ADOLESCENT FERTILITY IN THE DEVELOPING WORLD: LEVELS AND TRENDS IN THE 1990s AND EARLY 2000s

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Abstract: This paper presents an overview of the levels and trends of adolescent fertility for 51 developing countries, based on data from the Demographic and Health Surveys. In the late 1990s and early 2000s, high rates of adolescent fertility still prevailed in more than half of the countries, especially in sub-Saharan Africa and South Asia. During the past decade, adolescent fertility rates decreased in the great majority of the countries. The notable exceptions are six countries in sub-Saharan Africa and Latin America and the Caribbean—Brazil, Colombia, the Dominican Republic, Haiti, Malawi and Mozambique where the rates increased. However, the declines were rather modest. The fertility rates of 18-19-year-olds are much higher but have been declining faster than the fertility rates of 15-17-year-olds. In some countries, the rates for the younger age group have even been increasing. Residence in an urban area and higher education are associated with lower rates of adolescent fertility. However, rates have not necessarily declined in urban areas and among better-educated adolescents.

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[1] The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the United Nations.

INTRODUCTION

Adolescent pregnancy and childbearing have important deleterious consequences not only at the global level but also at the societal and personal levels. Globally, the rates of population growth are more rapid when women have their first child in their teen years (Mazur, 1997; Senderowitz and Paxman, 1985; Singh, 1998) because early initiation into childbearing lengthens the reproductive period and subsequently increases fertility. At the societal level, the strong association between adolescent childbearing and low levels of educational achievement for young women brings about a negative impact on their position in and potential contribution to society (United Nations, 1995).

At the level of the adolescent woman (and of her family), negative social and economic consequences usually result from childbearing. The majority of adolescents who become pregnant are still in school. Yet, in most cases, they get expelled from school when they get pregnant, and schools do not facilitate resumption of education after the birth, particularly in the developing countries (Alan Guttmacher Institute, 1997). As a result of school dropout or interrupted education, women who become mothers at a young age often have a lower level of educational attainment, which leads to loss of earning opportunities and poverty (Singh, 1998). Very young mothers also tend to not be emotionally or financially prepared to care for and bring up a child. Usually they have no conception of the needs of their infants or children, and as a result, they tend to neglect or even abandon their children to the care of others. The rapidly increasing numbers of "street children" in urban areas of developing countries is a phenomenon that may be partly linked to teenage pregnancy (Cunningham and Boult, 1996).

In many countries, an unmarried adolescent mother is likely to experience social ostracism, which may result in rejection by her family and peers. Her children also suffer psychological consequences, such as not knowing who their father is, a lack of a father figure as a role model, and the trauma of guilt for the mother's ill-fortune and subsequent poverty. Absence of the father role-model has been shown to affect boys in particular. They tend to develop a negative image of females which can lead to violence against women (including rape) in young adulthood (Cunningham and Boult, 1996). Early childbearing can also have negative effects on domestic life. Births to unmarried adolescents are unplanned, which leads to unhappiness, marital conflict resulting from marrying in order to have a child born within a socially recognized union, and disappointment because of failure to complete school (Singh, 1998).

The severity of the social and personal consequences of adolescent childbearing is greater the younger the age at birth. The level of schooling a young woman achieves is likely to be lower; she is more likely to be unmarried and to depend on her family for support, if they accept her and the baby (Bruce, Lloyd, and Leonard, 1995) and she is less likely to have the opportunity to develop her own identity (Singh, 1998).

Beyond those social and economic consequences, the physical and health consequences of early motherhood for the mother and her child are even more problematic (Buvinic and Kurz, 1997; World Health Organization, 1995). Teenage

mothers are more likely to suffer from severe complications during delivery due to physiological immaturity, which results in higher morbidity and mortality for both themselves and their newborns. These health risks are greater for younger than for older adolescents (Zabin and Kiragu, 1998). Adolescent pregnancy may also encourage illegal abortion, which is usually performed under unsafe conditions leading to elevated risks of pelvic infection and infertility (Bledsoe and Cohen, 1993).

Because of these well documented adverse consequences of early childbearing, major international conferences convened under the auspices of the United Nations, such as the International Conference on Population and Development held in Cairo in 1994, the Fourth World Conference on Women held in Beijing in 1995, the Millenium Summit held in New York in 2000, provide international recognition of adolescents' reproductive rights. In particular, they call for teenage pregnancy and motherhood to be given special emphasis on the social and health agenda. By endorsing the conferences' consensus documents (the latest being the Millenium Development Goals), governments pledged to adjust their legislations to protect reproductive rights, while formulating and implementing policies to promote these rights. Many countries have recognized that teenagers should have their rights protected and that early sexual and childbearing initiations are important factors contributing to reproductive ill health, including high maternal mortality and HIV/AIDS levels.

A question that comes to mind naturally is whether adolescent childbearing has recently decreased given this renewed interest for and declarations in favor of lowering adolescent pregnancy and childbearing from the international community and governments. A 1998 review of adolescent childbearing in the developing world (Singh, 1998) showed that large declines in adolescent fertility had occurred in North Africa and Asia. As a result of these declines, the majority of the countries of these two regions reached moderate levels of adolescent fertility (between 60 and 90 live births per 1,000 women aged 15-19 per year) in the late 1980s and early 1990s. Declines had also started to happen in sub-Saharan Africa, but the levels were still high (above 100 live births per 1,000 women aged 15-19 per year) in most countries of this region by the end of the 1980s and the beginning of the 1990s. In Latin America and the Caribbean, where adolescent childbearing had started at moderate levels, declines were less prevalent and some small increases occurred in the 1980s. Finally, urbanization and higher education were found to be associated with lower rates of adolescent childbearing. In addition, declines in adolescent childbearing were found to be more common and larger in size in urban areas than in rural areas, as well as among better-educated women than among less-educated women.

The present study presents an overview of the levels and trends in adolescent fertility during the 1990s and the early 2000s across many developing countries in Africa, Asia, and Latin America and the Caribbean. It provides an update to the findings of the above mentioned review. The main questions that it seeks to answer are the following. Has the level of adolescent fertility in the developing world continued to decrease over the past decade? If yes, has it decreased equally among younger adolescents and older adolescents? Is adolescent fertility still higher in rural areas and among less-educated

women than in urban areas and among less-educated women? Is adolescent fertility still declining faster in urban areas and among better-educated women?

DATA AND METHODS

Data sources

The data used in this study to document the levels of adolescent childbearing in the developing world come from the Demographic and Health Surveys (DHS) for 51 countries. Although 61 countries have publicly available DHS individual data on adolescent fertility, only those countries where the most recent datum was collected in 1990 or later were included in the analyses. In more than half of the countries, the latest survey was conducted in the early 2000s, which means that the data collected are recent enough to depict current levels of adolescent fertility. The 51 countries include 29 countries in Africa, 13 countries in Asia, and nine countries in Latin America and the Caribbean.

The analysis of trends is based on data from the subset of 39 countries where at least two surveys have been conducted. The 39 countries include 23 countries in Africa, eight countries in Asia, and eight countries in Latin America and the Caribbean. On average, the oldest and most recent data pertaining to each country are separated by ten years.

Methodology

For the purpose of this study, adolescents are defined as women aged 15 to 19. The level of adolescent childbearing is examined here with the age-specific fertility rate (ASFR) for women aged 15-19. Because previous studies have shown that the adverse effects of adolescent childbearing are more important for younger than for older adolescents, the timing of childbearing is captured by further distinguishing between the fertility rates of women aged 15-17 and that of women aged 18-19. For each country, trends of adolescent fertility are analyzed by comparing the ASFRs for women aged 15-19 from successive surveys.

The fertility rates presented in this study are computed from the DHS individual recode files. The ASFRs are based on the births that occurred during the 1- to 36-month period before the survey in order to reproduce the rates presented in the great majority of the DHS final reports. To obtain the ASFRs, the following procedure was applied. Each birth occurring during the 1-36-month period before the survey was assigned to the mother's age group at the time of birth. Then the person-years lived in each age group during the 1-36-month period of study was assessed for all women (whether they gave birth during that period or not). Finally, the ASFR for each specific age group was computed by taking as numerator the sum of all the births belonging to that age group, and as denominator the sum of all the person-years lived by all women in that age group. In sub-Saharan Africa and Latin America, the DHS interviewed samples of all women of reproductive age irrespective of marital status. Therefore, for the countries of these two

regions, the tabulations of the births and the person-years lived are computed by using as weights just the sample weights provided in the DHS individual recode files (V005 variable divided by 1000000).

In most countries of Asia and Northern Africa, however, the DHS samples included only ever-married women. In the latter countries, to get ASFRs estimates based on all women, it is necessary to inflate the number of person-years lived by ever-married women by factors representing the proportion of women who were ever-married in each age group at the time of the survey. These factors, called "all women correction factors", are calculated from the data collected in the household schedule and are also provided in the individual recode files for surveys conducted after 1990. They are treated as adjustments to the respondent sampling weight variable for each woman, multiplying the weight variable for the woman by her appropriate all women factor. In the DHS individual recode files, four standard variables contain the all women correction factors: AWFACTT contains the all women factor for total population; AWFACTU contains the all women factor for education (none, primary, secondary, higher); AWFACTE contains the all women factor for place of residence (urban, rural); and AWFACTR contains the all women factor for region (the list of regions varies from country to country). All women factors are specific for individual years of age and specific for the particular subgroup to be estimated. Thus, to compute ASFRs by type of place of residence for instance, the AWFACTU variable should be used to adjust the sample weights for the person-years lived (Rutstein and Rojas, 2003).

Note that only the denominator of the ASFRs, that is, the person-years lived during the three-year period of study, is adjusted in the ever-married samples. The numerator, that is, the number of births occurring during the period, is not. This partial adjustment is performed because never-married women in Asia and Northern Africa are assumed to not have given birth during the three-year period. The evidence based on the timing of first birth and timing of first marriage suggests that very few births occur outside of marriage in these two regions so this assumption should lead to minimal under-estimation of ASFRs in these regions. For example, the median age at first birth is always at least one year higher than the median age at first marriage for women aged 25-49 in all the countries with ever-married samples included in this study (ORC Macro, 2006).

When the country-specific results are aggregated into averages for the regions of the developing world—Africa, Asia, and Latin America and the Caribbean—they are not weighted. Finally, the reference date presented for the fertility rates is computed as the survey date minus 1.5 years. This reference date is the middle of the three-year period before the survey.

RESULTS

Levels of adolescent fertility

Overall levels

The extent of adolescent childbearing, as measured by the age-specific fertility rate for women aged 15-19, or ASFR(15-19), are presented in Table 1 and Figure I. These data, pertaining on average to 1998, indicate that the level of adolescent fertility varies widely across developing countries. The highest rate, found in Niger and standing at 218 live births per 1,000 women aged 15-19 per year, or 218 per thousand, is ten times as high as the lowest rate, 22 per thousand, found in Vietnam[2]. Despite this considerable variability, it can be said that high levels of adolescent fertility still prevail in the developing world because rates of at least 100 per thousand are found in more than half of the countries.

The countries with the highest levels of adolescent fertility are located mainly in sub-Saharan Africa. Consequently, Africa has the highest average rate of adolescent fertility, 125 per thousand, because 27 of the 29 African countries included here belong to sub-Saharan Africa. Twenty-one countries in sub-Saharan Africa have an ASFR(15-19) above 100 per thousand, which is considered high for the purpose of this study. Eleven of these countries report rates above 150 per thousand, which are considered very high. One country, Niger, as seen above, even has a rate above 200 per thousand. The African countries with the lowest rates are the two North African countries included, Morocco and Egypt, with rates of 32 per thousand and 47 per thousand respectively. They are followed by Rwanda and Comoros whose rates are in the 50s per thousand, then by Ghana and South Africa with rates in the 70s per thousand, and finally by Namibia and Togo with rates in the 80s per thousand. Except for Rwanda and Togo, all these low adolescent fertility countries are intermediate fertility countries, that is, with a total fertility rate (TFR) below 5 children per woman.

Countries in Latin America and the Caribbean have the next to highest rates, averaging 95 per thousand for the nine countries included. In this region though, countries are more or less uniform in terms of adolescent fertility level, unlike in Africa where rates vary considerably. Only three countries, including the Dominican Republic, Guatemala and Nicaragua, have rates above 100 per thousand. Among the remaining countries, none has a rate below 61 per thousand, which is the rate for Peru around 2002.

Asian countries present the lowest rates of adolescent fertility: 72 per thousand, on average, for the 13 countries included. Only four countries, including Bangladesh, India, Nepal and Yemen, have rates above 100 per thousand. The rest of the countries have moderate to low levels, with rates varying from 22 per thousand in Vietnam to 75 per thousand in Kyrgyzstan. In general, the countries of South and West Asia have high rates

[2] By comparison, the adolescent fertility rates in the developed countries ranged from 4 per thousand in Japan to 54 per thousand in the United States in the mid-1990s (Singh and Darroch, 2000).

of adolescent fertility whereas the countries of Central and South-east Asia have low rates.

Even though adolescent fertility rates are high in absolute values in sub-Saharan Africa, the proportion of TFR contributed by ASFR(15-19) is higher in Latin America and the Caribbean (14 percent on average) than in sub-Saharan Africa (12 percent on average) as shown in Table 1. Also, even if the contribution of adolescent fertility to overall fertility is the lowest in Asia on average, two countries of Asia—Bangladesh and India—where the contributions are 23 percent and 19 percent respectively, present the highest contributions among all countries included (in Latin America and the Caribbean, Colombia and the Dominican Republic's adolescent fertility rates also contribute 19 percent to their respective TFRs). These figures suggest that there is more scope for reducing overall fertility in Latin America and the Caribbean and in South Asia.

These results do not however mean that lowering adolescent fertility will not make any significant difference in the fertility level of African countries. Figure I shows a clear association between the contribution of adolescent fertility to total fertility and the level of adolescent fertility in Africa: the proportion of TFR contributed by adolescent fertility rate is higher in countries where adolescent fertility is higher and the association is almost linear with an R^2 of 0.73. This relationship means that high levels of adolescent fertility contribute to the high levels of total fertility still prevalent in the countries of this region. Thus, if the goal is to decrease high total fertility in sub-Saharan Africa, interventions should not forget to target its adolescent population whose fertility rates are still high enough to contribute a non-trivial portion towards the total fertility of this sub-region.

Levels by age group

In every country, the value of the overall adolescent fertility rate is between the value of the fertility rate for adolescents aged 15-17 and the value of the fertility rate for adolescents aged 18-19. As Figure II shows, a strong correlation ($R^2 = 0.75$) exists between the fertility rates of the younger group and that of the older group of adolescents. Fertility levels among younger adolescents tend to be high in countries where fertility levels among older adolescents are high. By contrast, fertility levels among younger adolescents tend to be low in countries where fertility levels among older adolescents are low.

Compared to the rate for women aged 15-17, or ASFR(15-17), the rate for women aged 18-19, or ASFR(18-19), is on average twice as high in Africa and Latin America and the Caribbean, and three times as high in Asia. On the one hand, this result is reassuring because it means that most of the adolescent fertility takes place in the older age group, which is less deleterious for the health of the mother and child. On the other hand, even if ASFR(15-17) is below 100 per thousand in the great majority of the countries of Asia and in all the countries of Latin America and the Caribbean, the fact that almost half of the countries of Africa still have rates over 100 per thousand for the younger age group, attaining 130 per thousand or higher in Chad, Guinea, Madagascar,

Mali, Mozambique, and Niger, is a matter of great concern. In Asia, only Bangladesh has a high fertility rate for adolescents aged 15-17—110 per thousand. This result is very likely to be caused by the very low age at first marriage in this country where the majority of births occur within marriage. Among women aged 20-24 interviewed in the 2004 Bangladesh Demographic and Health Survey, the median age at first marriage was 16, which was the lowest median age at first marriage for all the countries where this indicator could be calculated using DHS data collected recently (ORC Macro, 2006).

Figure III shows that the ratio between the fertility level of older adolescents and the fertility level of older adolescents does not vary much across countries, except for a few outliers located mainly in Asia. The ratio typically ranges from 1.5 to 3.0. In Africa and Latin America and the Caribbean however, the ratio tends to be lower in countries where the level of overall adolescent fertility is at high levels and to be higher in countries where adolescent fertility is at low levels. In Africa, for instance, the ratio is in the range of 4 to 6 in such countries as Comoros, Egypt, Morocco, and Rwanda, where adolescent fertility at low to moderate levels. By contrast, the ratio is below 2 in high adolescent fertility countries such as the Central African Republic, Chad, Cote d'Ivoire, Gabon, Guinea, Madagascar, Mali, Mozambique, and Niger, meaning that younger adolescents are bearing children at almost the same rate as older adolescents in high adolescent fertility countries. This result means that if interventions to push up the timing of first childbearing to age 18 succeed, that will surely have a significant impact in lowering adolescent fertility levels in developing countries.

Trends in adolescent fertility

Overall trends

The previous section has shown that moderate to high levels of adolescent childbearing are currently prevalent in the developing world. To what extent has adolescent fertility changed in the past decade? Have the adolescent fertility rates gone in the same direction and with the same magnitude for younger and older adolescents? These are the questions that this section tries to answer.

Table 2 and Figure IV show that in the majority of the countries, the level of adolescent fertility in the developing world decreased from the late 1980s/early 1990s to the late 1990s/early 2000s. However, the amount of decline, as measured by the amount of negative annual change in the ASFR(15-19) in terms of per thousand points, was rather modest because it typically ranges from 0 to 2 per thousand points per year in the countries analyzed here. In Africa, 18 out of the 23 countries with data showed declining trends during the past decade. The two Northern African countries included, Egypt and Morocco, belong to the group of countries where adolescent fertility has declined, although it must be said that Egypt's decline has been much steeper than the one experienced by Morocco, owing to the fact that Morocco had started with an already low level of adolescent fertility in the early 1990s (40 per thousand compared to 63 per thousand in Egypt). In sub-Saharan Africa, countries with the largest declines include Senegal, Togo and Ghana where the average amount of decline is above 3 per thousand

points per year during the last decade. Burkina Faso, Cote d'Ivoire, and Namibia also experienced declines of above 2 per thousand points per year. By contrast, adolescent fertility rates increased in Malawi and Niger from the early 1990s on. Increases in the rates, occurring a little bit later (starting in the mid-1990s) are also evident in Mozambique, Cameroon and Nigeria. For Mozambique, the increase in the adolescent fertility rate coincides with the end of the war. The latter must have had a depressing effect on fertility in general so when it ended, the population, including adolescents, probably made up for the loss of marriage and fertility opportunities during the war, thus explaining the increase in fertility rates from the mid-1990s on. For Cameroon and Nigeria, by contrast, the increase in adolescent childbearing occurring after the mid-1990s follows a period of clear decrease that had started in the late 1980s. In these two countries, these apparent reversing trends are very likely to be the result of the general underreporting of births noted in the DHS conducted in these two countries in the late 1990s (Institut National de la Statistique and ORC Macro, 2004; National Population Commission and ORC Macro, 2004).

In Asia, six out of the eight countries with data experienced declines. Kazakhstan and Nepal experienced the greatest declines with their adolescent fertility rates falling on average by 6 per thousand and 3 per thousand points per year, respectively, from the early 1990s to the mid- or late 1990s. The exceptions to these declining trends are Turkey where the adolescent fertility rate increased between the early 1990s and the mid-1990s, and the Philippines where the rate increased slightly after 1995 after a decrease between the early 1990s and the mid-1990s.

In Latin America and the Caribbean, half of the eight countries with data experienced either long-term decreases in adolescent fertility rates such as Bolivia, Guatemala, and Peru, or a recent decrease during the mid-1990s to 2000 period such as Nicaragua. The other half experienced either increases, such as Brazil, the Dominican Republic and Haiti or a recent stagnation after an increase such as Colombia. In Brazil the latest data pertain to the mid-1990s so it is not clear whether the increasing trend that had happened since the mid 1980s would continue to the present.

As Figure IV shows, the magnitude of the annual change in adolescent fertility during the 1990s and early 2000s does not depend much on the initial level of adolescent fertility attained in the late 1980s or early 1990s. The exceptions to this lack of association are to a certain extent the countries of Latin America and the Caribbean. In this region, countries with a moderate initial level of adolescent fertility, such as Brazil, Colombia and Haiti, tend to experience an increase in adolescent childbearing during the 1990s while countries with a high initial level of adolescent fertility, such as Guatemala and Nicaragua, tend to experience a decrease in adolescent childbearing during the 1990s. Peru, whose initial level was moderate too, experienced a slight increase starting in 1990 but that trend was reversed starting in the mid-1990s.

The declining trends in adolescent fertility rates seen in the majority of the developing countries are not always associated to increases in contraceptive use among adolescents. The countries with the fastest increases in contraceptive use among

adolescents include Mozambique, Namibia, Zambia, and Egypt in Africa; Bangladesh, Indonesia, Nepal, and Vietnam in Asia; and Peru in Latin America. In these countries, contraceptive prevalence among women aged 15-19 grew at 1 percentage point or more annually from the late 1980s/early 1990s to the late 1990s/early 2000s (ORC Macro, 2006). Yet those are not the countries with the fastest decline in adolescent fertility. In fact as was shown earlier, adolescent fertility has been increasing in Mozambique despite the fact that contraceptive use among adolescents has been increasing too. These contradictory trends between fertility and contraceptive use are also prevalent in many countries of Latin America and the Caribbean such as Brazil, Colombia, the Dominican Republic and Haiti.

Trends by age group

Turning now to age differences in the trends of adolescent fertility rates, it can be seen from Table 3 that during the 1990s, both the rates for the 18-19-year-olds and the rates for 15-17-year olds have declined in the majority of countries. The rates for the older group have declined faster than the rates for 15-17-year-olds, owing certainly to the fact that the rates for the older group are higher than the rates for the younger group. In some countries though, including Benin, Chad, Egypt, Madagascar, Mozambique, Niger, Tanzania in Africa, and Bolivia and Guatemala in Latin America, the rates for adolescents aged 15-17 have been increasing when the rates for those aged 18-19 have been decreasing. These disturbing trends are probably the result of greater unprotected sexual activity among younger adolescents. Indeed, a 1998 study of sexual behavior and contraceptive use among adolescents in developing countries revealed that both age at marriage and age at first sexual intercourse have risen, but the increase in age at marriage is greater, resulting in a widening gap, that is, a longer period during which adolescents are at risk of getting pregnant without being married. The results of the same study show that adolescents are unlikely to use a contraceptive method the first time they have sex and are more likely than older women to experience a contraceptive failure (Blanc and Way, 1998).

Socioeconomic differentials

Urban/rural differences

The link between adolescent childbearing and two socioeconomic characteristics, degree of urbanization and educational level, measured respectively by the type of place of residence in which the adolescent lives (urban or rural), and the highest level of education attained by the adolescent (none, primary, or secondary or higher), is examined here. Living in an urban area and having a higher education level are expected to be associated with a lower level of adolescent childbearing mainly via the proximate determinants of fertility. Female adolescents living in urban areas and having a higher education level are, like their older peers with the same characteristics, more likely to have access and use contraceptives and abortion in order to avoid or postpone a pregnancy. More educated female adolescents are also more likely to get married later because increased schooling tends to increase the opportunity cost of marriage for women

(Becker, 1973) and that of early childbearing (Gangadharan and Maitra, 2001). Indeed, urbanization and increased education open better economic alternatives (such as a higher education and a paid job) to getting married and bearing children to women, especially the younger ones. Even within marriage, increased education tends to delay the timing of first birth because in many cases, women have to exit labor force when they start childbearing. Even if they eventually return to work, their employment career experiences a break, which results in lower lifetime earnings.

Besides their depressing effects on adolescent fertility, urbanization and education can also have the opposite effect via earlier age at first sexual intercourse. Increased urbanization and education, together with exposure to Western media, not only weaken traditional and social barriers and taboos (including parental control and authority) regarding sexual relationships and health, but they also give young women material aspirations that they can sometimes meet only through sexual activity (Gueye, Castle and Konaté, 2001). Unfortunately, earlier sexual activity along with an increase in the age at marriage leads to increases in unwanted pregnancies and their associated risks if adolescents lack access to contraception.

According to the data shown in Table 4, there are great variations in age-specific fertility rates for women aged 15-19 by type of place of residence. In all the countries under study, except one, Rwanda, adolescent fertility rates are, as expected, higher in rural areas than in urban areas. In the majority of the countries, rates for adolescents living in rural areas are twice that of adolescents living in urban areas. Ghana and Senegal present the largest differences with the ASFR for rural adolescents being almost three times as high as that for urban adolescents. The two rates are similar in countries where adolescent fertility rates are low, such as Comoros, Ghana, Namibia, and Rwanda in Africa, and Kazakhstan, Turkey, and Uzbekistan in Asia. However, some countries where adolescent fertility is still very high, such as the Central African Republic, Chad, Malawi, and Zambia in Africa, and Bangladesh in Asia, also present rates that are more or less the same between rural and urban areas.

As far as urban-rural differences in adolescent fertility trends are concerned, Table 5 shows that in general, adolescent fertility rates for both urban and rural areas have been decreasing. However, there is no clear relationship between the magnitudes of annual change in urban and rural areas. In many countries, located mainly in sub-Saharan Africa, rates for urban areas have been declining faster than the rates for rural areas. This result is expected given what was said earlier that increasing urbanization is likely to spur declines in adolescent fertility. Yet in many other countries, rates for urban areas have been increasing while rates for rural areas have been decreasing. These countries include Egypt, Rwanda, Bangladesh, Indonesia, Vietnam, Colombia, and Peru. By contrast, in countries such as Mozambique and Niger, the increase in overall adolescent fertility is the result of an increase in the rates in rural areas coupled with a decline in the rates in urban areas.

Educational differences

Table 6 shows that there are also great variations in adolescent fertility rates by level of education. With a very few exceptions, rates are lower the higher the educational level of the adolescents. However, rates for adolescents with a secondary or higher education stand out from the rates of other less educated adolescents. Compared with the fertility rates for adolescents with a secondary or higher education, the fertility rates for adolescents with no education are three times as high in Africa, twice as high in Asia, and four times as high in Latin America and the Caribbean, on average. The differences between the adolescent fertility rates for the highest educational group and the primary education group are narrower with the ratios between the rates of these two groups being around 2 in Africa and Asia, and around 3 in Latin America and the Caribbean, on average. By contrast, the fertility rates of adolescents with a primary education and that of adolescents with no education tend to be similar. A t-test of the difference between the means of the fertility rates of these two groups (assuming equal variance) using all the 51 observations shows that the difference between the two means is statistically equal to 0 at a very high level of significance (mean for the "no education" group = 161; mean for the "primary education" group = 130; t-Statistic = 2.35; and P(T<=t) two-tail = 0.02). In a few countries, including Gabon, Zimbabwe, Philippines, Vietnam, and Peru, the fertility rates for adolescents with a primary education are higher than the rates for adolescents with no education. In the majority of the countries, the rates for adolescents with no education stand above 150 per thousand, that for adolescents with a primary education above 130 per thousand, whereas that for adolescents with a secondary or higher education are below 60 per thousand in more than half of the countries. However, there are still many countries where the rates for the adolescents in the highest educational group is above 100 per thousand, such as in the Central African Republic, Chad, Gabon, Zambia, Bangladesh, and Nicaragua.

CONCLUSIONS AND DISCUSSION

This overview shows that the level of adolescent fertility varies greatly both across and within regions of the developing world. Nevertheless, high levels of adolescent fertility still prevail in the late 1990s and early 2000s because age-specific fertility rates of at least 100 live births per 1000 women aged 15-19 are found in more than half of the 51 countries here. The countries with the highest levels of adolescent fertility are located mainly in sub-Saharan Africa and the lowest levels are found mainly in countries of Northern Africa, Central Asia, and South-East Asia. Countries of Latin America and the Caribbean have moderate levels of adolescent fertility and they tend to be similar in their levels. However, it is in countries of Latin America and the Caribbean as well as in South Asia that the contribution of the adolescent fertility rate to the total fertility rate is the highest and not in sub-Saharan Africa, which means that interventions to lower adolescent fertility will have the most impact on overall fertility and health in Latin America and the Caribbean and in South Asia.

As expected, fertility rates are higher for older adolescents (aged 18-19) than for younger ones (aged 15-17), for adolescents living in rural areas than for those living in urban areas, and for less-educated adolescents than for better-educated ones.

The findings of this review also show that in general, adolescent fertility levels in the developing world decreased from the early 1990s to the late 1990s or early 2000s. However, the amounts of decline were rather modest, typically ranging from 0 to 2 per thousand points per year. A few countries, located mainly in Latin America and the Caribbean, have experienced increases in adolescent fertility despite the fact that contraceptive use among adolescents has increased in these countries. These findings confirm and update an earlier overview of adolescent fertility levels for the 1980s and early 1990s (Singh, 1998). The additional finding provided by this study is that the fertility rates of younger adolescents have been increasing in many countries when the rates for older adolescents have been decreasing. These disturbing results were to be expected given that adolescents in developing countries have been shown to tend to not use a contraceptive method the first time they have sex and to be more likely than older women to experience a contraceptive failure (Blanc and Way, 1998).

Unlike during the 1970s and the 1980s when declines in adolescent fertility were clearly more common and larger in urban areas than in rural areas (Singh, 1998), during the 1990s and early 2000s, declines in urban areas had a tendency of being either slower than or at most as fast as in rural areas. In some countries, rates in urban areas were stagnating or even increasing while rates in rural areas were decreasing. It cannot however be concluded from this surprising result that increasing urbanization does not spur declines in adolescent fertility anymore. Further analysis is needed to assess this relationship more precisely. What can be said is that increasing urbanization may have brought about an increase in sexual activity among adolescents, increase that has not unfortunately been accompanied by an increase in the recourse to effective methods of contraception.

The lack of clear declining trends in this study might be due to differences in quality between the data collected by the successive surveys of each country. A way of avoiding this problem would be to compare the adolescent fertility rates for different cohorts using the same survey (that is, the most recent survey), which was not done in this study. Another shortcoming of this study is the fact that the marital status of the adolescents was not taken into account. Indeed, the negative consequences of adolescent childbearing are in general more important for unmarried than for married women. Much of the adolescent childbearing occurring in developing countries, particularly those in Africa and Asia, involves women who are in union. However, the finding that adolescent fertility rates have declined only slightly, or have even increased over the past decade, in parallel to a general increase in the age at first marriage, makes one wonder whether adolescent fertility has been increasing among sexually active unmarried adolescents.

Despite the lack of clear trends, the findings of this paper suggest that the fertility of adolescents belonging to the younger age group (15-17) matter a lot to the overall level of adolescent fertility. Therefore, programs and interventions targeting young adolescents, including those living in urban areas, are needed to lower the high levels of adolescent childbearing still prevalent in the majority of the developing countries.

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Figure I. Adolescent fertility rate and proportion of TFR contributed by adolescent fertility rate, selected developing countries

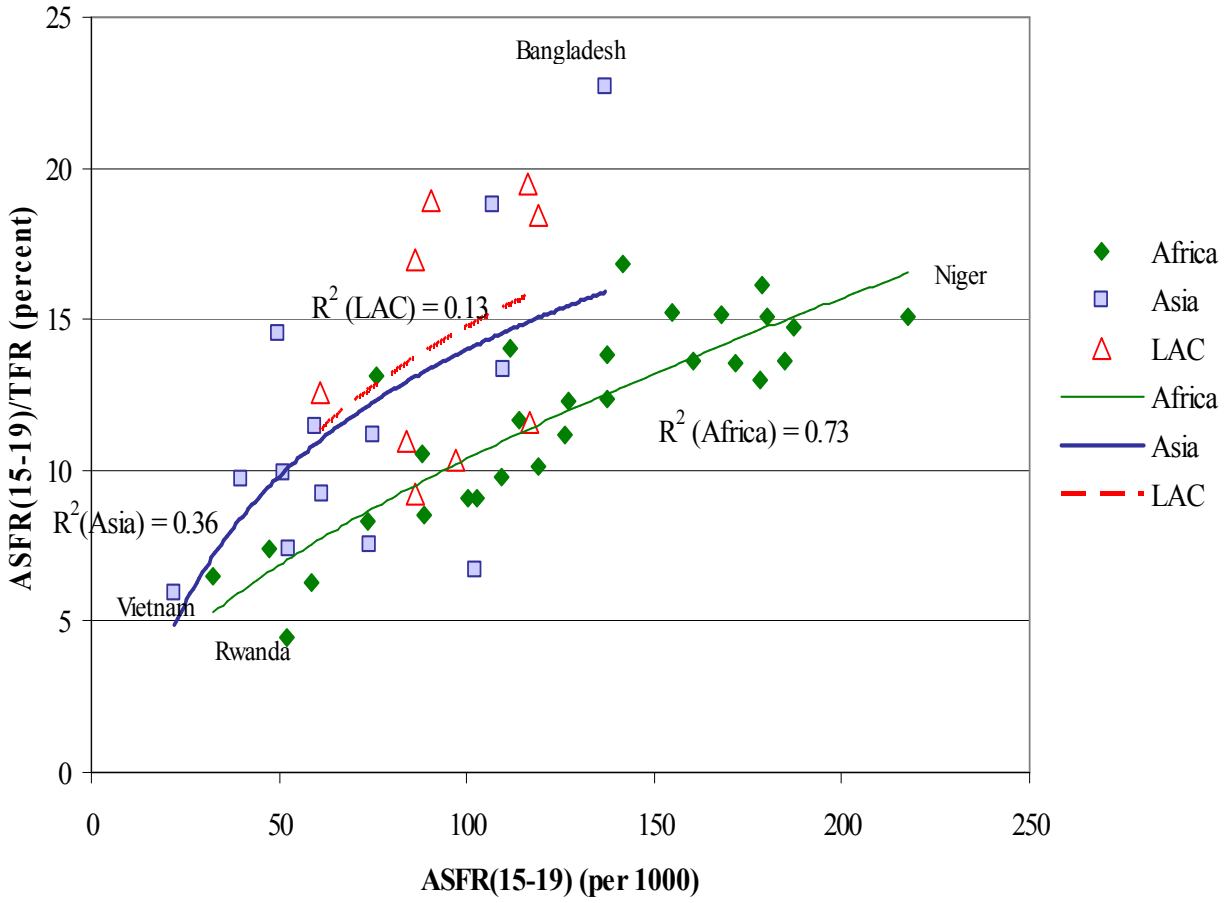

Figure II. Fertility rates for adolescents aged 15-17 and 18-19, selected developing countries

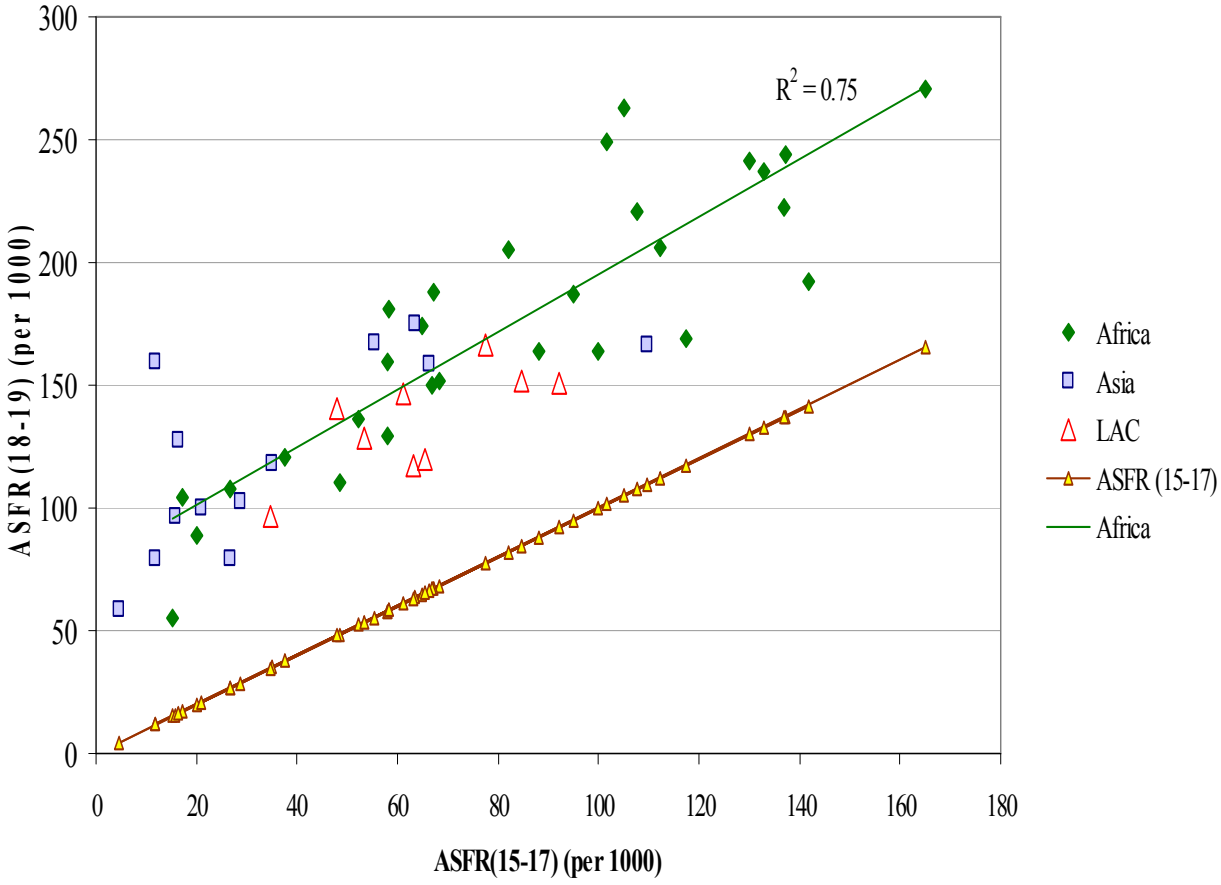

Figure III. Fertility rate for adolescents aged 15-19, and ratio between the fertility rate of adolescents aged 18-19 and the fertility rate of adolescents aged 18-19, selected developing countries

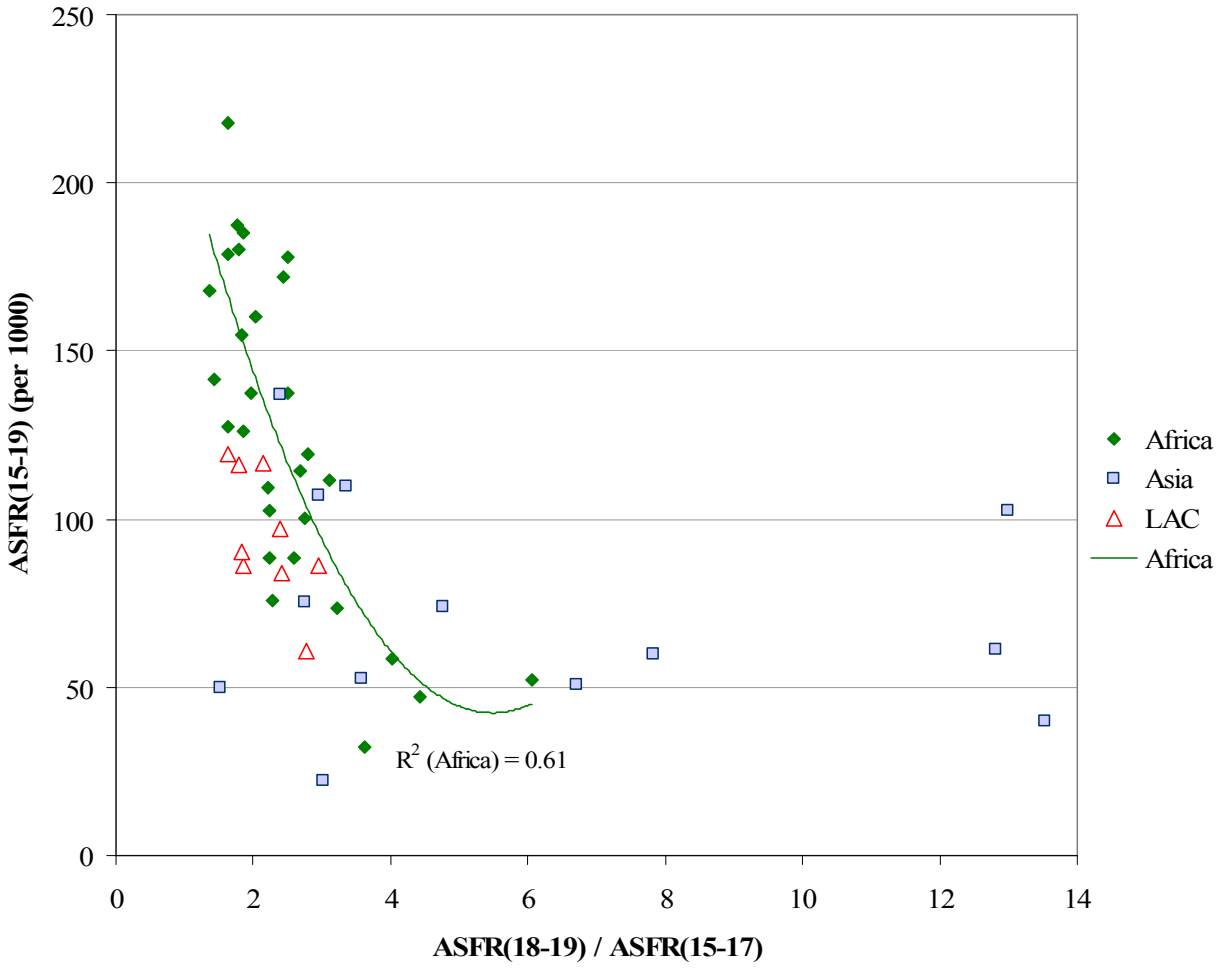

Figure IV. Annual change in adolescent fertility rate by the level of adolescent fertility in the late 1980s-early 1990s

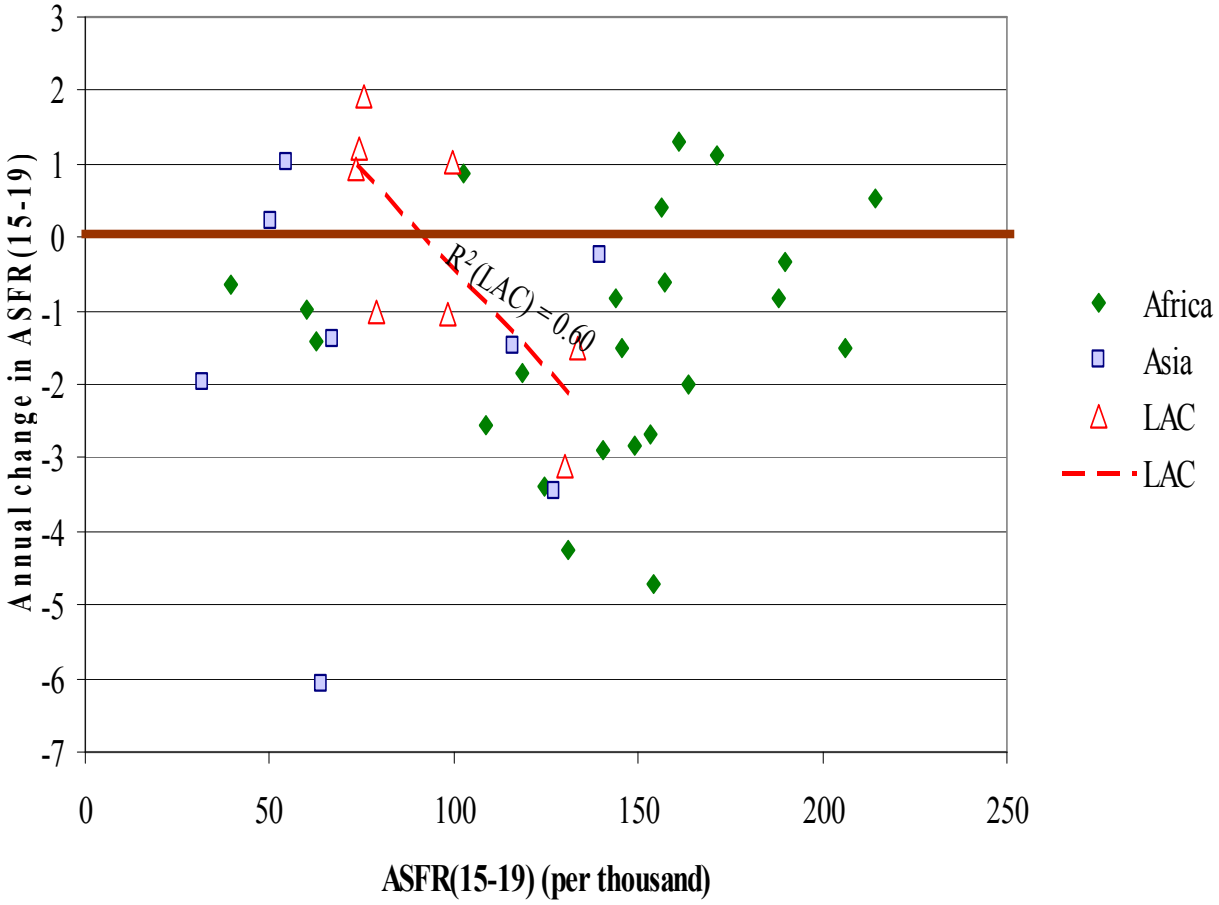

Table 1. Total fertility rate and age-specific fertility rate for women aged 15-19, 51 developing countries

Country and survey year(s)	*Reference year*[a]	*TFR*	*Age-specific fertility rate for women aged 15-19*	*Proportion of total fertility contributed by adolescent fertility*[b]
Africa				
Benin 2001	1999.5	5.6	109	10
Burkina Faso 2003	2001.5	5.9	119	10
Cameroon 2004	2002.5	5.0	138	14
Central African Republic 1994 1995	1993	5.1	155	15
Chad 2004	2002.5	6.3	187	15
Comoros 1996	1994.5	4.6	59	6
Cote d'Ivoire 1998 1999	1997	5.2	127	12
Egypt 2003	2001.5	3.2	47	7
Ethiopia 2000	1998.5	5.5	100	9
Gabon 2000	1998.5	4.2	142	17
Ghana 2003	2001.5	4.4	74	8
Guinea 1999	1997.5	5.5	168	15
Kenya 2003	2001.5	4.9	114	12
Madagascar 1997	1995.5	6.0	180	15
Malawi 2000	1998.5	6.3	172	14
Mali 2001	1999.5	6.8	185	14
Morocco 2003 2004	2002	2.5	32	7
Mozambique 2003 2004	2002	5.5	179	16
Namibia 2000	1998.5	4.2	88	11
Niger 1998	1996.5	7.2	218	15
Nigeria 2003	2001.5	5.7	126	11
Rwanda 2000	1998.5	5.8	52	4
Senegal 1997	1995.5	5.7	103	9
South Africa 1998	1996.5	2.9	76	13
Tanzania 1999	1997.5	5.6	138	12
Togo 1998	1996.5	5.2	89	9
Uganda 2000 2001	1999	6.9	178	13
Zambia 2001 2002	2000	5.9	160	14
Zimbabwe 1999	1997.5	4.0	112	14
Average (29 countries)	***1998.8***	***5.2***	***125***	***12***

Table 1 *(continued)*

Country and survey year(s)	*Reference year*[a]	*TFR*	*Age-specific fertility rate for women aged 15-19*	*Proportion of total fertility contributed by adolescent fertility*[b]
Asia				
Armenia 2000	1998.5	1.7	50	15
Bangladesh 2004	2002.5	3.0	137	23
India 1998 1999	1997	2.8	107	19
Indonesia 2002 2003	2001	2.6	51	10
Kazakhstan 1999	1997.5	2.0	40	10
Kyrgyzstan 1997	1995.5	3.4	75	11
Nepal 2001	1999.5	4.1	110	13
Pakistan 1990 1991	1989	4.9	74	8
Philippines 2003	2001.5	3.5	53	7
Turkey 1998	1996.5	2.6	60	11
Uzbekistan 1996	1994.5	3.3	61	9
Vietnam 2002	2000.5	1.9	22	6
Yemen 1991 1992	1990	7.7	102	7
Average (13 countries)	***1997.2***	***3.4***	***72***	***11***
Latin America and the Caribbean				
Bolivia 2003	2001.5	3.8	84	11
Brazil 1996	1994.5	2.5	86	17
Colombia 2004 2005	2003	2.4	90	19
Dominican Republic 2002	2000.5	3.0	116	19
Guatemala 1998 1999	1997	5.0	117	12
Haiti 2000	1998.5	4.7	86	9
Nicaragua 2001	1999.5	3.2	119	18
Paraguay 1990	1988.5	4.7	97	10
Peru 2004	2002.5	2.4	61	13
Average (9 countries)	***1998.4***	***3.5***	***95***	***14***

Source: Demographic and Health Survey individual recode files.

[a] The reference year is equal to the middle of the survey years minus 1.5.

[b] The proportion of total fertility contributed by adolescent fertility is equal to the age-specific fertility rate for 15-19-year-olds multiplied by 5 and divided by the total fertility rate.

Table 2. Trends in adolescent fertility rate (ASFR(15-19)), from the late 1980s/early 1990s to the late 1990s/early 2000s, 39 developing countries

	ASFR(15-19)		
Country	*Late 1980s or early 1990s*	*Late 1990s or early 2000s*	*Annual change in ASFR(15-19)*
Africa			
Benin	119	109	-1.8
Burkina Faso	149	119	-2.8
Cameroon	164	138	-2.0
Chad	190	187	-0.3
Cote d'Ivoire	140	127	-2.9
Egypt	63	47	-1.4
Ghana	125	74	-3.4
Kenya	153	114	-2.7
Madagascar	157	150	-0.6
Malawi	161	172	**1.3**
Mali	206	185	-1.5
Morocco	40	32	-0.6
Mozambique	171	179	**1.1**
Namibia	109	88	-2.5
Niger	215	218	**0.5**
Nigeria	146	126	-1.5
Rwanda	60	52	-1.0
Senegal	154	103	-4.7
Tanzania	144	138	-0.8
Togo	131	89	-4.2
Uganda	188	178	-0.8
Zambia	156	160	**0.4**
Zimbabwe	102	112	**0.9**
Average (23 countries)	***141***	***126***	***-1.4***

Table 2 (*continued*)

Country	*ASFR(15-19) Late 1980s or early 1990s*	*ASFR(15-19) Late 1990s or early 2000s*	*Annual change in ASFR(15-19)*
Asia			
Bangladesh	140	137	-0.2
India	116	107	-1.5
Indonesia	67	51	-1.4
Kazakhstan	64	40	-6.1
Nepal	127	110	-3.4
Philippines	50	53	**0.2**
Turkey	55	60	**1.0**
Vietnam	32	22	-2.0
Average (8 countries)	***81***	***72***	***-1.7***
Latin America and the Caribbean			
Bolivia	99	84	-1.0
Brazil	74	86	**1.2**
Colombia	73	90	**0.9**
Dominican Republic	100	116	**1.0**
Guatemala	134	117	-1.5
Haiti	76	86	**1.9**
Nicaragua	130	119	-3.1
Peru	79	61	-1.0
Average (8 countries)	***96***	***95***	***-0.2***

Source: Demographic and Health Surveys individual recode files.

Table 3. Annual change in fertility rate (in terms of per 1,000 points) among women aged 15-17, 18-19, and 15-19, 39 developing countries

	Annual change in fertility rate among women aged		
Country	*15-17*	*18-19*	*15-19*
Africa			
Benin	**0.6**	-6.5	-1.8
Burkina Faso	-1.3	-4.5	-2.8
Cameroon	-2.0	-1.6	-2.0
Chad	**1.1**	-2.3	-0.3
Cote d'Ivoire	-2.8	-1.4	-2.9
Egypt	-0.7	-2.0	-1.4
Ghana	-2.3	-4.1	-3.4
Kenya	-2.0	-3.0	-2.7
Madagascar	**5.8**	**3.1**	**4.6**
Malawi	-0.1	**1.5**	**1.3**
Mali	-2.4	-0.1	-1.5
Morocco	-0.3	-1.4	-0.6
Mozambique	**2.0**	-0.1	**1.1**
Namibia	-1.3	-3.8	-2.5
Niger	**1.4**	-1.0	**0.5**
Nigeria	-1.2	-1.2	-1.5
Rwanda	-1.7	**0.6**	-1.0
Senegal	-4.5	-4.5	-4.7
Tanzania	-0.2	-1.8	-0.8
Togo	-3.0	-5.3	-4.2
Uganda	-2.9	**1.8**	-0.8
Zambia	**0.2**	-1.1	**0.4**
Zimbabwe	**0.1**	**1.5**	**0.9**
Average (23 countries)	***-0.8***	***-1.6***	***-1.1***

Table 3 (*continued*)

Country	*Annual change in fertility rate among women aged*		
	15-17	*18-19*	*15-19*
Asia			
Bangladesh	-0.4	-0.2	-0.2
India	-0.8	-1.5	-1.5
Indonesia	-0.6	-2.5	-1.4
Kazakhstan	-2.6	-11.8	-6.1
Nepal	-1.4	-5.8	-3.4
Philippines	0.0	**0.7**	**0.2**
Turkey	**1.0**	**0.9**	**1.0**
Vietnam	-0.9	-2.8	-2.0
Average (8 countries)	***-0.7***	***-2.9***	***-1.7***
Latin America and the Caribbean			
Bolivia	-0.2	-2.1	-1.0
Brazil	**1.7**	**0.6**	**1.2**
Colombia	**1.5**	-0.2	**0.9**
Dominican Republic	**1.5**	**0.2**	**1.0**
Guatemala	-0.8	-2.7	-1.5
Haiti	**1.1**	**3.5**	**1.9**
Nicaragua	-2.1	-5.6	-3.1
Peru	-0.5	-1.6	-1.0
Average (8 countries)	***0.3***	***-1.0***	***-0.2***

Source: Demographic and Health Surveys individual recode files.

Table 4. Age-specific fertility rate for women aged 15-19, by urban/rural residence, 51 developing countries

		Residence		
Country and survey year(s)	*Reference year*	*Urban*	*Rural*	*Rural rate / Urban rate*
Africa				
Benin 2001	1999.5	72	142	2.0
Burkina Faso 2003	2001.5	60	143	2.4
Cameroon 2004	2002.5	105	183	1.7
Central African Republic 1994 1995	1993	153	157	1.0
Chad 2004	2002.5	163	195	1.2
Comoros 1996	1994.5	50	62	1.2
Cote d'Ivoire 1998 1999	1997	82	169	2.1
Egypt 2003	2001.5	31	58	1.9
Ethiopia 2000	1998.5	50	114	2.3
Gabon 2000	1998.5	127	214	1.7
Ghana 2003	2001.5	42	113	2.7
Guinea 1999	1997.5	115	204	1.8
Kenya 2003	2001.5	88	123	1.4
Madagascar 1997	1995.5	121	204	1.7
Malawi 2000	1998.5	134	180	1.3
Mali 2001	1999.5	129	218	1.7
Morocco 2003 2004	2002	24	43	1.8
Mozambique 2003 2004	2002	143	207	1.5
Namibia 2000	1998.5	82	92	1.1
Niger 1998	1996.5	129	243	1.9
Nigeria 2003	2001.5	88	146	1.7
Rwanda 2000	1998.5	59	50	0.8
Senegal 1997	1995.5	58	142	2.5
South Africa 1998	1996.5	56	99	1.8
Tanzania 1999	1997.5	95	154	1.6
Togo 1998	1996.5	51	118	2.3
Uganda 2000 2001	1999	119	192	1.6
Zambia 2001 2002	2000	127	185	1.5
Zimbabwe 1999	1997.5	93	125	1.3
Average (29 countries)		***91***	***147***	***1.6***

Table 4 *(continued)*

Country and survey year(s)	*Reference year*	*Residence*		*Rural rate / Urban rate*
		Urban	*Rural*	
Asia				
Armenia 2000	1998.5	33	75	2.3
Bangladesh 2004	2002.5	110	145	1.3
India 1998 1999	1997	68	121	1.8
Indonesia 2002 2003	2001	41	63	1.6
Kazakhstan 1999	1997.5	36	44	1.2
Kyrgyzstan 1997	1995.5	55	84	1.5
Nepal 2001	1999.5	72	114	1.6
Pakistan 1990 1991	1989	54	84	1.6
Philippines 2003	2001.5	40	74	1.8
Turkey 1998	1996.5	55	68	1.2
Uzbekistan 1996	1994.5	60	62	1.0
Vietnam 2002	2000.5	11	24	2.2
Yemen 1991 1992	1990	64	114	1.8
Average (13 countries)		***54***	***83***	***1.5***
Bolivia 2003	2001.5	68	124	1.8
Brazil 1996	1994.5	78	122	1.6
Colombia 2004 2005	2003	79	128	1.6
Dominican Republic 2002	2000.5	104	145	1.4
Guatemala 1998 1999	1997	86	139	1.6
Haiti 2000	1998.5	66	108	1.6
Nicaragua 2001	1999.5	99	153	1.5
Paraguay 1990	1988.5	68	128	1.9
Peru 2004	2002.5	47	100	2.1
Average (9 countries)		***77***	***128***	1.7

Source: Demographic and Health Surveys individual recode files.

Table 5. Annual change in the fertility rate (in terms of per 1,000 points) of women aged 15-19 by urban/rural residence, 39 developing countries

	Annual change in ASFR (15-19)		
Country	*Urban*	*Rural*	*Total*
Africa			
Benin	-0.9	-2.4	-1.8
Burkina Faso	-3.4	-2.3	-2.8
Cameroon	-2.0	-0.5	-2.0
Chad	-3.6	**0.7**	-0.3
Cote d'Ivoire	-6.1	**0.3**	-2.9
Egypt	**0.3**	-2.7	-1.4
Ghana	-3.2	-2.3	-3.4
Kenya	-3.4	-2.4	-2.7
Madagascar	**2.5**	-1.1	-0.6
Malawi	-0.1	**1.9**	**1.3**
Mali	-3.8	**0.2**	-1.5
Morocco	-0.2	-0.6	-0.6
Mozambique	-4.8	**5.6**	**1.1**
Namibia	-3.5	-2.1	-2.5
Niger	-6.6	**2.9**	**0.5**
Nigeria	-0.4	-1.6	-1.5
Rwanda	**2.1**	-1.4	-1.0
Senegal	-3.3	-5.6	-4.7
Tanzania	-4.9	**0.8**	-0.8
Togo	-1.4	-5.8	-4.2
Uganda	-1.9	-0.3	-0.8
Zambia	-0.6	**0.1**	**0.4**
Zimbabwe	**1.1**	**1.0**	**0.9**
Average (23 countries)	***-2.1***	***-0.8***	***-1.4***

Table 5 ***(continued)***

Country	*Annual change in ASFR (15-19)*		
	Urban	*Rural*	*Total*
Asia			
Bangladesh	**2.7**	-0.3	-0.2
India	-1.2	-1.7	-1.5
Indonesia	**0.1**	-1.6	-1.4
Kazakhstan	-3.8	-8.6	-6.1
Nepal	-6.0	-3.1	-3.4
Philippines	**0.4**	**0.2**	**0.2**
Turkey	-0.1	**3.6**	**1.0**
Vietnam	-0.2	-2.4	-2.0
Average (8 countries)	***-1.0***	***-1.7***	***-1.7***
Latin America and the Caribbean			
Bolivia	**0.1**	-2.3	-1.0
Brazil	**1.3**	**2.2**	**1.2**
Colombia	**1.1**	**0.9**	**0.9**
Dominican Republic	**1.1**	**1.2**	**1.0**
Guatemala	-0.3	-1.7	-1.5
Haiti	**1.4**	**2.9**	**1.9**
Nicaragua	-2.9	-4.0	-3.1
Peru	-0.4	-2.2	-1.0
Average (8 countries)	***0.2***	***-0.4***	***-0.2***

Source: Demographic and Health Surveys individual recode files.

Table 6. Age-specific fertility rate among women aged 15-19 (ASFR(15-19)) by educational level, 51 developing countries

		Education			*Ratio of ASFR(15-19)*		
Country and survey year(s)	*Reference year*	*None*	*Primary*	*Secondary or higher*	*None / Sec+*	*None / Primary*	*Primary / Sec+*
Africa							
Benin 2001	1999.5	148	94	21	6.9	1.6	4.4
Burkina Faso 2003	2001.5	142	91	38	3.8	1.6	2.4
Cameroon 2004	2002.5	235	173	77	3.1	1.4	2.3
Central African Republic 1994 1995	1993	167	153	129	1.3	1.1	1.2
Chad 2004	2002.5	205	179	107	1.9	1.1	1.7
Comoros 1996	1994.5	89	58	17	5.2	1.5	3.4
Cote d'Ivoire 1998 1999	1997	168	116	39	4.3	1.5	3.0
Egypt 2003	2001.5	109	63	31	3.5	1.7	2.0
Ethiopia 2000	1998.5	124	70	40	3.1	1.8	1.7
Gabon 2000	1998.5	184	201	113	1.6	0.9	1.8
Ghana 2003	2001.5	120	118	48	2.5	1.0	2.5
Guinea 1999	1997.5	195	141	43	4.6	1.4	3.3
Kenya 2003	2001.5	209	132	49	4.2	1.6	2.7
Madagascar 1997	1995.5	235	195	98	2.4	1.2	2.0
Malawi 2000	1998.5	241	182	82	2.9	1.3	2.2
Mali 2001	1999.5	208	168	61	3.4	1.2	2.7
Morocco 2003 2004	2002	63	32	9	6.8	2.0	3.5
Mozambique 2003 2004	2002	220	185	59	3.7	1.2	3.1
Namibia 2000	1998.5	191	117	68	2.8	1.6	1.7
Niger 1998	1996.5	241	167	63	3.8	1.4	2.6
Nigeria 2003	2001.5	238	150	46	5.2	1.6	3.3
Rwanda 2000	1998.5	86	48	28	3.1	1.8	1.8
Senegal 1997	1995.5	133	80	34	3.9	1.7	2.3
South Africa 1998	1996.5	105	113	69	1.5	0.9	1.6
Tanzania 1999	1997.5	151	142	48	3.2	1.1	3.0
Togo 1998	1996.5	150	78	26	5.8	1.9	3.0
Uganda 2000 2001	1999	260	200	82	3.1	1.3	2.4
Zambia 2001 2002	2000	221	189	101	2.2	1.2	1.9
Zimbabwe 1999	1997.5	142	170	85	1.7	0.8	2.0
Average (29 countries)		***172***	***131***	***59***	2.9	1.3	2.2

Table 6 (continued)

Country and survey year(s)	Reference year	Education			Ratio of ASFR(15-19)		
		None	Primary	Secondary or higher	None / Sec+	None / Primary	Primary / Sec+
Asia							
Armenia 2000	1998.5	0	139	49	0.0	0.0	2.8
Bangladesh 2004	2002.5	206	161	108	1.9	1.3	1.5
India 1998 1999	1997	na	na	na	na	na	na
Indonesia 2002 2003	2001	80	90	34	2.4	0.9	2.6
Kazakhstan 1999	1997.5	na	na	40	na	na	na
Kyrgyzstan 1997	1995.5	na	na	75	na	na	na
Nepal 2001	1999.5	154	105	60	2.5	1.5	1.7
Pakistan 1990 1991	1989	na	na	na	na	na	na
Philippines 2003	2001.5	122	126	41	3.0	1.0	3.1
Turkey 1998	1996.5	121	84	19	6.3	1.4	4.4
Uzbekistan 1996	1994.5	na	na	62	na	na	na
Vietnam 2002	2000.5	43	61	11	3.9	0.7	5.6
Yemen 1991 1992	1990	243	228	62	4.0	1.1	3.7
Average (13 countries)		***121***	***124***	***51***	2.4	1.0	2.4
Latin America and the Caribbean							
Bolivia 2003	2001.5	267	149	51	5.3	1.8	3.0
Brazil 1996	1994.5	299	143	64	4.7	2.1	2.2
Colombia 2004 2005	2003	192	192	71	2.7	1.0	2.7
Dominican Republic 2002	2000.5	228	205	62	3.7	1.1	3.3
Guatemala 1998 1999	1997	210	141	45	4.7	1.5	3.2
Haiti 2000	1998.5	192	99	43	4.5	1.9	2.3
Nicaragua 2001	1999.5	215	170	73	2.9	1.3	2.3
Paraguay 1990	1988.5	173	139	39	4.4	1.2	3.5
Peru 2004	2002.5	57	149	48	1.2	0.4	3.1
Average (9 countries)		***204***	***154***	***55***	3.7	1.3	2.8

Source: Demographic and Health Surveys individual recode files.