Adolescent Fertility around the World

Abstract [286 words]

The goal of this paper is to examine the current levels and recent trends of adolescent fertility around the world. The analysis is based on census and nationally representative fertility data from the mid-1980s to the mid-2000s in 186 countries. The importance of examining the transition to parenthood in adolescence is that the well-being and quality of adolescents' future lives depend largely on the events taking place during adolescence, particularly childbearing. At the macro level, the relevance of adolescent fertility is exacerbated by the unprecedented large sizes of cohorts of young people in the developing world.

In our analysis we find that adolescent fertility has declined in many of the countries where it was particularly high, including most of Sub-Saharan Africa and Southern Asia, but it is still very high and there are countries where the rate has remained stable or has even increased. Similar heterogeneity can be found in the countries with intermediate adolescent fertility rates. Although declines in adolescent fertility prevail in regions like South-Eastern Asia, there are notable exceptions, particularly in Latin America and Western Asia. Those regions that had already low levels of adolescent fertility in the mid-1980s, like Europe or Eastern Asia, have generally experienced further declines.

In the last part of the paper we correlate these trends in adolescent fertility with the trends in overall fertility rates throughout the world arriving at a typology of countries. Declines in adolescent fertility have not necessarily gone hand-in-hand with declines in overall fertility and there are different patterns of adolescent fertility change over the fertility transition. By bringing sexual initiation, marriage patterns, extra-marital childbearing and contraceptive prevalence into the picture we are able to understand how these different patterns emerge and interconnect.

Extended abstract

Introduction

Adolescence is a period of key transitions in individuals' lives. During the teenage years, there is rapid physical, social, psychological and economic development as well as learning and skills building, along with risk and vulnerability (Lloyd 2005; Dixon-Mueller 2007). It is also during this period that adolescents transition from a state of legal dependence from parents to a situation of civil and individual responsibilities and rights. In most countries, by age 18 adolescents acquire the right to vote and drive in addition to the right to marry without parents' legal consent, for example. These social, economic, biological and demographic transitions set the stage for adult life as they are likely to shape adolescents' entire future. In fact, the well-being and quality of adolescents' future lives depend largely on how successful they are in taking advantage of opportunities and avoiding potential problematic outcomes (Bongaarts and Cohen 1998; Singh 1998; Lloyd 2005; Dixon-Mueller 2007).

The relevance of adolescent fertility is exacerbated by the unprecedented large sizes of cohorts of young people in the developing world. The size of the adolescent and young populations will soon reach a historical peak in several developing countries, a peak that will likely generate the largest number of young people these countries will ever see (Lam 2006; Lam and Marteleto 2005). Even though the growth rate of the adolescent population is significantly lower today than it was 30 years ago in almost all developing countries, the large sizes of the income youth cohorts are likely to result in increases in the absolute numbers of teenage births, if adolescent birth rates remain constant.

Another important motivation for examining adolescent fertility is the pervasiveness of its consequences. The massive consequences teenage childbearing is likely to produce go from the future lives of young parents and their offspring to the societal level. There are essentially two types of ramifications to adolescent childbearing at the individual level: those involving health-related risks to mothers and their offspring, and those related to adolescent parents' capacity to incur well in subsequent transitions to adulthood, such as successful educational and work trajectories and full citizenship.

Adolescent girls and their children are more likely than their older counterparts to suffer pregnancy-related complications such as low birth weight, infant mortality and prematurity (Bledsoe and Cohen 1989) At the same time that the negative health consequences of adolescent pregnancy and childbearing have been well documented, there is also evidence that health effects that appear to be related to birth at young ages may not be caused solely by age, but by intertwining factors such as lack of access and use of professional health care and malnutrition (Zabin and Kiragu 1998), which reinforces the interconnections among the health consequences of teenage fertility and the social roots in which they are embedded.

There is a vast literature on adolescent parents' ability to incur well in subsequent transitions to adulthood, such as educational trajectories and economic independence. Most of this evidence has been on developed countries, although there have been recent studies focusing on developing countries. Childbearing often interrupts adolescents' educational career, if not by permanently dropping out of school, at least by slowing down educational progress (Lloyd 2005). However,

some works have indicated the importance of recognizing that, for several adolescents in many countries, adolescents' educational trajectory was already truncated when pregnancy and birth occurred (Marteleto et al 2007). Once again, the interplay of poverty and lack of opportunity needs to be considered when examining adolescent fertility.

Data

A first step in the analysis of adolescent fertility is to examine the current levels and trends in ASFRs for 15-19 year-olds for countries with two or more available data points since 1986. This is the number of births occurring during a given period to women aged 15 to 19 at the time they give birth divided by the person-years lived by women aged 15 to 19 during that period. The ASFR1519 indicates the risk of bearing children among women aged 15-19. Estimates derived from DHS data usually refer to the experience of women during the three years immediately preceding the interview. Typically, ASFR1519 ranges between 30 and 150 births per 1000 women aged 15-19. This indicator has been commonly used in United Nations reports on adolescent reproductive behaviour (United Nations, 1988, 1989) and in UNFPA's *State of World Population* (UNFPA, 2006). That is, the usefulness of ASFR1519 as an indicator of adolescent fertility is well established. The present analysis is based on census and nationally representative fertility data from the mid-1980s to the mid-2000s in 186 countries where this information is available.

Data classified as "earlier year" correspond to data from 1986 or earliest available data for country from 1986 to 1994. Data referred to as "later year" pertain to data from 2004 or latest

available data for that country from 1995 to 2004. Although this is a general rule that allows for the analysis of trends in the adolescent birth rates, it is important to consider that the interval between the available data points is short in some countries and therefore long-term changes may go unnoticed.

Preliminary Findings

In order to provide current levels and trends in adolescent fertility, we provide maps and will also provide tables in our next version of the paper. Table 1 will show birth rates per women ages 15 to 19 for all countries where there is trend data available for the period ranging from the mid-1980s to mid-2000s. The Table is organized by world regions and sub-regions. Overall, we find that adolescent fertility has declined in many of the countries where it was particularly high in the 1980s, including most of Sub-Saharan Africa and Southern Asia. However, adolescent fertility rates are still very high in some countries in these regions, and we find countries where the rates have remained stable or have even increased. Similar heterogeneity can be found in the countries with intermediate adolescent fertility rates. Although declines in adolescent fertility prevail in regions like South-Eastern Asia, there are notable exceptions, particularly in Latin America and Western Asia. Those regions that had already low levels of adolescent fertility in the mid-1980s, like Europe or Eastern Asia, have generally experienced further declines. Declines in the adolescent birth rate are evident in Eritrea, Kenya, Mauritius and Reunion, all around or above 20%. Kenya shows an enormous decline of 76% in approximately 15 years. However, an increase in the adolescent birth rate is found in Ethiopia, Mozambique and Zambia and there is practically no change in Madagascar, Malawi, Rwanda, Seychelles, Tanzania and Zimbabwe.

There are significant declines in the adolescent birth rates in all countries of Northern Africa, with the exception of Libya, which shows a doubling of the adolescent birth rate, although the rate was not high to begin with (a rate of 7 in 1993). Tunisia shows a very sharp decline, from 28 in 1986 to 8 births per women ages 15 to 19 in 1999. Middle African countries do not reveal the same substantial declines in teenage birth rates as Northern African countries, with the exception of Cameroon. The Central African Republic shows a decline of approximately 8% and there is practically no change in Chad.

In Southern Africa there is trend data only for Lesotho and South Africa and these two countries show divergent patterns. Whereas there is a sharp increase of 81% in the adolescent birth rate in Lesotho, South Africa's adolescent birth rate declined in half, going from 124 in 1988 to 65 in 2001.

With the exception of Mauritania, there was a decline in the adolescent fertility rate in all the Western African countries for which there is available trend data. In Côte d'Ivoire, Ghana, In Senegal and Togo there were significant declines of more than 20% in the adolescent birth rates, whereas Benin, Burkina Faso, Guinea, Mali, Niger and Nigeria show sensible declines of less than 20% from the 1986-1994 to the 1995-2004 periods.

The adolescent birth rates of Eastern Asian countries were already low in the late 1980s and early 1990s and all of them experienced further declines from this early period to the 2000s, with the exception of Japan, where rates are extremely low. In Japan, the adolescent ASFR went from

4 to 6 throughout from 1986 to 2004. China shows the sharpest decline, with the adolescent birth rate going from 19 to 3 from 1986 to 2002.

There are declines in the adolescent birth rates in eleven of the twelve countries in South-eastern Asia for which there are available trend data. The Philippines is the exception, where there appears to be a mild increase from 52 to 55 in the 1990s, despite these low levels for the region. The most substantial declines are perceived in Cambodia and Malaysia. In Cambodia, the adolescent birth rate went from 174 in 1989 to 51 in 1998, whereas in Malaysia it decreased to half, going from 24 to 12 from 1986 to 2000. The level is much lower in Singapore and went down further, having declined from 9 in 1986 to 7 in 2004.

In most of the Western Asian countries, teenage fertility is quite low and the most recent data show even lower levels. In Armenia, Bahrain, Cyprus, Georgia, Iraq, Israel, Jordan, Kuwait and the United Arab Emirates teenage fertility was already below 60 births per 1,000 women ages 15 to 19. Despite these already low levels, adolescent birth rates have declined further. On the other hand, there has been a sharp increase in the adolescent fertility rate, a change from 21 in 1986 to 31 in 2004. Saudi Arabia and Yemen also present moderate increases, taking into consideration that the latest data available is from the mid-1990s for both countries.

Eastern European countries have presented consistently low levels of adolescent fertility in the mid-1980s but considerable declines have taken place in the two subsequent decades. The sharpest decline happened in the Czech Republic, followed by Slovakia, Poland, Hungary and

Bulgaria, all in the magnitude of 50% or more. With 40 births per 1,000 adolescents, Bulgaria shows the highest teenage fertility level in the region.

Northern Europe has also presented very low teenage fertility levels with all countries but Ireland showing further declines. The adolescent birth rate in all of the countries in the region was lower than 30 births per women ages 15 to 19 by mid-2000s, with the exception of the Faeroe Islands where no data is available for the 2000s. The Irish fertility rate has increased from 16 to 19 births per adolescent. Sweden, Norway and Denmark display single digit birth rates, a similar level to some Southern European countries, including Andorra, Italy, San Marino and Slovenia. Slovenia shows quite a remarkable decline, from 37 in 1986 to 6 in 2003. The only country in Southern Europe to show an increase in adolescent fertility is Malta, with an increase from 13 to 17 births per adolescent.

Western European countries follow the same pattern of low teenage fertility, portraying even lower rates already in the mid-1980s. All countries in the region, with the exception of Macedonia, showed adolescent birth rates of 24 by mid 1980s and by mid 2000s, the rates reached levels below 14. Despite showing the highest adolescent fertility level in the region, Macedonia present low fertility in both times, 45 in 1986 and 23 in 2004.

There have been increases in the fertility levels of adolescents in the Caribbean. In the Dominican Republic the birth rate went from 91 in 1989 to 118 in 2001, the highest rate in the region. Adolescent birth rate also went up in Guadeloupe, from 18 in 1986 to 26 in 2003. In all other countries in the region the adolescent birth rate went down, although at varying magnitudes.

The sharpest declines, with magnitudes of 30% of higher, happened in Cuba, Jamaica, Montserrat, Saint Lucia and Trinidad and Tobago.

In the earlier period Central American countries had consistently higher adolescent fertility levels than Caribbean countries, ranging from 93 in Panama to 135 in Honduras. This pattern remains in the late 1990s and 2000s although all countries in the region showed declines or practically no change. In Mexico for example, the adolescent fertility rate remained unchanged from 1986 to 2000 at 94 births per women ages 15 to 19. The adolescent birth rate also shows stability in Honduras, ranging from 135 in 1987 to 137 in 1999. Belize showed the sharpest decline in the region, going from 129 in 1986 to 80 in 1998.

In South America, there have been increases in teenage fertility in Brazil, Colombia and Uruguay and virtually no change in Ecuador and the French Guiana. In Brazil the rise was from 58 to 62 from 1986 to 1998 whereas in Colombia it was from 70 to 92 from 1988 to 2003 and in Uruguay the birth rate went from 59 in 1986 to 81 in 2002. The highest levels of adolescent fertility in the region are found in Colombia, the French Guiana, Bolivia and Venezuela, all above 80 births per 1,000 women ages 15 to 19.

In general, Northern America shows adolescent fertility levels lower than those found in South and Central America. Canada presents the lowest fertility rate in the region, 23 in 1987 and 14 in 2003. The United States shows a decline of 16% in the adolescent birth rate, from 51 in 1986 to 43 in 2002. Australia and New Zealand show consistently low rates of teenage fertility with

further declines from the mid-1980s to the mid-2000s. In Australia, the rate went from 21 in 1986 to 16 to 2002 and in New Zealand in went from 30 in 1986 to 27 in 2004.

In Fiji and New Caledonia, the two only Melanesian countries where there is data available for the 2000s, the adolescent birth rate went from 53 in 1986 to 35 in 2002 and from 44 in 1987 to 20 in 2003, respectively. A similar pattern of decline is found in Guam, whereas Palau presents an 8% increase in the adolescent birth rate, going from 73 in 1990 to 79 in 1995. There is no trend data available for any of the Polynesian countries.

The patterns described above can also be observed in Figures 1 and 2. Figures 1 and 2 will provide stylized maps of the adolescent birth rates throughout the world using data from the mid-1980s and mid-2000s, respectively.

In this second part of the paper we will correlate the trends in adolescent fertility we discussed above with the trends in overall fertility rates throughout the world, culminating at a typology of countries. Declines in adolescent fertility have not necessarily gone hand-in-hand with declines in overall fertility and there are different patterns of adolescent fertility change over the fertility transition. By bringing sexual initiation, marriage patterns, extra-marital childbearing and contraceptive prevalence into the picture we are able to understand how these different patterns emerge and interconnect.

Interrelations between Adolescent Fertility and Total Fertility

We start by exploring the interrelations between adolescent fertility and total fertility. The proportion of fertility in adolescence, or PAF, represents the percentage of total fertility that would occur at ages 15 to 19 among a hypothetical cohort experiencing the current age-specific fertility rates over its reproductive lifetime. Caution should be used in interpreting PAF as it can increase while the underlying adolescent birth rate is decreasing. That is, depending on how fast fertility at older ages is decreasing relative to adolescent fertility, the proportion of fertility in adolescence may rise even when adolescent fertility is dropping (see figures 3 and 4). In fact, figure 3 shows that most countries have experienced lengthy periods over which PAF has increased steadily as fertility declines.

Indeed, during the initial stages of the fertility transition, fertility at older ages declines because contraception is used to limit family size. In such contexts, PAF would increase irrespective of

what is happening to the adolescent fertility rate. Figure 4 illustrates different combinations of trends in fertility decline and their impact on trends in PAF. Each panel shows age-specific fertility changing from an initial profile (solid line) to a new profile (dotted line). In the case of postponement of fertility (panel a), both the adolescent birth rate and PAF decline: there are less children being born at adolescent ages and they represent a smaller proportion of total fertility, which remains unchanged. In a scenario of pure quantum decline (panel b), the teenage birth rate goes down in the same proportion as total fertility and PAF remains unchanged. When fertility rates decline only at older ages (panel c), the adolescent birth rate remains constant but PAF increases. This is what often happens during the first stages of the transition to low fertility.

Furthermore, the values of PAF are also misleading in relation to inter-country comparisons. Consider, for instance, the cases of Cameroon and Colombia. In Cameroon, the adolescent birth rate is very high partly because fertility is high at all ages. Hence, PAF is lower than 15 per cent. In Colombia, where total fertility is already close to 2.5 children per woman, the teenage birth rate is lower than in Cameroon, but PAF is higher.

We will next offer additional examples of how PAF and the adolescent birth rates are linked and provide a typology of where countries would fall based on their levels of sexual initiation, marriage patterns, extra-marital childbearing and contraceptive prevalence. Through this typology we are able to understand how these different patterns emerge and interconnect.

[Figures 1 and 2 about here]

Fig. 3: Changes in ASFR1519 and PAF in different scenarios of fertility change

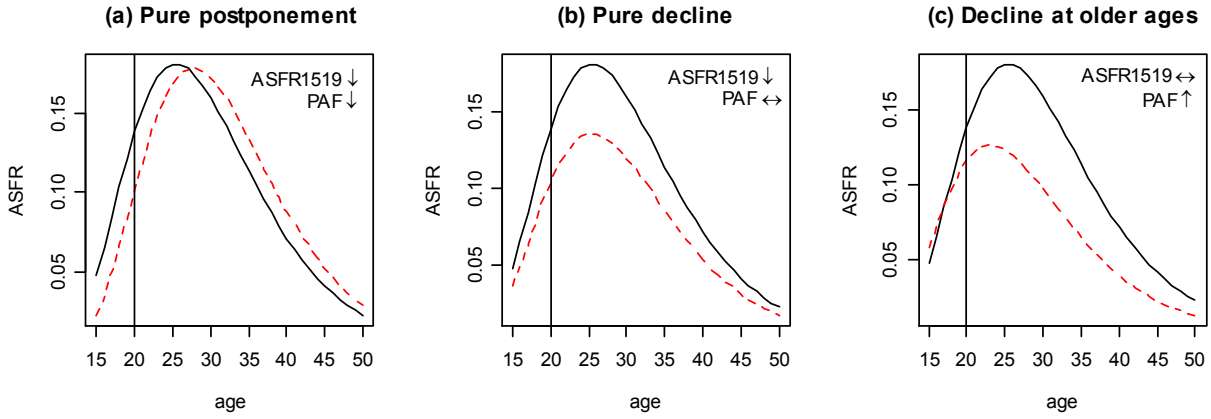
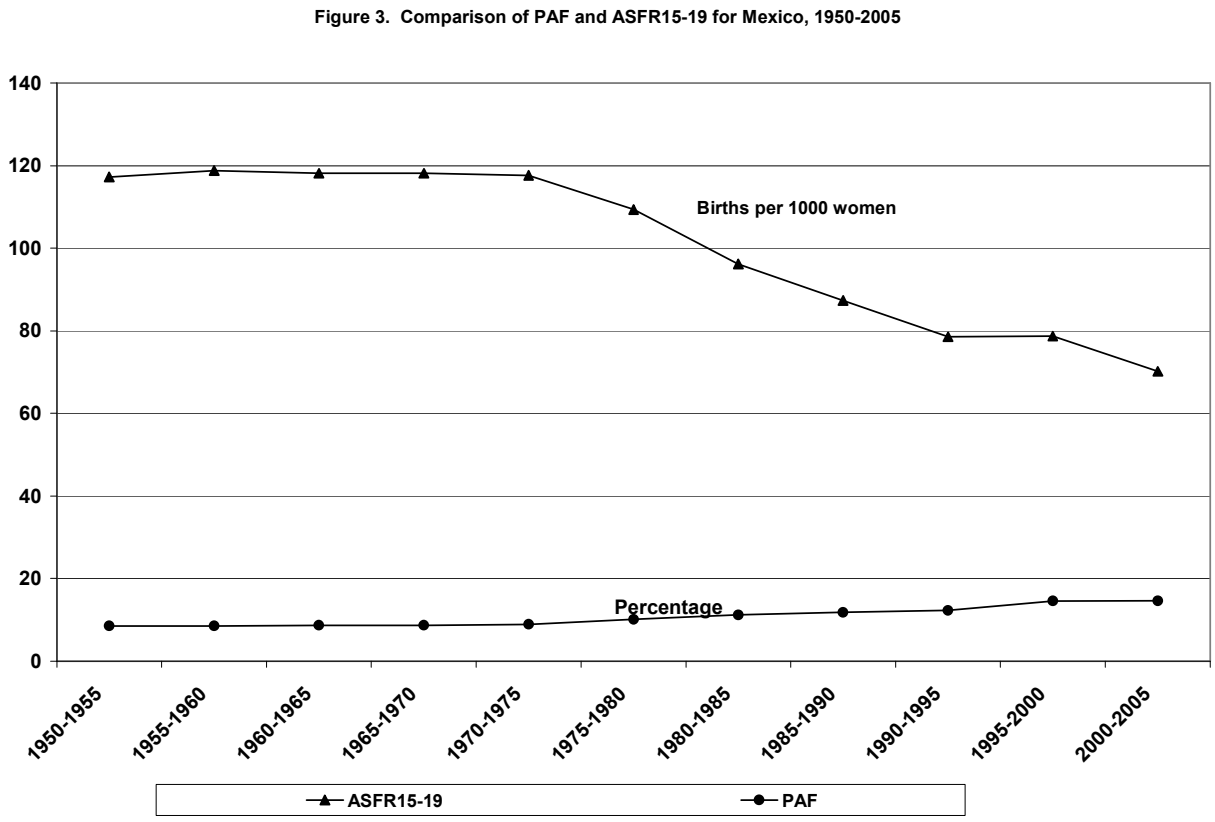


Figure 4. Comparison of PAF and Adolescent Birth Rate for Mexico, 1950-2005



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