
Color/race	7513*	
Place of residence	64151*	
Working outside	165341*	
Per capita income	53662*	
Years of schooling	168629*	

* Significant at 99%.