Introduction

Women who become mothers during adolescence make up a particularly vulnerable group: a large part of them do not attend school; they must do home chores and, sometimes, they have to find prematurely a poorly qualified job; they are highly likely to be single mothers and they must deal with responsibilities by themselves that should be shared. Therefore, teenage fertility can be considered to favor dropping out.

Nonetheless, recent research suggests that dropping out precedes, in many cases, pregnancy (González Galván, 2000; Rodríguez Vignoli and Hopenhayn, 2007). In those cases, it is associated to lack of resources and/or schools, no personal motivation; the individual characteristics of young women, little relevance of human or educational capital as an instrument to find better jobs in the future and as a means of social mobility, the family or social environment, among other causes (González Galván, 2000; Pantelides, 2005; Rodríguez Vignoli and Hopenhayn, 2007).

Rodríguez Vignoli and Hopenhayn (2007) and Pantelides (2005a) agree on the fact that maternity is highly likely a life plan for these young women in contexts where education is limited and rejected or there are no other options or future prospects. That is related to lower valuation of the cost of maternity at a young age and the benefits of postponing it.

The fact that fertility during adolescence becomes the cause and consequence of truncated school trajectories means that two predominant situations are detected among young mothers: fertility happens after dropping out or fertility causes dropping out. In this context, we wonder about the direction and magnitude of this relation in two particular Southern American countries: Argentina and Uruguay, both advanced in their demographic transition but still with high fertility rates in adolescence1. In other words, we ask ourselves: Is maternity responsible for dropping out? Or are the teenagers who already dropped out of the system the ones who are most likely to get pregnant? Is there any difference between living conditions?

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1 According to the population projections made by the Latin American and Caribbean Demographic Centre (known as CELADE) - Population Division of Economic Commission for Latin America and the Caribbean (ECLAC), there were 57 and 61 births per 1,000 women aged 15-19 years, respectively, in Argentina and Uruguay, during the period 2005-2010 (CELADE, n.d.).
In Argentina, there are no official data sources which allow us to reveal the chronological order of the events directly. On the contrary, in Uruguay, there is an official data source that provides the needed information. Specifically, the National Adolescence and Youth Survey (Encuesta Nacional de la Adolescencia y la Juventud - ENAJ) 2008. However, this survey collects information about only 75 mothers between 15 and 19 years old. As we consider there are not enough cases to study the problem proposed, we decided not to use this data source.

According to the limitations exposed, we intend to answer the questions above applying an indirect method based on the official data available. In the next section we explain the data and method used. Then, we present the results. At the end, there are the conclusions.

Data and methods

In Argentina, as there is no official information to find out directly if maternity during adolescence precedes or succeeds dropping out, we use data from the Census 2001. In the case of Uruguay, according to the ENAJ 2008 limitations, we use the Household Survey 2006\(^2\). Both data (census and survey) are provided by the Minnesota Population Center\(^3\) (MPC) and have the distinction of being harmonized. Therefore, they allow making comparisons between countries.

In particular, we use information about 14-19 year-old adolescents related to: educational situation (with three possible categories: Never attended; Attends; Does not attend but used to attend), number of school years completed, current fertility (that means if they have children born during the last year) and retrospective fertility (referring to the total number of children per woman).

Based on experiences by Katzman (1999) and Rodríguez Vignoli (2005), we use the information above to find out, firstly, the “school trajectory” of the adolescents. This trajectory admits three possible situations: normal, falling behind and lagging.

The normal situation means that the young woman was not held back any year or that she did not drop out\(^4\). Following Rodriguez Vignoli (2005), a person is considered to have fallen behind when the number of years of school completed is up to two years less than the normal trajectory. Finally, the person is considered to be lagging when the number of years completed is at least three years less than the normal trajectory.

After that, we combine the categories of the educational situation with those belonging to school trajectory and obtain seven new sub-classifications: Never attended, Attends normally, Attends but has fallen behind, Attends but is lagging, Does not attend but used to attend normally, Does not attend but used to attend and has fallen behind, Does not attend but used to attend and is lagging.

It is worth mentioning that the methodology applied to determine the order of the events maternity and dropping out is restricted to those young women who do not attend

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\(^2\) At first, we wanted to replace the results of ENAJ 2008 with those belonging to Census 2011. Nevertheless, even this census asked about the number of school years completed (an essential data for applying the method proposed), this information hasn’t been published yet.

\(^3\) In fact, these microdata belong to the project Integrated Public Use Microdata Series (IPUMS International).

\(^4\) If it is considered that most children start elementary school at 6 (when they are already 6 years old or will turn 6 before June 30th of that year) and complete the first year when they are 7 (when they are already 7 or will turn 7 before June 30th of the following year), a 7 year-old child should, in theory, have finished at least one year of school.
classes but used to attend, and who have become first-time mothers during the last year before the census/survey. This restriction is due to the fact that these women do not accumulate maternity effects in the past and the events are as contemporaneous between themselves as possible.

According to the restriction described and following Rodríguez Vignoli (2005), we can find three possible situations: a) In the case the mother has a normal trajectory, dropping out is highly likely due to getting pregnant; b) If she has fallen behind in her school trajectory, it is difficult to reach a conclusion about the order of the events; c) Finally, if she is lagging, it is highly likely that she dropped out before getting pregnant (Table 1).

Table 1. Approximation to the chronology between maternity and dropping out

<table>
<thead>
<tr>
<th>Educational situation</th>
<th>School trajectory</th>
<th>Order of events</th>
</tr>
</thead>
<tbody>
<tr>
<td>An adolescent who became first-time mother during the last year, who does not attend but used to attend to school</td>
<td>Normal</td>
<td>She dropped out after or during pregnancy</td>
</tr>
<tr>
<td></td>
<td>Falling behind (1 or 2 years of education less that in the normal trajectory of education)</td>
<td>Doubtful situation</td>
</tr>
<tr>
<td></td>
<td>Lagging (3 or more years of education less that in the normal trajectory of education)</td>
<td>She dropped out before pregnancy</td>
</tr>
</tbody>
</table>

Source: Own elaboration.

Finally, we analyze the differences between living conditions in Argentina. Based on the information provided by the Census 2001, we take into account two types of indicators: on one hand, two related to welfare conditions: a) Presence of Unsatisfied Basic Needs\(^5\) (Necesidades Básicas Insatisfechas - NBI) and b) Material Deprivation Index\(^6\) (Índice de Privación Material de los Hogares - IPMH); on the other hand, one associated to urban/rural residence.

Although the Household Survey 2006 allows calculating those indicators for Uruguay, it includes only 389 adolescents who became first-time mothers and do not attend school but used to attend. As we consider this amount is not enough for studying differences\(^7\), we do not present any result in this case.

\(^5\) In Argentina, a person has UBN (known as NBI in Argentina) when he/she belongs to a household that has, at least, one of these characteristics: more than three persons per room (crowding); living in a house made of irregular materials, or in rented quarters (housing); not having an indoor flush toilet (sanitation); having a child between 6 and 12 years that is not attending school (school attendance); having four or more persons per person working and a household head with 2 or less years of primary school (subsistence capacity). For more information, see INDEC (1984) and Hicks (2000, p. 105).

\(^6\) The IMPH methodology was designed by the National Institute of Statistics and Censuses (known as INDEC) of Argentina in order to measure, indirectly, heritage or current resources, or both of them. For more information, see INDEC (n.d.).

\(^7\) In this sense, only 7.2% of the mothers that gave birth during the year before the survey and do not attend but used to attend to school live in rural areas, 7.4% of them are overcrowded, 1.7% present poor housing conditions and 15.7% live in houses without any toilet.
Results

Adolescent fertility in Argentina and Uruguay

According to the Census 2001, in Argentina about the 11% of the girls between 14 and 19 years old have had a child. By simple age, it represents 2.7% at 14 years, increasing to 23.6% at 19 years (Graphic 1).

Meanwhile, in Uruguay, the Household Survey 2006 shows that 7% of the adolescences have been mothers. It represents 1.5% at 15 years and 19.6% at 19 years old. The data reveals that at 14 years only 3 girls have had a child, and only one in the last year. Thus, we decide to exclude this age from the analysis (Graphic 1).

Inside the mothers group, in Argentina, about 51% had a child during the last year before the Census, and 40% had their first child in that year. It means that the proposed method includes 40% of the 14-19 year-old mothers. This percentage varies with the ages: between 66.4% at 14 and 29.3% at 19 years (Graphic 1).

In Uruguay, 52.6% of the young mothers had a child during the last year before the Household Survey 2006, and 45% had its first child that year. This value varies between 68% and 33% from 15 to 19 years old.

Graphic 1. Argentina and Uruguay. 14-19 year-old mothers, mothers last year and first-time mothers during the last year (in percentages)

Source: Own elaboration based on data collected from Census 2001 in Argentina and Household Survey 2006 in Uruguay.

Some differences in the school trajectory between mothers and non-mothers

Here we describe, in comparative terms, the school trajectory of adolescents who have been mothers and those who haven’t. We have to make clear that the mothers group includes only those who had their first child in the last year8.

Generally, in both countries, the scholar assistance reduces while the adolescents’ age increases, regardless if they are a mother or not. However, there are significant differences in other ways:

8 As we anticipate in the methodological section, it depends on the proposed method.
- Among first-time mothers:

- In Argentina, at 14 years, about 76.7% attend school. The percentage decreases to 47% at 15 years and reaches 17.7 at 19. In Uruguay, although the percentages are lower, they also decrease with age: 22.7% at 15 years to 5.8% at 19 years (Graphic 2).

- Also in Argentina, there are many more adolescents attending school normally, while in Uruguay there is a combination between normal, falling behind and lagging. This implies that Argentina has managed to retain young mothers in the educational system to a greater extent than Uruguay (Graphic 2).

- Between girls not attending school (group that increases with the age), it highlights the lagging (it means, 3 or more years of education less that in the normal school trajectory) (Graphic 2).

Graphic 2. Argentina and Uruguay. Distribution of 14-19 year-old first-time mothers during the last year by school trajectory and age (in percentages)

![Graphic 2](image)

Source: Own elaboration based on data collected from Census 2001 in Argentina and Household Survey 2006 in Uruguay.

- Among non-mothers

- In both countries, this group has more chances of staying at school than mothers. In Argentina, at 14 years, 93% attend school and, at 19 years, 60%. In Uruguay, the attendance level is a little lower: 90% at 14 and 57% at 19 (Graphic 3).

- Besides, both countries have similar profiles: it highlights the girls who assist normally, although this category reduces faster with the age increasing (Graphic 3).

- Between girls not attending, it highlights lagging, just as in the mothers group. However, unlike them, the proportion is 3-times lower. It follows, in order of importance, the normal situation in Argentina, and the falling behind in Uruguay (Graphic 3).
Graphic 3. Argentina and Uruguay. Distribution of 14-19 year-old non-mothers by school trajectory and age (in percentages)

Source: Own elaboration based on data collected from Census 2001 in Argentina and Household Survey 2006 in Uruguay.

Trying to determine the order of the events (maternity and dropping out)

As we have seen in the methodological section, the order between maternity and dropping out is estimated from information about the educational trajectory of those girls who became first-time mother during the year before the census/survey, and who do not attend school but used to.

Thus, adolescents who used to attend the normal school trajectory are those who had the number of school years completed according to the age. In Argentina, 11% of 14 year old mothers are in this category, 13.4% at 17 and 17% at 19 years. In Uruguay, the percentages are 13.6%, 6% and 9%, respectively, at 15, 17 y 19 years old (Graphic 4).

In this case, we consider that dropping out occurs after pregnancy. It has different consequences, depending on the age of the girl: between 14 and 17 years old, they could have left school when they were at high school. But between 18 and 19 years old, they could have completed this level. In these cases, the pregnancy may have meant an impediment for continuing higher education, or a life plan after finishing school.

Meanwhile, in the case of girls who used to attend and had fallen behind, it is difficult to reach a conclusion determining the order of events: they could have a relatively recent desertion prior to motherhood, or they might have left school just when the baby is born, because of low educational attainment prior to pregnancy.

In Argentina, this group increases with age, to reach 32.5% at 16 years. Then, it decreases to 16.3% at 19. In Uruguay, the highest percentages are between the youngest (63% at 15), and the minimum (25%) at 19 years old. As we have said, in this case we cannot argue that maternity causes dropping out (Graphic 4).

To finish, mothers who used to attend and lagging dropped out before pregnancy. This is associated with early dropout, or an erratic trajectory with low educational attainment.

\footnote{It is worth mentioning that only 57% and 38% of the 18 year-old first-time mothers that used to attend to school, respectively, in Argentina and Uruguay, declared they have completed high school.}

\footnote{Remember that it refers to 3 or more years of education less that in the normal school trajectory.}
This group increases with the age, with a higher level in Uruguay (except at 15 years, where there are no cases). In Argentina, it represents 4.3% at 14 years to 48.3% at 19, while in Uruguay, it increases from 41% at 16 to 62% at 19 years (Graphic 4).

Graphic 4. Argentina and Uruguay. Proportion of 14-19 year-old first-time mothers during the last year by school trajectory

Maternity, dropping out and context

As we have said, we are interested in knowing whether the relationship between maternity and dropping out depends on living conditions. We have to remember we can only analyze the case of Argentina. Graphics 5 and 6 reveal that the probability of dropping out and be lagging increases with age, regardless of the context of welfare. Additionally, in each age group, there is more educational vulnerability in poverty context: that is, the proportion of adolescents who don’t attend school and lagging increases while the proportion of attending with normal trajectory decreases.

Graphic 5. Argentina. Distribution of 14-19 year-old first-time mothers during the last year by school trajectory and presence of NBI (in percentages)

As we have seen, the Household Survey 2006 in Uruguay considers only 389 first-time mothers. Therefore, making desegregations could lead us to erroneous conclusions.
Also, Graphic 7 shows that the order of events is tied to the mothers’ age. Between mothers not living in poverty (that means without UBN), until 16 years old, there is more evidence that drop-out can be contemporaneous to motherhood or behind it (linked to normal trajectory). However, from 17 and onwards, most of the girls could drop out before becoming mothers (linked to lagging). On the contrary, between mothers living in poverty (with UBN), from 15 and onwards, it prevails the percentage of girls that could drop out before maternity and this proportion increases rapidly with age.

Summarizing, we can say that the lack of economic welfare impacts in the school trajectory in a negative and significant way. Thus, it stands the not attend but used to attend situation, linked to a drop-out before maternity\(^\text{12}\). In other words, drop-out previous to maternity increases with age and decreases with economic welfare.

\(^{12}\) As the results linked to IPMH are similar to those related to NBI, they are not presented in this case.
The young mother scholar trajectory also depends on the residential area (urban/rural). Thereby, graphics 8 and 9 show similar behavior to poverty: while among mothers who live in urban areas, there is more evidence of drop-out after maternity (just as mothers not living in poverty), in rural areas dropout occurs more frequently before it (just as the same as mothers living in poverty).

Graphic 8. Argentina. Distribution of 14-19 year-old first-time mothers during the last year by age, school trajectory and urban/rural residence (in percentages)

[Graph showing data]

Source: Own elaboration based on data collected from Census 2001 in Argentina.

Graphic 9. Argentina. Percentage of 14-19 year-old first-time mothers that used to attend to school over total 14-19 year-old first-time mothers by age, school trajectory and urban/rural residence

[Graph showing data]

Source: Own elaboration based on data collected from Census 2001 in Argentina.
Conclusions

From a cross-sectional view, the results show the largest educational vulnerability of mothers compared to non-mothers. In other words, even normal assistance reduces with age, it prevails among non-mothers. On the contrary, and more frequent in Uruguay, drop-out with lagging prevails within girls who become mothers and increases with age.

From a longitudinal view, we can conclude that adolescent fertility promotes dropping out only in some cases (between 11% and 17%, depending on age). According to different authors (González Galván, 2000; Pantelides, 2005a; Rodríguez Vignoli and Hopenhayn, 2007) there is greater evidence of previous drop-out, which may be linked to different situations: a) an educational trajectory truncated before motherhood which increases considerably with age, or b) a trajectory with school delay that may result in dropping out before maternity or contemporaneously to it.

Additionally, if the characteristics of the context of residence become adverse (that means when mothers live in poverty or in rural areas), it is more common to drop out before motherhood. This shows that education loses its protective ability in the most deprived sectors, where adolescent fertility rates are higher (Pantelides 2005a and 2005b; Pantelides and Binstock, 2006 y 2007; Rodríguez Vignoli, 2004, 2005 y 2008; Rodríguez Vignoli y Hopenhayn, 2007; Varela Petito, 1999; Varela Petito and Fostik, 2010).

Despite these conclusions, it is worth remembering that they only refer to young mothers who dropped out in the same year their children were born. As they do not take into account the mothers that dropped out after the year of giving birth, the indicators presented in this paper underestimate the incidence of these cases. Therefore, we need to develop new methods, in order to increase the knowledge about the topic and propose possible solutions.
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